Georgia Rules and Regulations
Administrative Bulletin for March 2021

OFFICE OF SECRETARY OF STATE
ADMINISTRATIVE PROCEDURE DIVISION
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Final rules filed with the Georgia Secretary of State during the month of *March 2021:*

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Department 159. DEPARTMENT OF ECONOMIC DEVELOPMENT

Chapter 159-3. GLOBAL COMMERCE DIVISION

Subject 159-3-1. COMPETITIVE PROJECTS OF REGIONAL SIGNIFICANCE

159-3-1-.01 Sales and Use Tax Exemption for Competitive Projects of Regional Significance

(1) **Purpose.** This rule provides guidance concerning the eligibility criteria for the sales and use tax exemption on construction materials for competitive projects of regional significance under O.C.G.A. § 48-8-3(93).

(2) Cross-Reference. This rule shall be construed in harmony with the Rules of the Georgia Department of Revenue, Sales and Use Tax Division, Chapter 560-12-2, Substantive Rules and Regulations, Rule 560-12-2-.20, entitled Competitive Projects of Regional Significance.

Cite as Ga. Comp. R. & Regs. R. 159-3-1-.01

AUTHORITY: O.C.G.A. § 48-8-3(93)(D)**.**

HISTORY: Original Rule entitled "Sales and Use Tax Exemption for Competitive Projects of Regional Significance" adopted. F. Mar. 18, 2021; eff. Apr. 7, 2021.

159-3-1-.02 Definitions

(1) 'Business Enterprise' means any business or the headquarters of any such business which is engaged in manufacturing, including, but not limited to, the manufacturing of alternative energy products for use in solar, wind, battery, bioenergy, biofuel, and electric vehicle enterprises, warehousing and distribution, processing, telecommunications, broadcasting, research and development industries, biomedical manufacturing, and services for the elderly and persons with disabilities. Such term shall not include retail businesses.

(2) 'Competitive Project of Regional Significance' means the location or expansion of some or all of a Business Enterprise's operations in this state where the Commissioner of Economic Development determines that the project would have a significant regional impact.

Cite as Ga. Comp. R. & Regs. R. 159-3-1-.02

AUTHORITY: O.C.G.A. § 48-8-3(93)(D)**.**

HISTORY: Original Rule entitled "Definitions" adopted. F. Mar. 18, 2021; eff. Apr. 7, 2021.

159-3-1-.03 Eligible Projects

(1) Every project certified must be a 'competitive project,' which requires that:

(a) The project considered for this exemption would otherwise locate outside of the state of Georgia without this incentive; and

(b) The taxpayer provides a letter attesting to the competitiveness of the project.

(2) The project must be 'regionally significant.' A determination of regional significance will be made by the Commissioner of Economic Development and be based on factors including but not limited to:

(a) The projects geographic location within the State of Georgia;

(b) The number of jobs created by the project;

(c) The amount of private investment created by the project;

(d) The average wage of the jobs created by the project;

(e) The Commissioner's determination that the project would have a significant regional impact; and

(f) Any other factors considered important by the Commissioner.

(3) The following development types shall not be eligible for the exemption provided for in O.C.G.A. § 48-8-3(93):

(a) Commercial developments;

(b) Retail developments;

(c) Residential developments;

(d) Speculative industrial developments.

Cite as Ga. Comp. R. & Regs. R. 159-3-1-.03

AUTHORITY: O.C.G.A. § 48-8-3(93)(D).

HISTORY: Original Rule entitled "Eligible Projects" adopted. F. Mar. 18, 2021; eff. Apr. 7, 2021.

159-3-1-.04 Effective Date

This chapter shall be applicable to taxable years beginning on or after January 1, 2021.

Cite as Ga. Comp. R. & Regs. R. 159-3-1-.04

AUTHORITY: O.C.G.A. § 48-8-3(93)(D).

HISTORY: Original Rule entitled "Effective Date" adopted. F. Mar. 18, 2021; eff. Apr. 7, 2021.

Department 160. RULES OF GEORGIA DEPARTMENT OF EDUCATION

Chapter 160-3.

Subject 160-3-1. ASSESSMENT

160-3-1-.07 Testing Programs - Student Assessment

(1) **DEFINITIONS.**

(a) **ACCESS for ELLs** - an English language proficiency test administered annually to all English learners (EL) in Georgia for the purposes of determining the English language proficiency level of students; providing districts with information that will help them evaluate the effectiveness of their ESOL programs; providing information that enhances instruction and learning in programs for English learners; assessing the annual English language proficiency gains using a standards-based assessment instrument; and providing data for meeting federal and state requirements with respect to student assessment.

(b) **Accommodation** - an allowable alteration in the administration of an assessment that assists students with access to participate in an assessment and is clearly documented within a student's Individualized Education Program (IEP), Section 504 Individual Accommodation Plan (IAP), or English Learner (EL) Testing Participation Plan. An accommodation is provided to a student during an assessment so that the assessment measures what the student knows and is able to do.

(c) **Conditional Accommodation** - a more expansive accommodation that provides access for students with more severe disabilities or limited English proficiency who would not be able to access the assessment to demonstrate their achievement without such assistance.

(d) **Conditional Administration** - a test administration in which a more expansive accommodation is utilized to provide access to an assessment for a small number of eligible students with more severe disabilities or more limited English proficiency and who, therefore, would not be able to access the assessment without such assistance.

(e) **English Learner (EL) Student** - a student whose primary or home language is one other than English and who is eligible for services based on the results of an English language placement assessment and, if warranted, additional assessments specified in Rule 160-4-5-.02 Language Assistance: Programs for English Learners (ELs).

(f) **English Learner Monitored (EL-M) Student** - a student whose primary or home language is not English and who, based on state English to Speakers of Languages (ESOL) program criteria, has exited the ESOL program or an alternative language assistance program in the past four years as provided for in State Board Rule 160-4-5-.02 Language Assistance: Program for English Learners (ELs) (2)(a) 4(iv).

(g) **EL Testing Participation Committee** - a committee convened to make testing decisions for EL students. This committee can serve as part of the Language Assessment Conference as defined in 160-4-5-.02 Language Assistance: Programs for English Learners.

(h) **Georgia Alternate Assessment (GAA)** - an alternate assessment based on alternate achievement standards for students with significant cognitive disabilities identified and served in accordance with the Individuals with Disabilities Education Act (IDEA) and whose IEP team has determined the students are unable to reasonably participate in the regular assessment program. The purpose of the GAA is to ensure all students, including students with significant cognitive disabilities, are provided access to the state- adopted content standards and given the opportunity to demonstrate progress toward achievement of the state standards.

(i) **Georgia Department of Education (GaDOE) -** the state agency charged with the fiscal and administrative management of certain aspects of K-12 public education, including the implementation of federal and state mandates. Such management is subject to supervision and oversight by the State Board of Education.

(j) **Georgia Kindergarten Inventory of Developing Skills (GKIDS) -** a performance assessment designed to provide teachers with information about the level of instructional support needed by individual students enrolled in kindergarten and their readiness for first grade.

(k) **Georgia Milestones Assessment System (Georgia Milestones)** - a criterion-referenced test, administered in grades 3-8 at the end of each grade and high school at the end of each SBOE identified course designed to measure student mastery of the state's content standards as an indicator of preparedness for the next grade, course, or educational endeavor, be that college or career. Georgia Milestones includes a norm-referenced component to provide national comparison data.

(l) **Grade-Level Student** - a student who is reported to the GaDOE at a grade level in accordance with Rule 160-5-1-.07 Student Data Collection.

(m) **Individualized Education Program (IEP) -** a written statement of special education, related services, and, as appropriate, transition services, that meets the unique needs of the student with a disability. An IEP also includes any specific test administration accommodations, needed instructional modifications, and supports for the student with a disability. The IEP is developed, reviewed, and revised by an appropriately staffed IEP team, including the student's parent(s). (Rule 160-4-7-.21 Definitions).

(n) **Individuals with Disabilities Education Act (IDEA) -** the federal law that was enacted to ensure that all students with disabilities have available to them a free appropriate public education that emphasizes special education and related services designed to meet their unique needs and prepare them for employment and independent living; to ensure that the rights of students with disabilities and their parents are protected; to assist states, localities, educational service agencies, and federal agencies to provide for the education of students with disabilities; and to assess and ensure the effectiveness of efforts to educate students with disabilities. (Rule 160-4-7-.21 Definitions).

(o) **Language Proficiency Assessment** - an assessment of an EL student's: (1) progress in the acquisition of the English language in the areas of listening, speaking, reading and writing; and (2) attainment of a prescribed level of performance in listening, speaking, reading, and writing to enable a student to communicate independently and effectively in both social and academic settings.

(p) **Modification -** an alteration in the administration of an assessment that results in a change in the content or construct being assessed, typically either through the addition or removal of content; modifications are strictly prohibited on state assessments.

(q) **National Assessment of Educational Progress (NAEP) -** a federally mandated and funded assessment program that is designed to collect information about what fourth, eighth, and twelfth grade students know and can do in a variety of key subject areas and is administered to a sample of students in all states.

(r) **Non-standard Administration** - a test administration in which the procedures and directions included in the administration manual are not followed exactly.

(s) **Norm-referenced Test (NRT) -** a test designed to provide information on how well students perform in comparison to an external reference group or norm group.

(t) **Section 504 Student** - a student who currently has an impairment that substantially limits one or more major life activities, who has a record of such impairment or who is regarded as having such an impairment, and who may not be eligible for services under IDEA.

(u) **Special Education -** specially designed instruction provided at no cost to parents that meets the unique needs of a student with a disability. Special education includes instruction in the classroom, in the home, in hospitals,

institutions and other settings, physical education, travel training and vocational education. (Rule 160-4-7-.21 Definitions).

(v) **Standard Accommodation** - a test administration accommodation that provides access to the assessment without altering the construct measured by the assessment.

(w) **Standard Administration** - a test administration in which the procedures and directions included in the administration manual are followed exactly.

(x) **Standard Setting** - a research-based process that involves subject matter experts and stakeholders using both judgmental methods and performance data to determine the number correct scores (i.e., cut scores) required to achieve established performance levels.

(y) **State Board of Education (SBOE)** - the constitutional authority which defines education policy for the public K-12 education agencies in Georgia.

(z) **Student with Disabilities** - a student who is classified as disabled according to Rule 160-4-7-.21 Definitions (10) and/or according to Section 504 of the 1973 Rehabilitation Act. [34 C.F.R. § 104.33(a)]

(2) **GEORGIA STUDENT ASSESSMENT PROGRAM REQUIREMENTS**. Each local system shall assess all students using SBOE-designated assessment instruments, as required. An IEP team, under limited circumstances and in accordance with GaDOE and federal guidelines, may consider the SBOE-approved alternate assessment for a small number of students with significant cognitive disabilities (approximately 1%) who receive special education services and are unable to participate in the general assessment. The SBOE-approved alternate assessment based on alternate achievement standards shall be the Georgia Alternate Assessment (GAA) for students in grades 3-12 in language arts, mathematics, science, and social studies. All EL students must participate annually in the state-adopted English proficiency assessment.

(a) **KINDERGARTEN ASSESSMENT**.

1. Each local school system shall assure that the following requirements are met.

(i) All kindergarten students shall be assessed using the Georgia Kindergarten Inventory of Developing Skills (GKIDS) during their kindergarten year as the school readiness assessment for first grade, and

(ii) Only certified teachers of kindergarten or first grade students and who have been trained in the use of the GKIDS, shall administer the assessment.

2. The local school system shall use information obtained from the administration of the GKIDS to make placement decisions on an individual student basis. Documentation that supports an individual retention decision shall be on file in the student's permanent record. The information obtained by the GKIDS shall be used as part of the required written documentation. The student's parent/guardian shall be notified of the final placement decision. The local school system shall provide alternative, and developmentally appropriate instruction to students who spend a second year in kindergarten.

(b) **FIRST-GRADE ASSESSMENT**. Subject to appropriations, local systems shall administer a formative assessment with a cumulative component that is tied to performance indicators in reading and mathematics in grade one.

(c) **SECOND-GRADE ASSESSMENT**. Subject to appropriations, local systems shall administer a formative assessment with a cumulative component that is tied to performance indicators in reading and mathematics in grade two.

(d) **THIRD-GRADE ASSESSMENTS**. Local systems shall assess all third-grade students with the state-adopted English/language arts and mathematics tests annually according to a schedule established by the SBOE.

(e) **FOURTH-GRADE ASSESSMENT**. Local systems shall assess all fourth-grade students with the state-adopted English/language arts and mathematics tests annually according to a schedule established by the SBOE.

(f) **FIFTH-GRADE ASSESSMENTS**. Local systems shall assess all fifth-grade students with the state-adopted English/language arts, mathematics, and science tests annually according to a schedule established by the SBOE.

(g) **SIXTH-GRADE ASSESSMENT**. Local systems shall assess all sixth-grade students with the state-adopted English/language arts and mathematics tests annually according to a schedule established by the SBOE.

(h) **SEVENTH-GRADE ASSESSMENT**. Local systems shall assess all seventh-grade students with the state-adopted English/language arts and mathematics tests annually according to a schedule established by the SBOE.

(i) **EIGHTH-GRADE ASSESSMENTS**. Local systems shall assess all eighth-grade students with the state-adopted English/language arts, mathematics, science, and social studies tests annually according to a schedule established by the SBOE.

(j) **END-OF-COURSE (EOC) ASSESSMENTS.** Local school systems shall assess students at the completion of core high school courses specified by the SBOE, in accordance with O.C.G.A. 20-2-281(a), to measure student achievement in the four content areas of English/Language Arts, Mathematics, Science, and Social Studies.

1. With the exception of the following courses, Algebra I, Coordinate Algebra, and Biology, a student shall be exempt from taking the end-of-course assessment for a core subject course if he or she earns a post-secondary credit in that course through dual enrollment pursuant to O.C.G.A. 20-2-149.2 or 20-2-161.3. Postsecondary grades earned, in this situation, shall be used in the state accountability system. All students enrolled in Algebra I, Coordinate Algebra, and Biology must take the EOC.

(i) Beginning with the 2021-2022 school year, students are not exempt from taking the end-of-course assessment in American Literature and Composition, therefore, all students enrolled in American Literature and Composition must take the EOC.

2. With the exception of the following courses, Algebra I, Coordinate Algebra, and Biology, a student shall be exempt from taking the end-of-course assessment for a core subject course if he or she passes an Advanced Placement (AP) course in a related subject pursuant to O.C.G.A. § 20-2-159.4 or if he or she passes an International Baccalaureate (IB) course in a related subject. Grades earned in Advanced Placement or International Baccalaureate courses, in this situation, shall be used in the state accountability system. All students enrolled in Algebra I, Coordinate Algebra and Biology must take the EOC.

(i) Beginning with the 2021-2022 school year, students are not exempt from taking the end-of-course assessment in American Literature and Composition, therefore, all students enrolled in American Literature and Composition must take the EOC.

3. Individuals no longer enrolled in a Georgia public school, who were not eligible for a diploma solely as a result of not achieving a passing score on the former graduation assessments (i.e., Basic Skills Test, Georgia High School Graduation Tests, Georgia High School Writing Test), may submit a petition to their local school system to determine their eligibility for a diploma as provided for by O.C.G.A. § 20-2-281.1.

(k) **NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS (NAEP)** Local school systems shall participate in the NAEP assessment programs.

(3) **STUDENT ASSESSMENT RESPONSIBILITIES FOR SPECIAL POPULATIONS.**

(a) **STUDENTS WITH DISABILITIES WHO RECEIVE EDUCATIONAL SERVICES DEFINED BY AN IEP OR SECTION 504 ACCOMMODATION PLAN.** Local systems shall ensure that all students with IEPs or Section 504 Accommodation Plans participate in the state and local assessment programs. The IEP or Section 504 Accommodation Plans for these students shall identify the state-approved accommodations required to enable participation.

1. Decisions related to the participation in and identification of any needed accommodations in administration shall be made by the IEP team in the Individualized Education Program (IEP) review or by the Section 504 Individual Accommodation Plan (IAP) committee in its meeting.

2. All students with disabilities shall be coded according to the primary disability for each assessment in which they participate. Student participation in and performance on all assessments shall be accurately documented within each student's IEP or IAP so that state and federal reporting guidelines can be met and so that performance outcome measures can be monitored for compliance.

3. Accommodations must be provided for students with disabilities as identified in the IEP or Section 504 IAP. Accommodation decisions made by the appropriate IEP or Section 504 IAP committee shall take into account the accommodations that are currently used in the instructional or classroom assessment process and must be part of the usual instructional practice for the student. Additionally, these committees shall consider whether the accommodation is necessary for access to the assessment process, previous experience with and the usefulness of the recommended accommodation, and whether or not the recommended accommodation impacts the integrity of the assessment. Students shall receive the accommodations they need in order to meaningfully participate in the assessment, but should not be given more than is necessary to meaningfully participate. The majority of students are expected to participate in the regular assessments with only a small percentage requiring a conditional/nonstandard administration. Only state-approved accommodations may be included in an IEP or Section 504 IAP.

4. Accommodations can result in administrations of the assessment that are either standard or conditional. *Standard administration* refers to testing conditions in which the procedures and directions are administered **exactly** as described in the test administration manual and non-altering accommodations are used. *Conditional administration* refers to use of more expansive accommodations utilized to provide access for a small percentage of students with more severe disabilities who would not be able to access the assessment without such assistance. Conditional accommodations shall be used sparingly as the majority of students requiring accommodations are able to successfully demonstrate their achievement with standard accommodations. The use of conditional accommodations must be required by the student to access the test because of his or her disability and documentation substantiating the need shall be included in the student's IEP along with specific instructional goals to address the need. Assessments differ in what results in standard and conditional administrations. Specific information concerning the standard or conditional nature of an accommodation is published annually in the *Student Assessment Handbook* and in the respective testing administration materials that accompany each assessment (e.g., Examiner's Manual and Directions for Administration). Should an individual student need an accommodation not on the approved list for a state test, approval must be granted by the Assessment and Accountability Division of the GaDOE before the accommodation may be used.

5. All students must be assessed annually using the appropriate state-mandated assessments listed in section (2) of this rule.

6. When an IEP team determines that a student at any grade level is not able to participate in an administration of any local or state-mandated assessment, even with reasonable accommodations, the IEP team will document the reasons and make the necessary alternate assessment decision for that student following the state-approved participation guidelines. For the state-mandated assessments listed in Paragraph (2) of this rule, the alternate assessment based on alternate achievement standards shall be the GAA. A relatively small percentage of students (approximately 1%) are expected to participate through an alternate assessment.

7. Students with significant cognitive disabilities participating in the GAA must be provided access to the state-adopted content standards. Educators may adjust the learning expectations for this group of unique students provided the instruction is based on and aligned to the grade-level content standards. Instruction may reflect pre-requisite skills but must be sufficiently challenging for the individual student.

8. Compliance standards, reporting and enforcement. All students are expected to participate in all state-mandated assessments including students pursuing a Special Education Diploma. Most students are expected to participate in standard administrations, with a small percentage (less than 3%) under conditional administrations and a small percent (approximately 1%) in the GAA.

(i) Student participation in and performance on all state-mandated assessments, including the GAA shall be accurately documented so that state and federal reporting guidelines can be met and so that performance outcome measures can be monitored for compliance.

(ii) All students with disabilities shall be included in the accountability reporting process.

(I) All participation data and results data shall be available to the Governor's Office of Student Achievement (GOSA) for the process of evaluating and rating school systems.

(II) The results of the GAA shall be included as part of the state accountability system and system report cards.

(III) The local system and GaDOE shall monitor participation rates for each assessment program, including alternate assessments, and the usage of accommodations, including conditional accommodations.

(IV) The GaDOE shall automatically monitor/investigate any local system not meeting assessment participation rate requirements. All remaining local school systems will be monitored on a rotational basis as a part of the regular scheduled monitoring process. Failure to meet those requirements may result in sanctions ranging from imposition of corrective action plans to withholding of funds.

(V) The GaDOE will review results of all administrations and explore additional reporting formats to create meaningful and useful information from the results of standard and conditional/nonstandard administrations and the GAA.

(b) **ENGLISH LEARNER STUDENTS**

1. Students who have been defined as English Learner (EL) shall participate in all assessment programs. These students shall be coded EL on each test. If a student has exited the ESOL program or an alternative language assistance program in the past four years, the student shall be coded EL-M on each test**.** A student who has been exited for more than four years from the ESOL program shall not be coded as EL or EL-M on each test.

2. In certain situations, individual needs of EL and EL-M students may warrant accommodations. These accommodations shall be determined by and recorded during a documented meeting of the EL Testing Participation Committee. Those students identified as EL-M may receive, based on individual need, standard state-approved accommodations for a maximum of two years after exiting ESOL or an alternative language assistance program. At the end of the first two years of the monitoring period, EL-M students are no longer eligible for test administration accommodations. Testing accommodations shall be made only when appropriate documentation is on file for each eligible student. Administration of the assessments and use of test administration accommodations, including conditional accommodations for those students with very limited English proficiency, shall be according to established guidelines and procedures in the test administration manual(s), *Examiner's Manual* and the *Student Assessment Handbook*. Accommodation decisions made shall take into account the accommodations that are currently used in the instructional or classroom assessment process and must be part of the usual instructional practice for the student. Additionally the EL Testing Participation Committee shall consider experience with and utility of the accommodation and whether or not the recommended accommodation impacts the integrity of the assessment. Conditional accommodations shall be used sparingly and shall not be assigned to EL-M students. The local system and DOE shall monitor participation rates for each assessment program, and the usage of accommodations, including conditional accommodations.

3. The EL Testing Participation Committee shall be composed of a minimum of three members, one of whom is a certified educator. The EL/ ESOL teacher/ paraprofessional/ aide currently serving the student with English language assistance is required to be a member of the committee. The remaining members shall be chosen from the following: regular language arts, reading or English teacher; student's parent or legal guardian or the student, if 18 years or older; school administrator; other content area teachers; counselor; school psychologist; and lead teacher. Documentation of each EL Testing Participation Committee shall be placed in the student's permanent record. These documents shall contain the following information: names of participants; date(s) of meeting(s); date of entry into U.S. schools; test scores proving eligibility for ESOL services; the dates of administration and the name of the tests

to be administered; alternatives considered (i.e., regular administration, accommodations); final action including specific accommodations for each test/subtest consistent with current instructional accommodations; signatures of committee members, school administrator and, parent, legal guardian or student if 18 years or older. The list of tests to be administered must include all state assessments that are mandated for the student's grade level. In addition to these state assessments, students who are required to participate in language proficiency tests under Title III of the Elementary and Secondary Education Act must participate in the language proficiency test prescribed by the state.

4. EL students enrolling for the first time in a U.S. school must participate in all SBOE-designated assessments and must be coded as a first time in U.S. school enrollee in state-required data collections. All scores resulting from the administration of state assessments will be removed from any statewide accountability calculations for the first year of a newly-arrived EL student's enrollment in a U.S. school. Though not used for statewide accountability purposes in the first year, such scores will serve as the baseline for student growth calculations and be included beginning in year two of such students' enrollment. Both achievement and growth will be included in statewide accountability calculations beginning in the third year of enrollment.

(4) **TESTING REGULATIONS AND PROCEDURES**. Local school systems shall adhere to all written regulations and procedures relating to testing and test administration, including the distribution and collection of test materials, test security, use of test results and official testing dates established in the *Student Assessment Handbook*, *Test Administration Manual, Accessibility and Accommodations Manual, Assessment Administration Protocol Manuals*, and assessment supplements and correspondence.

(a) Assessment guidelines shall be reviewed annually.

(b) The local system shall ensure that individual student assessment scores become a part of students' records as soon as possible after testing and that records follow students to their new schools when requested as specified in Rule 160-5-1-.14 Transfer of Student Records.

(c) Scores for an individual student shall be made available only to said student, to the parent(s) or legal guardian(s) of said student, and to appropriate local, state, and federal governmental agencies as provided by state and federal law.

(d) Local school systems shall provide individual student score reports for all state-mandated assessments to the parent(s) or legal guardian(s) in a timely manner.

(e) Procedures shall be followed in compliance with O.C.G.A. § 19-7-5, Reporting of Child Abuse, and O.C.G.A. § 16-10-50, Hindering Apprehension and Punishment of a Criminal, for reporting individual writing assessments which fall under the designated situations.

(f) All assessments shall be administered by Georgia-certified educators.

(g) Local systems shall train and orient any persons involved directly or indirectly in the assessment process and procedures required for appropriate and secure administration of all state-mandated assessments.

(h) Allegations of failure to follow procedures required for appropriate and secure administration of state-mandated assessments shall be reported to the GaDOE and the Ethics Division of the Professional Standards Commission.

(i) All students shall be assessed in English.

(j) In accordance with applicable state promotion and retention policies and laws, students who do not participate in state mandated tests shall not be promoted to the next grade. For EL students enrolled in their first year in a U.S. school placement decisions shall be made on an individual student basis by the EL Testing Participation Committee and be consistent with local school board policy.

(k) In cases where promotion and retention specifies the administration of an alternate test as a requirement for promotion to the next grade level in grades three, five, and eight, such assessment shall be an alternate version of the state-adopted test for that grade level.

(5) **STAFF DEVELOPMENT**.

(a) Teachers in grades one through 12 shall be offered the opportunity to participate annually in a staff development program on the use of tests within the instructional program designed to improve students' academic achievement. This program shall instruct teachers in the effective utilization of test results and other appropriate applications as determined by the SBOE, and may be provided by either the GaDOE or the local unit of administration.

Cite as Ga. Comp. R. & Regs. R. 160-3-1-.07

AUTHORITY: O.C.G.A. §§ 16-10-50**;** 19-7-5**;** 20-2-131**;** 20-2-140**;** 20-2-142**;** 20-2-150(a)**;** 20-2-151**;** 20-2-154(a)**;** 20-2-240(a)**;** 20-2-242**;** 20-2-281**;** 20-2-282**;** 50-18-70**.**

HISTORY: Original Rule entitled "Testing Programs - Student Assessment" adopted. F. Apr. 20, 1990; eff. May 10, 1990.

Repealed: New Rule, same title adopted. F. Sept. 18, 1991; eff. Oct. 8, 1991.

Amended: F. Aug. 21, 1995; eff. Sept. 10, 1995.

Amended: F. Sept. 24, 1996; eff. Oct. 14, 1996.

Amended: F. July 25, 1997; eff. Aug. 14, 1997.

Amended: F. Mar. 16, 1999; eff. Apr. 5, 1999.

Amended: F. Apr. 16, 2001; eff. May 6, 2001.

Amended: F. Jan. 9, 2004: eff. Jan. 29, 2004.

Amended: F. July 15, 2005; eff. Aug. 4, 2005.

Amended: F. Sept. 13, 2007; eff. Oct. 3, 2007.

Amended: F. Dec. 11, 2008; eff. Dec. 31, 2008.

Amended: F. Apr. 13, 2011; eff. May 3, 2011.

Amended: F. Aug. 21, 2014; eff. Sep. 10, 2014.

Amended: F. Nov. 3, 2016; eff. Nov. 23, 2016.

Amended: F. Nov. 9, 2017; eff. Nov. 29, 2017.

Amended: F. Nov. 7, 2019; eff. Nov. 27, 2019.

Amended: F. Mar. 25, 2021; eff. Apr. 14, 2021.

Department 160. RULES OF GEORGIA DEPARTMENT OF EDUCATION

Chapter 160-4.

Subject 160-4-2. DIVISION OF GENERAL INSTRUCTION

160-4-2-.34 Dual Enrollment

(1) **DEFINITIONS**

(a) **Commission** - the Georgia Student Finance Commission created by O.C.G.A. § 20-3-233.

(b) **Dual Credit Course** - a postsecondary course, including a virtual course, taken by an eligible high school student pursuant to an arrangement at or through an eligible postsecondary institution for which the student receives secondary credit from his or her eligible high school.

(c) **Eligible core course** - a course in English, math, science, social studies, or a foreign language upon which the Commission calculates grade point averages for HOPE scholarship eligibility pursuant to O.C.G.A. § 20-2-157(b)(3.1) and which is included in the eligible course list.

(d) **Eligible course list** - a list of courses maintained by the Commission which identifies courses approved for funding authorized by O.C.G.A. § 20-2-161.3 and shall include eligible core courses and eligible Career, Technology, and Agricultural Education (CTAE) courses.

(e) **Eligible CTAE course** - all career, technical, and agricultural education courses which are aligned with the Georgia Department of Education's Career Clusters and Pathways programs and which are included in the eligible course list.

(f) **Eligible dual credit course** - a dual credit course which is included in the eligible course list and which is eligible for payment, with state funds, under these Programs subject to the following maximum credit hour caps:

1. Eligible high school students with 18 or fewer semester hours, or the equivalent amount of quarter hours, of dual credit courses funded by O.C.G.A. § 20-2-161.3 on or before June 30, 2020, shall be limited to a total of 30 semester hours, or the equivalent amount of quarter hours, of eligible dual credit courses; and

2. Eligible high school students with 19 or more semester hours, or the equivalent amount of quarter hours, of dual credit courses funded by O.C.G.A. § 20-2-161.3 on or before June 30, 2020, shall be limited to 12 additional semester hours, or the equivalent amount of quarter hours, of eligible dual credit courses.

(g) **Eligible High School** - any private or public secondary educational institution located within the State of Georgia and any home study program operated pursuant to O.C.G.A. § 20-2-690.

(h) **Eligible High School Student** - a student who is:

1. Entering or enrolled in eleventh or twelfth grade at an eligible high school taking any eligible dual credit course at any eligible postsecondary institution; or

2. Entering or enrolled in tenth grade at an eligible high school when such student:

(i) Is enrolled in an eligible CTAE course at an institution within the Technical College System of Georgia;

(ii) Has obtained prior to the beginning of the term of dual enrollment coursework an SAT or ACT test score that would meet the assessment requirements of a Zell Miller Scholar pursuant to O.C.G.A. § 20-3-519(27)(A)(i) and is taking eligible core courses at any eligible postsecondary institution; or

(iii) Was enrolled as a ninth grader in one or more dual credit courses at an eligible postsecondary institution for which payment was made pursuant to O.C.G.A. § 20-2-161.3 on or before June 30, 2020.

(i) **Eligible Postsecondary Institution** - any eligible postsecondary institution as defined in O.C.G.A. § 20-3-519(7).

(j) **Georgia Department of Education** - the state agency charged with the fiscal and administrative management of certain aspects of K-12 public education, including the implementation of federal and state mandates. Such management is subject to supervision and oversight by the State Board of Education.

(k) **Programs** - the arrangement authorized by O.C.G.A §§ 20-2-161.3 and 20-2-149.2, also referred throughout this rule as Options A and B respectively, whereby an eligible high school student takes one or more dual credit courses, including self-pay dual credit courses, with the goal of completing postsecondary credit and high school diploma requirements.

(l) **Self-Pay Dual Credit Course** - a postsecondary course, including a virtual course, taken by an eligible high school student pursuant to an arrangement at or through an eligible postsecondary institution for which, beginning with the 2021-2022 school year, the student receives secondary credit from his or her eligible high school and which is not funded using state funds.

(m) **Secondary Credit** - a high school credit for dual credit courses taken at or through an eligible postsecondary institution under the Programs.

(2) **REQUIREMENTS**

(a) An eligible high school student may apply to an eligible postsecondary institution to take one or more dual credit courses or self-pay dual credit courses at or through that postsecondary institution which are approved for secondary credit pursuant to O.C.G.A. § 20-2-161.3(f). If accepted at an eligible postsecondary institution, such eligible high school student may take any such approved dual credit course or self-pay dual credit course at or through that postsecondary institution, whether or not the course is taught during the regular eligible high school day and receive secondary credit therefor under the conditions provided in O.C.G.A. § 20-2-161.3.

(b) No later than the first day of February each year, each eligible high school shall provide information about the Programs, which shall include forms provided by the Georgia Department of Education, to all its eligible high school students. An eligible high school shall also provide counseling services to such students and their parents or guardians before the students enroll in the Programs. Prior to participating in the program, the student and the student's parent or guardian shall sign the form provided by the eligible high school or by an eligible postsecondary institution stating that they have received the counseling specified in this subsection and that they understand the responsibilities that shall be assumed in participating in the Programs.

1. Information and materials regarding the Programs shall be provided to each eighth grade public school student at the time the student is developing his or her individual graduation plan as required by O.C.G.A. § 20-2-327.

(c) In order to participate in the Programs, each eligible high school shall be required to execute a participation agreement as prescribed by the Commission.

(d) A participating eligible high school shall grant secondary credit to an eligible high school student enrolled in a dual credit course or self-pay dual credit course in an eligible postsecondary institution if such student successfully completes such course. The secondary credit granted shall be for a comparable required course; career, technical, and agricultural education course; or elective course. Upon completion of an eligible postsecondary institution's dual credit course or self-pay dual credit course, the eligible high school student shall be responsible for requesting that

the eligible postsecondary institution notify such student's eligible high school regarding his or her grade in such course.

1. Secondary credits granted for eligible postsecondary institution dual credit or self-pay dual credit courses as provided in (2)(d) shall be counted by the eligible high school toward graduation requirements and subject area requirements of the eligible high school. Evidence of successful completion of each dual credit or self-pay dual credit course and secondary credits granted shall be included in the eligible high school student's secondary school records and transcripts.

2. Grades earned at an eligible postsecondary institution shall be included on the high school transcript and shall be used, by the eligible high school, to compute a student's grade point average.

3. Secondary credits granted at an eligible postsecondary institution shall be converted and transcribed on the eligible high school student's transcript.

(i) Eligible postsecondary institution semester hour credit shall be converted to secondary credit as follows:

(I) 1 to 2 semester hours = .5 secondary credit

(II) 3 or more semester hours = 1 secondary credit

(III) 1 to 3 quarter hour credits = .5 secondary credit

(IV) 4 or more quarter hour credits = 1 secondary credit.

(e) A participating eligible high school shall be required to award a high school diploma to any eligible high school student who is enrolled at or through an eligible postsecondary institution under the Programs as long as the credit earned at or through such postsecondary institution satisfies course requirements needed for the eligible high school student to complete high school graduation.

(f) **Dual Enrollment Option A Requirements**

1. An eligible high school student shall meet the following requirements, pursuant to O.C.G.A § 20-2-161.3, in order to be awarded a high school diploma:

(i) Receives a score of admission acceptable on the readiness assessment required by the eligible postsecondary institution.

(ii) Earns a secondary credit in State Board identified high school courses that culminate in a state administered end-of-course assessment in each of the following subject areas: English/language arts, Mathematics, Science and Social Studies. Eligible high school students must participate in the appropriate end-of-course assessment.

(I) However, State Board of Education Rule 160-3-1-.07 TESTING PROGRAMS - STUDENT ASSESSMENT (2)(j)1 establishes certain exemptions from end-of-course assessments.

(iii) Earns one secondary credit in health and physical education.

(iv) Completes approved postsecondary courses that satisfy high school graduation requirements.

(v) Earns the requisite credits required by State Board of Education Rule 160-4-2-.48 High School Graduation Requirements for Students Enrolling in the Ninth Grade for the First Time in the 2008-09 School Year and Subsequent Years.

(g) **Dual Enrollment Option B Requirements**

1. An eligible high school student shall meet the following requirements, pursuant to O.C.G.A § 20-2-149.2, in order to be awarded a high school diploma:

(i) Receives a score of admission acceptable on the readiness assessment required by the eligible postsecondary institution.

(ii) Earns two secondary credits in state required ninth and tenth grade level high school courses or their equivalent: two English courses, two mathematics courses, two science courses, and two social studies courses; and any state required tests associated with any such course.

(I) Students pursuing a high school diploma according to the provisions of (2)(g) of this rule must successfully complete and pass the following courses and participate in the specified end-of-course assessments: Algebra I or Coordinate Algebra, and Biology. Beginning with the 2021-2022 school year, students pursuing a high school diploma according to the provisions of (2)(g) of this rule must also successfully complete and pass American Literature and Composition and participate in the specified end-of-course assessment.

(iii) Earns one secondary credit in health and physical education.

(iv) Completes one of the following postsecondary requirements:

(I) An associate degree program; or

(II) A technical college diploma program and all postsecondary academic education and technical education and training prerequisites for any state, national, or industry occupational certifications or licenses required to work in the field; or

(III) At least two technical college certificate of credit programs in one specific career pathway and all postsecondary academic education and technical education and training prerequisites for any state, national, or industry occupational certifications or licenses required to work in the field as determined by the Technical College System of Georgia.

(v) A student who meets the requirements of sections (2)(g)1.(i) through (iv) shall be deemed to have met all graduation requirements of the State Board of Education and shall not be subject to any courses or assessments otherwise required for purposes of graduation.

(h) No local school system that receives funding under the Quality Basic Education Act shall exclude eligible high school students taking one or more dual credit courses pursuant to this Code section from eligibility determinations for valedictorian and salutatorian of a participating eligible high school; provided, however, that this shall not apply to a student who moves into the local school system after tenth grade and has not taken any courses on site at the participating eligible high school.

Cite as Ga. Comp. R. & Regs. R. 160-4-2-.34

AUTHORITY: O.C.G.A. §§ 20-2-149.2**,** 20-2-161.3**.**

HISTORY: Original Rule entitled "Postsecondary Options" adopted. F. May 20, 1993; eff. Jun. 9, 1993.

Amended: F. Aug. 21, 1995; eff. Sept. 10, 1995.

Repealed: New Rule of same title adopted. F. Jul. 13, 1999; eff. Aug. 2, 1999.

Repealed: New Rule entitled "Dual and Joint Enrollment Programs" adopted. F. Apr. 20, 2005; eff. May 10, 2005.

Repealed: New Rule entitled "Dual Enrollment" adopted. F. Jan. 14, 2010; eff. Feb. 3, 2010.

Repealed: New Rule entitled "Dual Enrollment - Move On When Ready" adopted. F. July 14, 2016; eff. Aug. 3, 2016.

Amended: F. Nov. 3, 2016; eff. Nov. 23, 2016.

Amended: F. Aug. 24, 2017; eff. Sep. 13, 2017.

Amended: New title "Dual Enrollment." F. June 13, 2019; eff. July 3, 2019.

Note: Correction of non-substantive typographical error in paragraph (1)(e), "Eligible Postsecondary Institution - any eligible postsecondary institution as defined in. paragraph (7) of O.C.G.A § 20-3-519." corrected to "Eligible Postsecondary Institution - any eligible postsecondary institution as defined in paragraph (7) of O.C.G.A § 20-3-519.", as requested by the Agency. Effective July 29, 2019.

Amended: F. Mar. 25, 2021; eff. Apr. 14, 2021.

Department 220. STATE BOARD OF REGISTRATION FOR FORESTERS

Chapter 220-3. FEES AND RENEWALS

220-3-.05 Reinstatement

(1) Registrations not renewed in accordance with Rules 220-3-.03 and 220-3-.04 above shall not be subject to renewal, provided, however, that the holder thereof may apply for reinstatement.

(2) An application for reinstatement shall be accompanied by:

(a) A reinstatement fee; and,

(b) Evidence, satisfactory to the Board, of the completion of continuing education as specified below:

1. Six hours as defined in Rule 220-4-.04 for each year or fraction thereof since the last renewal of the applicant's license, up to a maximum of 36 hours.

2. No more than one-fourth of the credit hours claimed can be in Category 3. Fractional credit hours will be rounded down to the nearest half hour. The hours required by this paragraph may be counted towards fulfilling the continuing education requirements of the next biennial period if they have been earned in accordance with Rule 220-4-.05.

3. In order to be satisfactory, at least twelve of the hours required for reinstatement must have been completed during the two year period immediately preceding the date of application for reinstatement.

Cite as Ga. Comp. R. & Regs. R. 220-3-.05

AUTHORITY: O.C.G.A. §§ 12-6-47**,** 12-6-50**,** 12-6-52**,** 12-6-56**,** 43-1-25**.**

HISTORY: Original Rule entitled "Reinstatement" adopted. F. Feb. 12, 1990; eff. Mar. 4, 1990.

Amended: F. Sept. 13, 1991; eff. Oct. 3, 1991.

Amended: F. July 24, 2002; eff. Aug. 13, 2002.

Repealed: New Rule of same title adopted. F. Feb. 14, 2011; eff. Mar. 6, 2011.

Amended: F. Mar. 16, 2021; eff. Apr. 5, 2021.

Department 220. STATE BOARD OF REGISTRATION FOR FORESTERS

Chapter 220-4. CONTINUING EDUCATION

220-4-.05 Requirements

Minimum continuing education requirements for biennial license renewal are a total of 12 credit hours of continuing forestry education. A maximum of 3 credit hours may be obtained in Categories 2 and 3 Foresters who have held their licenses for less than two years but more than one year, as described in 220-4-.01(2), must obtain 6 continuing education hours.

Cite as Ga. Comp. R. & Regs. R. 220-4-.05

AUTHORITY: O.C.G.A. §§ 12-6-47**,** 12-6-50**,** 12-6-52**,** 12-6-56**,** 43-1-25**.**

HISTORY: Original Rule entitled "Requirements" adopted. F. Feb. 12, 1990; eff. Mar. 4, 1990.

Repealed: New Rule of same title adopted. F. Dec. 15, 2009; eff. Jan. 4, 2010.

Amended: F. Mar. 10, 2021; eff. Mar. 30, 2021.

Department 300. RULES OF GEORGIA DEPARTMENT OF LABOR

Chapter 300-2. EMPLOYMENT SECURITY LAW

Subject 300-2-4. UNEMPLOYMENT INSURANCE BENEFIT PAYMENTS

300-2-4-.09 Partial Unemployment. Amended

(1) (a) "Weekly report of Low Earnings", Form DOL-408, may be filed by an employer with respect to any complete pay-period week during which an otherwise full-time employee works less than full-time, due to lack of work only, and earns an amount not exceeding his unemployment insurance weekly amount, if known, plus Non-deductible Earnings or earns an amount not exceeding the maximum weekly benefit amount provided in the Employment Security Law, plus Non-deductible Earnings, if the individual's unemployment insurance weekly benefit is not known. Partial unemployment claims shall not be submitted or allowed for vacation days regardless of whether such vacation days were requested by the employee or established by the employer.

(b) For partial claim weeks beginning on or after December 11, 2016, the limitation on partial unemployment claims set forth in the last sentence of subparagraph (1)(a) shall not apply during an employer company shutdown or employer established vacation period when such shutdown or vacation period is due to circumstances outside the employer's control which directly affect the employer's business operations.

(c) An employer filing partial unemployment claims must have a positive reserve account as that term is used in O.C.G.A. 34-8-155; provided, however, the positive reserve account requirement shall not apply to partial claims filed for partial claim weeks beginning on or after December 11, 2016.

(2) Payments shall be made for partial unemployment only upon the approval by the Commissioner. Approval shall be based upon consideration of the conditions set forth in these regulations.

(a) The employer shall complete an affidavit in such form as approved by the Commissioner with respect to the partial unemployment for partial claims which are submitted on magnetic tape.

(b) Normally employers who have over twenty-five (25) employees affected by the partial unemployment may have such partial unemployment approved.

(c) Such unemployment must have been directly caused by lack of work and no other issues as to entitlement of unemployment benefits may be present; if other issues are involved the employee must report to the nearest career center in order to claim unemployment benefits.

(d) Form DOL-408, the questionnaire and any other correspondence shall be signed by the employer and transmitted to:

Georgia Department of Labor

Claims Administration

Suite 900

148 Andrew Young International Blvd., N.E.

Atlanta, Georgia, 30303-1751.

(e) The employer's physical address, telephone number and DOL account number must be shown on forms. Forms with only post office mailing addresses or without telephone number and account number shall not be accepted.

(f) The Commissioner may provide for the filing of partial claims online and require the filing of all partial claims online.

(3) Six (6) consecutive weeks or total unemployment immediately following a week of full-time or part-time employment may be reported by an employer on Form DOL-408 or magnetic tape or online.

(4) Following those six (6) consecutive weeks of total unemployment for any worker reported on Form DOL-408, an employer who requests permission and shows justifiable cause may, upon approval of the Commissioner report four (4) additional weeks of total unemployment on Form DOL-408, provided the employer provides a firm return to work date for such employees within the four (4) week time period.

(a) If the employer can provide no firm return to work date or upon expiration of the approved time period for acceptance of partial unemployment claims, or when an employer ceases to file Form DOL-408 for any totally unemployed worker, the employer shall immediately advise the employee to report in person to the nearest local career center of the department for the purpose of registering for work and reporting on his or her claim.

(b) Employers will not be authorized to file low earnings reports for regular breaks in seasonal employment. They may be filed when unusual circumstances require a break in employment at a time of normal, non-seasonal work.

(c) Any employer found by the Commissioner to be abusing the purpose and intent of the partial claims program will be restricted from using the partial claims program will be restricted from using the partial system for a period of three (3) years form the time of discovery of the violation. This restriction may be appealed to the Commissioner for possible reconsideration. Such appeal shall follow standard appeal provisions specified in the Employment Security Law for benefit appeals at O.C.G.A. Section 34-8-220.

(5) Because partial unemployment claims are employer-initiated claims based upon lack of work, such employers will receive no Form DOL-1199FF (notice of initial claim). The employer will receive its quarterly notification of charges against its account as provided by O.C.G.A. Section 34-8-157(d) and O.C.G.A. Section 34-8-159(4), provided, however, such employer will be furnished notice of the approval by the Department of the initial partial claims.

(6) An employer shall not be permitted to file partial claims within 180 days of registering their account with the Department. In the discretion of the Commissioner, this limitation on partial claim filing may be waived.

Cite as Ga. Comp. R. & Regs. R. 300-2-4-.09

AUTHORITY: O.C.G.A. §§ 34-2-6(a)(4)**,** 34-8-47**,** 34-8-70**,** 34-8-190**.**

HISTORY: Original Rule entitled "Partial Unemployment" adopted. F. Jun. 25, 1998; eff. Jul. 15, 1998.

Amended: Title changed to "Partial Unemployment. Amended." F. Sep. 29, 2014; eff. Oct. 19, 2014.

Amended: ER. 300-2-4-0.1-.09(1). F. Dec. 9, 2016; eff. Dec. 9, 2016, the date of adoption, to remain in effect for a period of 120 days or until the adoption of a permanent Rule covering the same subject matter superseding this ER, as specified by the Agency.

Amended: ER. 300-2-4-0.2-.09(1). F. Apr. 7, 2017; eff. Apr. 9, 2017, to remain in effect for a period of 120 days or until the adoption of a permanent Rule covering the same subject matter superseding this ER, as specified by the Agency.

Amended: ER. 300-2-4-0.3-.09(1). F. Aug. 7, 2017; eff. Aug. 7, 2017, to remain in effect for a period of 120 days or until the adoption of a permanent Rule covering the same subject matter superseding this ER, as specified by the Agency.

Amended: ER. 300-2-4-0.3-.09(1) repealed. Permanent Rule adopted. F. Sep. 1, 2017; eff. Sep. 1, 2017, as specified by the Agency.

Amended: ER. 300-2-4-0.5-.09(1). F. Mar. 16, 2020; eff. Mar. 16, 2020, to remain in effect for a period of 120 days or until the adoption of a permanent Rule covering the same subject matter superseding this ER, as specified by the Agency.

Repealed: ER. 300-2-4-0.5-.09(1). F. Mar. 19, 2020; eff. Mar. 19, 2020.

Amended: ER. 300-2-4-0.8-.09(1). F. Mar. 19, 2020; eff. Mar. 19, 2020, to remain in effect for a period of 120 days or until the adoption of a permanent Rule covering the same subject matter superseding this ER, as specified by the Agency.

Amended: ER. 300-2-4-0.13-.09(1). F. July 17, 2020; eff. July 19, 2020, to remain in effect for a period of 120 days or until the adoption of a permanent Rule covering the same subject matter superseding this ER, as specified by the Agency.

Amended: ER. 300-2-4-0.16-.09(1). F. Nov. 17, 2020; eff. Nov. 17, 2020, to remain in effect for a period of 120 days or until the adoption of a permanent Rule covering the same subject matter superseding this ER, as specified by the Agency.

Amended: F. Feb. 9, 2021; eff. Mar. 1, 2021.

Amended: F. Mar. 23, 2021; eff. Apr. 12, 2021.

Department 360. RULES OF GEORGIA COMPOSITE MEDICAL BOARD

Chapter 360-10. INSTITUTIONAL LICENSES

360-10-.01 Institutional Licenses

(1) Definitions:

(a) "Applicant" means a physician who is invited to treat patients at a hospital licensed by the Department of Community Health, serve as a clinical faculty member of a board-approved medical school or teaching hospital within this State, or work at a clinic within this State that services Medicaid, indigent, or underserved populations.

(b) "Institution" means a hospital licensed by the Department of Community Health, a board-approved medical school, a teaching hospital within this State, or a clinic within this State that services Medicaid, indigent, or underserved populations.

(c) "Exceptional circumstances" means information demonstrating that the applicant has valuable, unique, or otherwise relevant expertise that would benefit the institution.

(2) The Georgia Composite Medical Board shall issue institutional licenses under exceptional circumstances to graduates of international medical schools who an institution wishes to employ but who do not have an independent license to practice medicine in the State of Georgia. The license is jointly awarded to the applicant and the institution and the practice is limited as provided in Rule 360-10-.07.

(3) If the institution is a hospital licensed by the Department of Community Health but is not a teaching hospital, to qualify for Exceptional Circumstances consideration, the institution must submit a written attestation to the Board to demonstrate exceptional circumstances. The applicant must be a graduate of an international medical school, and the applicant must be unable to qualify for licensure under the provisions of O.C.G.A. Section 43-34-26.

(4) If the institution is a board-approved medical school or teaching hospital within this state, to qualify for Exceptional Circumstances consideration, the institution must submit a written attestation to the Board to demonstrate exceptional circumstances. The applicant must be a graduate of an international medical school, and the applicant must be unable to qualify for licensure under the provisions of O.C.G.A. 43-34-26.

(5) If the institution is a clinic that services Medicaid, indigent, or underserved populations, to qualify for Exceptional Circumstances consideration, the institution must submit a written attestation to the Board to demonstrate exceptional circumstances. The applicant must be a graduate of an international medical school, and the applicant must be unable to qualify for licensure under the provisions of O.C.G.A. 43-34-26.

Cite as Ga. Comp. R. & Regs. R. 360-10-.01

AUTHORITY: §§ O.C.G.A. 43-34-5(c)(1)**,** 43-34-26**,** 43-34-33**.**

HISTORY: Original Rule entitled "Institutional Licenses" adopted. F. Aug. 22, 1977; eff. Sept. 11, 1977.

Repealed: F. June 17, 1985; eff. July 7, 1985.

Amended: New Rule entitled "Institutional Licenses" adopted. F. May 20, 1988; eff. June 9, 1988.

Repealed: New Rule of same title adopted. F. Nov. 12, 2009; eff. Dec. 2, 2009.

Repealed: New Rule of same title adopted. F. Jun. 23, 2014; eff. Jul. 13, 2014.

Repealed: New Rule of same title adopted. F. Mar. 17, 2021; eff. Apr. 6, 2021.

360-10-.05 Termination of Institutional License

(1) An institutional license shall be considered void and shall terminate whenever the holder ceases to be employed by the institution.

(2) The Board has the right to refuse to renew or to suspend or revoke an institutional license based on any of the grounds enumerated in O.C.G.A. Section 43-34-8.

(3) Should any institutionally licensed physician wish to surrender the license, he/she shall notify the Georgia Composite Medical Board of this intention in writing by certified mail or by hand delivery and shall immediately return his/her license to the Board. Should a disciplinary proceeding by the Board be pending at the time of such surrender, such surrender shall have the same effect as a revocation of a license and be reportable as a disciplinary action.

Cite as Ga. Comp. R. & Regs. R. 360-10-.05

AUTHORITY: O.C.G.A. § 43-34-8**.**

HISTORY: Original Rule entitled "Termination of Institutional License" adopted. F. Nov. 12, 2009; eff. Dec. 2, 2009.

Repealed: New Rule of same title adopted. F. Jun. 23, 2014; eff. Jul. 13, 2014.

Repealed: New Rule of same title adopted. F. Mar. 17, 2021; eff. Apr. 6, 2021.

360-10-.07 Limitations Upon Institutional Licenses

(1) Definitions:

(a) "Applicant" means a physician who is invited to treat patients at a hospital licensed by the Department of Community Health, serve as a clinical faculty member of a board-approved medical school or teaching hospital within this State, or work at a clinic within this State that services Medicaid, indigent, or underserved populations.

(b) "Institution" means a hospital licensed by the Department of Community Health, a board-approved medical school, a teaching hospital within this State, or a clinic within this State that services Medicaid, indigent, or underserved populations.

(c) "Supervisor" means a physician who has an unrestricted license to practice medicine in this State and whose scope of practice is similar to that of the applicant physician.

(d) "Supervisory Oversight" means the direction of the supervisor with immediate availability.

(2) In the event in institutional license is granted to an applicant, it shall be restricted in scope and shall authorize the applicant to practice medicine under the supervision of a Georgia licensed physician. The physician licensee must remain an employee of the institution and be paid on a salary basis.

(3) A supervisor may only supervise one institutionally licensed physician at a time, but an institutionally licensed physician may have more than one approved supervisor.

(4) All charges for services rendered by the institutionally licensed physician must be by and through the institution named in the application on file with the Board.

(5) A person issued an institutional license shall not engage in the private practice of medicine.

(6) Any other provisions of the Medical Practice Act (O.C.G.A. 43-34) not inconsistent with the intent and purpose of the institutional license statute shall be fully applicable to all institutionally licensed physicians.

Cite as Ga. Comp. R. & Regs. R. 360-10-.07

AUTHORITY: O.C.G.A. §§ 43-34-5**,** 43-34-33**.**

HISTORY: Original Rule entitled "Limitations Upon Institutional Licenses" adopted. F. Nov. 12, 2009; eff. Dec. 2, 2009.

Repealed: New Rule of same title adopted. F. Jun. 23, 2014; eff. Jul. 13, 2014.

Repealed: New Rule of same title adopted. F. Mar. 17, 2021; eff. Apr. 6, 2021.

Department 375. RULES OF DEPARTMENT OF DRIVER SERVICES

Chapter 375-3. DRIVER LICENSE SERVICES

Subject 375-3-1. GENERAL PROVISIONS

375-3-1-.18 National Driver Register

In every instance the applicant will be validated through the National Driver Register and the Problem Driver Pointer System (PDPS). If they are found to be in suspension, revocation, or cancellation in their former licensing jurisdiction, then their Georgia driver's license will subsequently be suspended, revoked, or cancelled. Applicable consequences will be applied to the driving privilege as required by law.

Cite as Ga. Comp. R. & Regs. R. 375-3-1-.18

AUTHORITY: O.C.G.A. § 40-5-4**.**

HISTORY: Original Rule entitled "New Resident Licensing Requirements" adopted. F. Apr. 18, 2006; eff. May 8, 2006.

Amended: New title "National Driver Register." F. Mar. 15, 2021; eff. Apr. 4, 2021.

Department 391. RULES OF GEORGIA DEPARTMENT OF NATURAL RESOURCES

Chapter 391-1. ADMINISTRATION

Subject 391-1-1. ORGANIZATION AND PUBLIC PARTICIPATION

391-1-1-.01 Organization

(1) The Board of Natural Resources is a Constitutional Board, empowered by law to establish the general policies to be followed by the Department of Natural Resources.

(2) The Board appoints and removes (subject to the approval of the Governor) the Commissioner of Natural Resources and the Director of the Environmental Protection Division. The Board sets out the general policy under which the Commissioner supervises, directs, accounts for, organizes, plans, administers and executes all the respective statutory functions of the Department and the Divisions, and under which the Director of the Environmental Protection Division supervises, directs, accounts for, organizes, plans and executes the respective statutory functions of the Environmental Protection Division.

(3) As organized by the Commissioner, the Department consists of the Commissioner's Office and five operating Divisions: Wildlife Resources; Parks, Recreation and Historic Sites; Coastal Resources; Law Enforcement; and Environmental Protection (created by statute). The directors of the Divisions other than Environmental Protection are appointed by the Commissioner, subject to the approval of the Board.

Cite as Ga. Comp. R. & Regs. R. 391-1-1-.01

AUTHORITY: O.C.G.A. §§ 12-2-1**,** 12-2-2**,** 12-2-24**,** 50-13-3**.**

HISTORY: Original Rule entitled "Definitions" adopted. F. Nov. 21, 1972; eff. Dec. 12, 1972, as specified by R. 391-1-1-.07.

Repealed: F. Sept. 6, 1973; eff. Sept. 26, 1973.

Amended: New Rule entitled "Organization" adopted. F. July 29, 1982; eff. Aug. 18, 1982.

Amended: F. Jan. 30, 1990; eff. Feb. 19, 1990.

Amended: F. Aug. 27, 1993; eff. Sept. 16, 1993.

Amended: F. June 29, 1994; eff. July 19, 1994.

Repealed: New Rule of same title adopted. F. Aug. 27, 1998; eff. Sept. 16, 1998.

Amended: F. Aug. 30, 2007; eff. Sept. 19, 2007.

Amended: F. Jun. 26, 2013; eff. Jul. 16, 2013.

Amended: F. Mar. 22, 2021; eff. Apr. 11, 2021.

391-1-1-.04 Method of Obtaining Information from, Making Submissions to or Requests of the Department

(1) General Information concerning the Department's operations may be obtained from 2 Martin Luther King, Jr. Drive, S.E., Suite 1252 East, Atlanta, Georgia 30334-9000.

(2) More specific requests for information or submissions may be directed as follows:

(a) For licenses - fishing and hunting, 2065 U.S. Highway 278, S.E., Social Circle, Georgia 30025.

(b) For boat registration - 2065 U.S. Highway 278, S.E., Social Circle, Georgia 30025.

(c) For coastal information - One Conservation Way, Suite 300, Brunswick, Georgia 31520-8687.

(d) For environmental information - 2 Martin Luther King, Jr. Drive, S.E., Suite 1152 East, Atlanta, Georgia 30334-9000.

(e) For state parks and historic sites information - 2600 Highway 155, S.W., Stockbridge, Georgia 30281.

(f) For archaeological information - 2610 Highway 155, S.W., Stockbridge, Georgia 30281.

(3) To request that the name and address of a person or organization be placed on a Division's mailing list maintained for advance notice of its rule-making proceedings pursuant to O.C.G.A Section 50-13-4, a written request shall be mailed to the Director of that Division. The written request shall contain a complete and accurate mailing address of the person or organization to which advance notice is to be mailed. The written request may specify that the person or organization is to receive advanced notice of only the proposed rules or proposed amendments to rules of a specific program or branch of a Division, such as proposed rules or amendments to rules proposed by the Land Protection Branch of the Environmental Protection Division or the Hunting and Fishing Regulations proposed annually by the Wildlife Resources Division.

Cite as Ga. Comp. R. & Regs. R. 391-1-1-.04

AUTHORITY: O.C.G.A. §§ 50-13-3**,** 50-13-4**,** 50-13-9**.**

HISTORY: Original Rule entitled "Collection and Transportation" adopted. F. Nov. 21, 1972; eff. Dec. 12, 1972, as specified by R. 391-1-1-.07.

Repealed: F. Sept. 6, 1973; eff. Sept. 26, 1973.

Amended: New Rule entitled "Procedure to Petition for the Adoption of Rules" adopted. F. Jan. 30, 1990; eff. Feb. 19, 1990.

Repealed: New Rule entitled "Method of Obtaining Information from, Making Submissions to or Requests of the Department" adopted. F. Aug. 27, 1998; eff. Sept. 16, 1998.

Amended: F. Aug. 30, 2007; eff. Sept. 19, 2007.

Amended: F. Mar. 22, 2021; eff. Apr. 11, 2021.

Department 391. RULES OF GEORGIA DEPARTMENT OF NATURAL RESOURCES

Chapter 391-2. ENVIRONMENTAL PROTECTION

Subject 391-2-5. AIR QUALITY CONTROL

391-2-5-.08 Construction/Acquisition Projects and Terms

Allowable construction/acquisition activities are defined under Section 306A of the Coastal Zone Management (CZM) Act, and as such are defined by statute. Theme related construction/acquisition projects are limited to a federal request of $80,000, may be up to two (2) year projects, and must abide by the terms and conditions in the most recent version of NOAA's 306A guidance document. Applicants may be asked to revise scope of work of construction projects to meet eligibility guidelines and/or NOAA's 306A guidance document. All construction or land acquisition projects must undergo a pre-application site visit by DNR staff prior to submittal of a full application, if invited to submit such. NOAA is currently revising the 306A guidance document and construction/acquisition project terms may be subject to change prior to project start depending on the effective date of the new guidance.

Applicants must meet the objectives and allowable use guidelines under Section 306A of the Coastal Zone Management Act to be considered. At this time, refer to the 1999 Coastal Zone Management Act Section 306A guidance document for full text of objectives and uses. In summary, sub-grants for construction/acquisition projects made under Section 306A may be used for the following activities only:

* The acquisition of fee simple and other interests in land;

* Low-cost construction projects, including but not limited to, paths, walkways, fences, parks, and the rehabilitation of historic buildings and structures;

* The rehabilitation or acquisition of piers to provide increased public use, including compatible commercial activity;

* The establishment of shoreline stabilization measures including the installation or rehabilitation of bulkheads for the purpose of public safety or increasing public access and use;

* The removal or replacement of pilings where such action will provide increased recreational use of urban waterfront areas;

* Engineering designs, specifications, and other appropriate reports related to these activities; and

* Educational, interpretive, and management costs and other related costs NOAA determines to be consistent with the purposes of this section.

Historic Preservation Division of the Georgia Department of Community Affairs (Georgia HPD or HPD): All construction projects must obtain a clearance letter from the Georgia HPD stating no significant impact, or specifying project conditions, as required under Section 106 of the federal Historic Preservation Act of 1966. Applications are considered incomplete and the project cannot begin until a clearance letter from HPD has been returned to the DNR-CRD. It is the applicant's responsibility to provide the HPD clearance letter as a supporting document of the RFP.

Endangered Species Act: All construction projects must obtain a letter from the US Fish and Wildlife Service (FWS) stating there will be no significant impacts, or specifying project conditions, from the proposed project according to

Section 7 of the Endangered Species Act. Applications are considered incomplete and the project cannot begin until a clearance letter from the FWS has been returned to the DNR-CRD. It is the applicant's responsibility to provide the FWS clearance letter as a supporting document of the RFP.

NOAA Involvement: All construction project proposals are required to submit a completed 306A Project Questionnaire with their application including documentation in the form of reports, permits, coordination letters from state and federal agencies, maps, and photographs when necessary. Work cannot begin on any construction project until the 306A Project Questionnaire has been reviewed, approved, and signed by NOAA's Coastal Programs Division Chief and the DNR-CRD.

Additionally, federally funded projects are required by the National Environmental Policy Act (NEPA) of 1969 to assess the environmental impact(s) (Public Law 91-190, as amended; 82 Stat. 852, as amended; 42 U.S.C. 4321-4347). NOAA is responsible for determining and advising whether a proposed sub-grant project is eligible for a categorical exclusion in accordance with NOAA's NEPA regulations.

Cite as Ga. Comp. R. & Regs. R. 391-2-5-.08

AUTHORITY: O.C.G.A. §§ 12-5-323**,** 28-5-122**.**

HISTORY: Original grant description entitled "Construction and Acquisition Project Evaluation Criteria" submitted Sept. 14, 1998.

Terminated: Oct. 9, 2003.

Submitted: Grant description entitled "Construction Projects" received Dec. 11, 2006.

Submitted: Oct. 31, 2007.

Submitted: Oct. 30, 2008.

Submitted: Grant description entitled "Construction Projects and Terms" received Sept. 23, 2009.

Submitted: Aug. 27, 2010.

Submitted: Aug. 25, 2011.

Amended: New title "Construction/Acquisition Projects and Terms." F. Sep. 4, 2012; eff. Sep. 24, 2012.

Amended: F. Aug. 27, 2013; eff. Sep. 16, 2013.

Amended: F. Sep. 3, 2014; eff. Sep. 23, 2014.

Submitted: Aug. 26, 2015.

Submitted: Sep. 6, 2016.

Note: Correction in Rule History, "**Amended:** F. Sep. 4, 2012; eff. Sep. 24, 2012." corrected to "**Amended:** New title 'Construction/Acquisition Projects and Terms.' F. Sep. 4, 2012; eff. Sep. 24, 2012." Effective Mar. 22, 2021.

Submitted: Mar. 22, 2021.

Department 391. RULES OF GEORGIA DEPARTMENT OF NATURAL RESOURCES

Chapter 391-3. ENVIRONMENTAL PROTECTION

Subject 391-3-17. RADIOACTIVE MATERIALS

391-3-17-.01 General Provisions

(1) **Scope.** Except as otherwise specifically provided, this Chapter, 391-3-17, applies to all persons who manufacture, produce, receive, possess, use, transfer, own, or acquire any source of radiation; provided, however, that nothing in this Chapter shall apply to any person to the extent such person is subject to regulation by the U.S. Nuclear Regulatory Commission.[1] Nothing in Rule 391-3-17-.03 of this Chapter shall be interpreted as limiting the intentional exposure of patients to radiation for the purpose of diagnosis or therapy.

(2) **Definitions.** As used in this Chapter, these terms have the definitions set forth below. Additional definitions used only in a certain Rule will be found in that Rule.

(a) "A_1" means the maximum activity of special form radioactive material permitted in a Type A package. "A_2" means the maximum activity of radioactive material, other than special form, LSA and SCO material, permitted in a Type A package. These values are either listed in the "Table of A_1 and A_2 Values for Radionuclides" of 49 CFR 173.435 or may be derived in accordance with the procedure prescribed in 49 CFR 173.433-173.435.

(b) "Absorbed dose" means the energy imparted by ionizing radiation per unit mass of irradiated material. The units of absorbed dose are the rad and the Gray (Gy).

(c) "Accelerator-produced radioactive material" means any material made radioactive by a particle accelerator.

(d) "Act" means Chapter 13 of the Official Code of Georgia, Annotated, entitled "Radiation Control" as amended.

(e) "Activity" means the rate of disintegration or transformation or decay of radioactive material. The units of activity are the Curie (Ci) and the Becquerel (Bq).

(f) "Adult" means an individual 18 or more years of age.

(g) "Agreement State" means any State with which the U.S. Nuclear Regulatory Commission or the U.S. Atomic Energy Commission has entered into an effective agreement under subsection 274b. of the Atomic Energy Act of 1954, as amended (73 Stat. 689).

(h) "Airborne radioactive material" means any radioactive material dispersed in the air in the form of dusts, fumes, particulates, mists, vapors, or gases.

(i) "Airborne radioactivity area" means a room, enclosure or operating area in which airborne radioactive materials, composed wholly or partly of licensed materials, exist in concentrations;

1. In excess of the derived air concentrations (DACs) specified in Appendix B, to 10 CFR 20.1001-20.2401, or

2. To such a degree that an individual present in the area without respiratory protective equipment could exceed, during the hours an individual is present in a week, an intake of 0.6 percent of the annual limit on intake (ALI) or 12 DAC-hours.

(j) "Annually" means once every 12 calendar months or no later than the last day of the same calendar month of the following year.

(k) "As low as is reasonably achievable" (ALARA) means making every reasonable effort to maintain exposures to radiation as far below the dose limits in this Chapter as is practical, consistent with the purpose for which the licensed activity is undertaken, taking into account the state of technology, the economics of improvements in relation to the state of technology, the economics of improvements in relation to benefits to the public health and safety, and other societal and socioeconomic considerations, and in relation to utilization of nuclear energy and licensed or registered sources of radiation in the public interest.

(l) "Background radiation" means radiation from cosmic sources; naturally occurring radioactive materials, including radon, except as a decay product of source or special nuclear material, and including global fallout as it exists in the environment from the testing of nuclear explosive devices or from past nuclear accidents such as Chernobyl that contribute to background radiation and are not under the control of the licensee. "Background radiation" does not include sources of radiation from radioactive materials regulated by the Division.

(m) "Becquerel" (Bq) means the SI unit of activity. One Becquerel is equal to one disintegration or transformation per second.

(n) "Bioassay" means the determination of kinds, quantities or concentrations, and, in some cases, the locations of radioactive material in the human body, whether by direct measurement, in vivo counting, or by analysis and evaluation of materials excreted or removed from the human body. For purposes of this Chapter, "radiobioassay" is an equivalent term.

(o) "Byproduct material" means:

1. Any radioactive material, except special nuclear material, yielded in or made radioactive by exposure to the radiation incident to the process of producing or utilizing special nuclear material;

2. The tailings or wastes produced by the extraction or concentration of uranium or thorium from ore processed primarily for its source material content, including discrete surface wastes resulting from uranium solution extraction processes. Underground ore bodies depleted by these solution extraction operations do not constitute "byproduct material" within this definition.

3. (i) Any discrete source of radium-226 that is produced, extracted, or converted after extraction, before, on, or after August 8, 2005, for use for a commercial, medical, or research activity; or

(ii) Any material that:

(I) Has been made radioactive by use of a particle accelerator; and

(II) Is produced, extracted, or converted after extraction, before, on, or after August 8, 2005, for use for a commercial, medical, or research activity; and

4. Any discrete source of naturally occurring radioactive material, other than source material, that:

(i) The Nuclear Regulatory Commission, in consultation with the Administrator of the Environmental Protection Agency, the Secretary of Energy, the Secretary of Homeland Security, and the head of any other appropriate Federal agency, determines would pose a threat similar to the threat posed by a discrete source of radium-226 to the public health and safety or the common defense and security; and

(ii) Before, on, or after August 8, 2005, is extracted or converted after extraction for use in a commercial, medical, or research activity.

(p) "Calibration" means the determination of:

1. The response or reading of an instrument relative to a series of known radiation values over the range of the instrument, or

2. The strength of a source of radiation relative to a standard.

(q) "CFR" means the Code of Federal Regulations.

(r) "Collective dose" means the sum of the individual doses received in a given period of time by a specified population from exposure to a specified source of radiation.

(s) "Committed dose" means the radiation dose that will accumulate over time as a result of retention in the body of radioactive material. Committed dose is a generic term for internal dose and must be calculated by summing the projected dose over the 50 years after intake for all irradiated organs or tissues multiplying the doses to individual organs and tissues by applicable tissue weighting factors.

(t) "Committed dose equivalent" ($H_{T,50}$) means the dose equivalent to organs or tissues of reference (T) that will be received from an intake of radioactive material by an individual during the 50-year period following the intake.

(u) "Committed effective dose equivalent" ($H_{E,50}$) is the sum of the products of the weighting factors applicable to each of the body organs or tissues that are irradiated and the committed dose equivalent to each of these organs or tissues ($H_{E,50}$ = [SIGMA] $w_T H_{T,50}$).

(v) "Consortium" means an association of medical use licensees and a PET radionuclide production facility in the same geographical area that jointly own or share in the operation and maintenance cost of the PET radionuclide production facility that produces PET radionuclides for use in producing radioactive drugs within the consortium for noncommercial distributions among its associated members for medical use. The PET radionuclide production facility within the consortium must be located at an educational institution or a Federal facility or a medical facility.

(w) "Curie" means a unit of quantity of radioactivity. One Curie (Ci) is that quantity of radioactive material that decays at the rate of 3.7×10^{10} transformations per second (tps).

(x) "Daily" means once every calendar day worked.

(y) "Deep dose equivalent" (H_d), which applies to external whole body exposure, means the dose equivalent at a tissue depth of one centimeter (1,000 mg/cm^2).

(z) "Department" means the Department of Natural Resources of the State of Georgia.

(aa) "Depleted uranium" means the source material uranium in which the isotope uranium-235 is less than 0.711 weight percent of the total uranium present. Depleted uranium does not include special nuclear material.

(bb) "Derived air concentration" (DAC) means the concentration of a given radionuclide in air which, if breathed by the reference man for a working year of 2,000 hours under conditions of light work (inhalation rate 1.2 cubic meters of air per hour), results in an intake of one ALI. (Annual Limit on Intake defined in Rule .03(2)(d)) DAC values are given in Table 1, Column 3 of Appendix B to 10 CFR 20.1001- 20.2401.

(cc) "Discrete source" means a radionuclide that has been processed so that its concentration within a material has been purposely increased for use for commercial, medical, or research activities.

(dd) "Dose" is a generic term that means absorbed dose, dose equivalent, effective dose equivalent, committed dose equivalent, committed effective dose equivalent, or total effective dose equivalent.

(ee) "Dose equivalent" (H_T) means the product of the absorbed dose in tissue, quality factor, and all other necessary modifying factors at the location of interest. The units of dose equivalent are the rem and Sievert (Sv).

(ff) "Dose limits" means the permissible upper bounds of radiation doses established in accordance with this Chapter. For purposes of this Chapter, "limits" is an equivalent term.

(gg) "Effective dose equivalent" (H_E) means the sum of the products of the dose equivalent to each organ or tissue (H_T) and the weighting factor (w_T) applicable to each of the body organs or tissues that are irradiated (H_E = [SIGMA] $w_T H_T$).

(hh) "Embryo/fetus" means the developing human organism from conception until the time of birth.

(ii) "Entrance or access point" means any opening through which an individual or extremity of an individual could gain access to radiation areas or to licensed radioactive materials. This includes entry or exit portals of sufficient size to permit human entry, irrespective of their intended use.

(jj) "Explosive material" means any chemical compound, mixture, or device that produces a substantial instantaneous release of gas and heat spontaneously or by contact with sparks or flame.

(kk) "Exposure" means being exposed to ionizing radiation or to radioactive material.

(ll) "Exposure rate" means the exposure per unit of time, such as Roentgen per minute or milliroentgen per hour.

(mm) "External dose" means that portion of the dose equivalent received from any source of radiation outside the body.

(nn) "Extremity" means hand, elbow, arm below the elbow, foot, knee, and leg below the knee.

(oo) "Former U.S. Atomic Energy Commission (AEC) or U.S. Nuclear Regulatory Commission (NRC) licensed facilities" means nuclear reactors, nuclear fuel reprocessing plants, uranium enrichment plants, or critical mass experimental facilities where AEC or NRC licenses have been terminated.

(pp) "Generally applicable environmental radiation standards" means standards issued by the U.S. Environmental Protection Agency (EPA) under the authority of the Atomic Energy Act of 1954, as amended, that impose limits on radiation exposures, levels, concentrations or quantities of radioactive material, in the general environment outside the boundaries of locations under the control of persons possessing or using radioactive material.

(qq) "Gray" (Gy) means the SI unit of absorbed dose. One Gray is equal to an absorbed dose of one Joule/kilogram (100 rad).

(rr) "Hazardous waste" means those wastes designated as hazardous by U.S. Environmental Protection Agency regulations in 40 CFR Part 261.

(ss) "Healing arts" means medicine, dentistry, chiropractic, podiatry, osteopathy or veterinary medicine.

(tt) "High radiation area" means an area, accessible to individuals, in which radiation levels from radiation sources external to the body could result in an individual receiving a dose equivalent in excess of 0.1 rem (1 mSv) in one hour at 30 centimeters from any source of radiation or from any surface that the radiation penetrates. For purposes of this Chapter, rooms or areas in which diagnostic x-ray systems are used for healing arts purposes are not considered high radiation areas.

(uu) "Human use" means the internal or external administration of radiation or radioactive material to human beings.

(vv) "Individual" means any human being.

(ww) "Individual monitoring" means the assessment of:

1. Dose equivalent by the use of:

(i) Individual monitoring devices, or

(ii) Survey data; or

2. Committed effective dose equivalent:

(i) By bioassay, or

(ii) By determination of the time-weighted air concentrations to which an individual has been exposed, that is, DAC-hours [See the definition of DAC-hours in Rule 391-3-17-.03(2)(q)].

(xx) "Individual monitoring devices" means devices designed to be worn by a single individual for the assessment of dose equivalent. For purposes of this Chapter, individual monitoring devices and personnel monitoring equipment are equivalent terms. Examples of individual monitoring devices are film badges, thermoluminescent dosimeters (TLDs), optically stimulated luminescent devices, pocket ionization chambers, and personal air sampling devices.

(yy) "Inspection" means an official examination or observation including, but not limited to, tests, surveys, and monitoring to determine compliance.

(zz) "Interlock" means a device arranged or connected such that the occurrence of an event or condition is required before a second event or condition can occur or continue to occur.

(aaa) "Internal dose" means that portion of the dose equivalent received from radioactive material taken into the body.

(bbb) "Lens dose equivalent" (LDE) means the external exposure of the lens of the eye and is taken as the dose equivalent at a tissue depth of 0.3 centimeter (300 mg/cm^2).

(ccc) "License" means a license issued by the Director in accordance with the Regulations promulgated by the Board.

(ddd) "Licensed material" means radioactive material received, possessed, used, transferred or disposed of under a general or specific license issued by the Director.

(eee) "Licensee" means any person who is licensed by the Director in accordance with this Chapter and the Act.

(fff) [Reserved]

(ggg) "Limits" [See Dose limits].

(hhh) "Lost or missing licensed material" means licensed material whose location is unknown. This definition includes licensed material that has been shipped but has not reached its planned destination and whose location cannot be readily traced in the transportation system.

(iii) "Major processor" means a user processing, handling, or manufacturing radioactive material exceeding Type A quantities as unsealed sources or material, or exceeding four times Type B quantities as sealed sources, but does not include nuclear medicine programs, universities, industrial radiographers, or small industrial programs. Type A and B quantities are defined in Section 71.4 of 10 CFR Part 71.

(jjj) "Management" means the chief executive officer or other individual having the authority to manage, direct, or administer the licensee's activities, or those persons' delegate or delegates.

(kkk) "Member of the public" means any individual except when that individual is receiving an occupational dose.

(lll) "Minor" means an individual less than 18 years of age.

(mmm) "Monthly" means once every calendar month, not to exceed an interval of 35 days.

(nnn) "Monitoring" means the measurement of radiation, radioactive material concentrations, surface area activities or quantities of radioactive material and the use of the results of these measurements to evaluate potential exposures and doses. For purposes of this Chapter, "radiation monitoring" and "radiation protection monitoring" are equivalent terms.

(ooo) "NARM" means any naturally-occurring or accelerator-produced radioactive material. It does not include byproduct, source, or special nuclear material.

(ppp) "Natural radioactivity" means radioactivity of naturally-occurring nuclides.

(qqq) "NORM" (Naturally-Occurring Radioactive Material) means any nuclide which is radioactive in its natural physical state (i.e., not man-made), but does not include byproduct, source, or special nuclear material.

(rrr) "Nuclear Regulatory Commission" (NRC) means the U.S. Nuclear Regulatory Commission or its duly authorized representatives.

(sss) "Occupational dose" means the dose received by an individual in the course of employment while engaged in activities licensed by the Director in which the individual's assigned duties involve exposure to licensed and unlicensed sources of radiation whether in the possession of the licensee, or other person. Occupational dose does not include doses received from background radiation, as a patient from medical practices, from exposure from individuals administered radioactive material and released in accordance with Rule 391-3-17-.05(37), from voluntary participation in medical research programs, or as a member of the public.

(ttt) "Package" means the assembly of components necessary to ensure compliance with packing requirements of DOT regulations together with its radioactive contents as presented for transport.

1. "Fissile material package" means a fissile material packaging together with its fissile material contents.

2. "Type B package" means a Type B packaging together with its radioactive contents. On approval, a Type B package design is designated by NRC as B(U) unless the package has a maximum normal operating pressure of more than 700 kPa (100 lb/in^2) gauge or pressure relief device that will allow the release of radioactive material to the environment under the tests specified in 10 CFR 71 (hypothetical accident conditions), in which case it will receive a designation B(M). B(U) refers to the need for unilateral approval of international shipments; B(M) refers to the need for multilateral approval of international shipments. There is no distinction made in how packages with these designations may be used in domestic transportation. To determine their distinction for international transportation, see DOT regulations in 49 CFR 173. A Type B package approved before September 6, 1983, was designated only as Type B. Limitations on its use are specified in 10 CFR 71.13.

(uuu) "Particle accelerator" means any machine capable of accelerating electrons, protons, deuterons, or other charged particles in a vacuum and of discharging the resultant particulate or other radiation into a medium at energies usually in excess of one MeV. For purposes of this definition, "accelerator" is an equivalent term.

(vvv) "Person" means any individual, corporation, partnership, firm, association, trust, estate, public or private institution, group, agency, political subdivi-sion of this State, any other state or political subdivision or agency thereof, and any legal successor, representative, agent, or department of the foregoing, but shall not include federal government agencies.

(www) "Personnel monitoring equipment" [See Individual monitoring devices].

(xxx) "Pharmacist" means any individual who is licensed to practice Pharmacy in this State by the Georgia State Board of Pharmacy.

(yyy) "Physician" means any person who is licensed to engage in the practice of medicine under the Authority of O.C.G.A. 43-34-20 or the limited practice of medicine under O.C.G.A. 43-35-1.

(zzz) "Positron Emission Tomography (PET) radionuclide production facility" is defined as a facility operating a cyclotron or accelerator for the purpose of producing PET radionuclides.

(aaaa) "Principal activities," as used in this Chapter, means activities authorized by the license which are essential to achieving the purpose(s) for which the license was issued or amended. Storage during which no license material is accessed for use or disposal and activities incidental to decontamination or decommissioning are not principal activities.

(bbbb) "Public dose" means the dose received by a member of the public from radiation and/or radioactive material released by a licensee or from any other source of radiation under the control of a licensee. It does not include occupational dose, doses received from background radiation, doses received as a patient from medical practices, from exposure from individuals administered radioactive material and released in accordance with Rule 391-3-17-.05(37), or doses from voluntary participation in medical research programs.

(cccc) "Pyrophoric liquid" means any liquid that ignites spontaneously in dry or moist air at or below 130 °F (54.4 °C). A pyrophoric solid is any solid material, other than one classed as an explosive, which under normal conditions is liable to cause fires through friction, retained heat from manufacturing or processing, or which can be ignited readily and, when ignited, burns so vigorously and persistently as to create a serious transportation, handling, or disposal hazard. Included are spontaneously combustible and water-reactive materials.

(dddd) "Qualified expert" means an individual having the knowledge and training to measure ionizing radiation, to evaluate safety techniques, and to advise regarding radiation protection needs, for example, individuals certified in the appropriate field by the American Board of Radiology or the American Board of Health Physics, or those having equivalent qualifications. With reference to the calibration of radiation therapy equipment, an individual having, in addition to the above qualifications, training and experience in the clinical applications of radiation physics to radiation therapy, for example, individuals certified in Therapeutic Radiological Physics or X-Ray and Radium Physics by the American Board of Radiology, or those having equivalent qualifications.

(eeee) "Quality factor" (Q) means the modifying factor, listed in Tables 1 and 2 of this Rule that is used to derive dose equivalent from absorbed dose.

(ffff) "Quarterly" means once every three calendar months or no later than the last day of the third month after the initial month.

(gggg) "Rad" means the special unit of absorbed dose. One rad is equal to an absorbed dose of 100 ergs/gram or 0.01 Joule/kilogram (0.01 Gray).

(hhhh) "Radiation" means alpha particles, beta particles, gamma rays, x- rays, neutrons, high-speed electrons, high-speed protons, and other particles capable of producing ions. For purposes of this Chapter, ionizing radiation is an equivalent term. Radiation, as used in this Chapter, does not include non-ionizing radiation, such as radiowaves, microwaves, visible, infrared, or ultraviolet light.

(iiii) "Radiation area" means any area, accessible to individuals, in which radiation levels could result in an individual receiving a dose equivalent in excess of 5 mrem (0.05 mSv) in one hour at 30 centimeters from the source of radiation or from any surface that the radiation penetrates.

(jjjj) "Radiation machine" means any device capable of producing radiation except those devices with radioactive material as the only source of radiation.

(kkkk) "Radiation Safety Officer" (RSO) means an individual who has the knowledge and responsibility to apply appropriate radiation protection regulations.

(llll) "Radioactive material" means any solid, liquid, or gas that emits radiation spontaneously.

(mmmm) "Radioactivity" means the transformation of unstable atomic nuclei by the emission of radiation.

(nnnn) "Regulations of the U.S. Department of Transportation" means the regulations in 49 CFR Parts 100-189.

(oooo) "Rem" means the special unit of any of the quantities expressed as dose equivalent. The dose equivalent in rem is equal to the absorbed dose in rad multiplied by the quality factor (1 rem = 0.01 Sievert).

(pppp) "Research and development" means:

1. Theoretical analysis, exploration, or experimentation; or

2. The extension of investigative findings and theories of a scientific or technical nature into practical application for experimental and demonstration purposes, including the experimental production and testing of models, devices, equipment, materials, and processes. Research and development does not include the internal or external administration of radiation or radioactive material to human beings.

(qqqq) "Restricted area" means any area to which access is limited by the licensee for purposes of protecting individuals against undue risks from exposure to sources of radiation and radioactive material. A restricted area does not include areas used as residential quarters, but separate rooms in a residential building may be set apart as a restricted area.

(rrrr) "Roentgen" means the special unit of exposure. One Roentgen (R) equals 2.58×10^{-4} Coulombs/kilogram of air.

(ssss) "Sealed source" means radioactive material that is permanently bonded or fixed in a capsule or matrix designed to prevent release and dispersal of the radioactive material under the most severe conditions which are likely to be encountered in normal use and handling.

(tttt) "Sealed Source and Device Registry" means the national registry that contains all the registration certificates, generated by both the NRC and the Agreement States, that summarize the radiation safety information for the sealed sources and devices and describe the licensing and use conditions approved for the product.

(uuuu) "Shallow dose equivalent" (H_s), which applies to the external exposure of the skin of the whole body or the skin of an extremity, means the dose equivalent at a tissue depth of 0.007 centimeter (7 mg/cm^2).

(vvvv) "SI" means an abbreviation of the International System of Units.

(wwww) "Sievert" means the SI unit of any of the quantities expressed as dose equivalent. The dose equivalent in Sievert is equal to the absorbed dose in Gray multiplied by the quality factor (1 Sv = 100 rem).

(xxxx) "Site boundary" means that line beyond which the land or property is not owned, leased, or otherwise controlled by the licensee.

(yyyy) "Source material" means:

1. Uranium or thorium, or any combination thereof, in any physical or chemical form; or

2. Ores that contain by weight one-twentieth of one percent (0.05 percent) or more of uranium, thorium, or any combination thereof. Source material does not include special nuclear material.

(zzzz) "Source material milling" means any activity that results in the production of byproduct material as defined by .01(2)(o)2.

(aaaaa) "Source of radiation" means any radioactive material or any device or equipment emitting, or capable of producing, radiation.

(bbbbb) "Special form radioactive material" means radioactive material that satisfies the following conditions:

1. It is either a single solid piece or is contained in a sealed capsule that can be opened only by destroying the capsule;

2. The piece or capsule has at least one dimension not less than five millimeters (0.197 inch); and

3. It satisfies the test requirements specified by the U.S. Nuclear Regulatory Commission. A special form encapsulation designed in accordance with the U.S. Nuclear Regulatory Commission requirements in effect on June 30, 1983, and constructed prior to July 1, 1985, may continue to be used. A special form encapsulation either designed or constructed after June 30, 1985, must meet requirements of this definition applicable at the time of its design or construction.

(ccccc) "Special nuclear material" means:

1. Plutonium, uranium-233, uranium enriched in the isotope 233 or in the isotope 235, and any other material that the U.S. Nuclear Regulatory Commission, pursuant to the provisions of section 51 of the Atomic Energy Act of 1954, as amended, determines to be special nuclear material but does not include source material; or

2. Any material artificially enriched by any of the foregoing but does not include source material.

(ddddd) "Special nuclear material in quantities not sufficient to form a critical mass" means uranium enriched in the isotope U-235 in quantities not exceeding 350 grams of contained U-235; uranium-233 in quantities not exceeding 200 grams; plutonium in quantities not exceeding 200 grams; or any combina-tion of them in accordance with the following formula: For each kind of special nuclear material, determine the ratio between the quantity of that special nuclear material and the quantity specified above for the same kind of special nuclear material. The sum of such ratios for all of the kinds of special nuclear material in combination shall not exceed 1.

For example, the following quantities in combination would not exceed the limitation and are within the formula:

$$\frac{175 \text{ (grams contained U-235)}}{350} + \frac{50 \text{ (grams U-233)}}{200} + \frac{50 \text{ (grams Pu)}}{200} \leq 1$$

(eeeee) "Survey" means an evaluation of the radiological conditions and potential hazards incident to the production, use, transfer, release, disposal, or presence of sources of radiation. When appropriate, such evaluation includes, but is not limited to, tests, physical examinations, and measurements of levels of radiation or concentrations of radioactive material present.

(fffff) "Test" means the process of verifying compliance with an applicable regulation.

(ggggg) "This Chapter" means all of the Rules in Chapter 391-3-17.

(hhhhh) "Total effective dose equivalent" (TEDE) means the sum of the effective dose equivalent (for external exposures) and the committed effective dose equivalent (for internal exposures).

(iiiii) "U.S. Department of Energy" means the Department of Energy established by Public Law 95-91, August 4, 1977, 91 Stat. 565, 42 U.S.C. 7101 et seq., to the extent that the Department exercises functions formerly vested in the U.S. Atomic Energy Commission, its Chairman, members, officers, and components and transferred to the U.S. Energy Research and Development Administration and to the Administrator thereof pursuant to sections 104(b), (c) and (d) of the Energy Reorganization Act of 1974 (Public Law 93-438, October 11, 1974, 88 Stat. 1233 at 1237, 42 U.S.C. 5814, effective January 19, 1975) and retransferred to the Secretary of Energy pursuant to section 301(a) of the Department of Energy Organization Act (Public Law 95-91, August 4, 1977, 91 Stat. 565 at 577-578, 42 U.S.C. 7151, effective October 1, 1977).

(jjjjj) "Unrefined and unprocessed ore" means ore in its natural form prior to any processing, such as grinding, roasting, beneficiating, or refining. Processing does not include sieving or encapsulation of ore or preparation of samples for laboratory analysis.

(kkkkk) "Unrestricted area" means an area to which access is neither limited nor controlled by the licensee.

(llllll) "Very High Radiation Area" means an area, accessible to individuals, in which radiation levels could result in an individual receiving an absorbed dose in excess of 500 rads (5 Grays) in one hour at one meter from a radiation source or from any surface that the radiation penetrates.

(mmmmm) "Waste" means those low-level radioactive wastes containing source, special nuclear, or byproduct material that are acceptable for disposal in a land disposal facility. For the purposes of this definition, low-level waste has the same meaning as radioactive waste not classified as high-level radioactive waste, transuranic waste, spent nuclear fuel, or byproduct material as defined in .01(2)(o)2., 3., and 4.

(nnnnn) "Waste handling licensees" mean persons licensed to receive and store radioactive wastes prior to disposal and/or persons licensed to dispose of radioactive waste.

(ooooo) "Weekly" means once every calendar week, not to exceed an interval of ten days.

(ppppp) "Whole body" means, for purposes of external exposure, head, trunk, including male gonads, arms above the elbow, or legs above the knee.

(qqqqq) "Worker" means an individual engaged in work under a license issued by the Director and controlled by a licensee. If the licensee is an individual rather than one of the other legal entities defined under "person," the radiation exposure limits for the worker also apply to the individual who is the licensee.

(rrrrr) "Working level" (WL) means any combination of short-lived radon daughters in one liter of air that will result in the ultimate emission of 1.3×10^5 MeV of potential alpha particle energy. The short-lived radon daughters for radon-222 are: polonium-218, lead-214, bismuth-214, and polonium-214; and for radon-220: polonium-216, lead-212, bismuth-212, and polonium-212.

(sssss) "Working level month" (WLM) means an exposure to one working level for 170 hours. Two thousand working hours per year divided by 12 months per year is approximately equal to 170 hours per month.

(ttttt) "Year" means the period of time beginning in January used to determine compliance with the provisions of this Chapter. The licensee may change the starting date of the year used to determine compliance by the licensee provided that the change is made at the beginning of the year and that no day is omitted or duplicated in consecutive years.

(uuuuu) "Director" means the Director of the Environmental Protection Division of the Department of Natural Resources.

(vvvvv) "Division" means the Environmental Protection Division.

(3) **Exemptions from the Regulatory Requirements.**

(a) General Provision. The Director may, upon application or upon its own initiative, grant such exemptions or exceptions from the requirements of this Chapter as it determines are authorized by law and will not result in undue hazard to public health and safety or property.

(b) U.S. Department of Energy Contractors and U.S. Nuclear Regulatory Commission Contractors. Any U.S. Department of Energy contractor or subcontractor and any U.S. Nuclear Regulatory Commission contractor or subcontractor of the following categories operating within this State are exempt from this Chapter to the extent that such contractor or subcontractor under his contract receives, possesses, uses, transfers, or acquires sources of radiation:

1. Prime contractors performing work for the U.S. Department of Energy at U.S. government-owned or -controlled sites, including the transportation of sources of radiation to or from such sites and the performance of contract services during temporary interruptions of such transportation;

2. Prime contractors of the U.S. Department of Energy performing research in, or development, manufacture, storage, testing, or transportation of, atomic weapons or components thereof;

3. Prime contractors of the U.S. Department of Energy using or operating nuclear reactors or other nuclear devices in a United States government-owned vehicle or vessel; and

4. Any other prime contractor or subcontractor of the U.S. Department of Energy or of the U.S. Nuclear Regulatory Commission when the Department and the Nuclear Regulatory Commission jointly determine:

(i) That the exemption of the prime contractor or subcontractor is authorized by law; and

(ii) That, under the terms of the contract or subcontract, there is adequate assurance that the work thereunder can be accomplished without undue risk to public health and safety.

(4) **Records.** Each licensee shall maintain records showing the receipt, transfer, and disposal of all sources of radiation. Additional record requirements are specified elsewhere in this Chapter.

(5) **Inspections.**

(a) Each licensee shall afford the Division at all reasonable times, an opportunity to inspect sources of radiation and the premises and facilities wherein such sources of radiation are used or stored.

(b) Each licensee shall make available to the Division for inspection, upon reasonable notice, records maintained pursuant to this Chapter.

(c) The Division or its designated representative is authorized under the authority of O.C.G.A. 31-5-5 to classify as confidential and privileged such documents, reports, and other information and data obtained from persons, firms, corporations, municipalities, counties, and other public authorities and political subdivisions where such matters relate to:

1. Trade secrets and commercial or financial information furnished to the Division on a privileged or confidential basis. Matters subject to this exemption are those that are customarily held in confidence by the originator. They include, but are not limited to:

(i) Information received in confidence, such as trade secrets, inventions, and proprietary data;

(ii) Technical reports and data, designs, drawings, specifications, formulas, or other types of proprietary information which are furnished to the Division or which are generated or developed by the Division or for the Division under contract.

2. Personnel and medical files and similar files, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy. Examples of files exempt from disclosure include, but are not limited to names or identifying information regarding individuals who have received exposure to radiation.

(d) Discovery of material qualified pursuant to 391-3-17-.01(5)(c) shall be subject to the statutory requirements found in O.C.G.A. 31-5-5.

(6) **Tests.** Each licensee shall perform upon instructions from the Division, or shall permit the Division to perform, such reasonable tests as the Division deems appropriate or necessary, including, but not limited to, tests of:

(a) Sources of radiation;

(b) Facilities wherein sources of radiation are used or stored;

(c) Radiation detection and monitoring instruments; and

(d) Other equipment and devices used in connection with utilization or storage of licensed sources of radiation.

(7) **Additional Requirements.** The Director by Order, may impose upon any licensee such requirements in addition to those established in this Chapter as it deems appropriate or necessary to minimize danger to public health and safety or property.

(8) **Violations.**

(a) An injunction or other court order may be obtained prohibiting any violation of the provisions of the Act, this Chapter, or any Order issued thereunder in accordance with Rule 391-3-17-.11. Any person who willfully violates any provision of the Act, this Chapter, or any Order issued thereunder may be guilty of a misdemeanor as provided by law. Violators of this Chapter may also be subject to civil penalties in accordance with O.C.G.A. 31-13-15.

(b) Any licensee, certificate of registration holder, applicant for a license or certificate of registration, employee of a licensee, certificate of registration holder or applicant; or any contractor (including a supplier or consultant), subcontractor, employee of a contractor or subcontractor of any licensee or certificate of registration holder or applicant for a license or certificate of registration, who knowingly provides to any licensee, applicant, certificate holder, contractor, or subcontractor, any components, equipment, materials, or other goods or services that relate to a licensee's, certificate holder's or applicant's activities in this part, may not:

1. Engage in deliberate misconduct that causes or would have caused, if not detected, a licensee, certificate of registration holder, or applicant to be in violation of any Rule, Regulation, or Order; or any term, condition, or limitation of any license issued by the Director; or

2. Deliberately submit to the Division, a licensee, certificate of registration holder, an applicant, or a licensee's, certificate holder's or applicant's, contractor or subcontractor, information that the person submitting the information knows to be incomplete or inaccurate in some respect material to the Division.

(c) A person who violates 8(b)1. or 8(b)2. may be subject to enforcement action in accordance with the provisions of Rule .11 of this Chapter.

(d) For the purposes of 8(b)1., deliberate misconduct by a person means an intentional act or omission that the person knows:

1. Would cause a licensee, certificate of registration holder or applicant to be in violation of any Rule, Regulation, or Order; or any term, condition, or limitation, of any license issued by the Director; or

2. Constitutes a violation of a requirement, procedure, instruction, contract, purchase order, or policy of a licensee, certificate of registration holder, applicant, contractor, or subcontractor.

(9) **Impounding.** The Director shall have the authority in the event of an emergency to impound or order the impounding of radioactive material in the possession of any person who is not equipped to observe or fails to observe the provisions of this Chapter or any Rules issued thereunder.

(a) Upon a showing that the emergency no longer exists and the owner of the radioactive material has demonstrated that he has achieved and is capable of maintaining compliance with the Act, the terms and conditions of his license, all Rules and Orders of the Director, the Director may return the impounded radioactive material to its owner.

(b) In the event an owner cannot demonstrate his ability to achieve and maintain compliance with the Act, the terms and conditions of his license, all Rules and Orders of the Director, the Director is authorized to seek a court order condemning such radioactive material and providing for its destruction or other disposition for the health and safety of the populace.

(10) **Severability.** Should any section, paragraph, sentence, clause or phrase of this Chapter be declared unconstitutional or invalid for any reason, the remainder of this Chapter shall not be affected thereby.

(11) **Units of Exposure and Dose.**

(a) As used in this Chapter, the unit of Exposure is the Coulomb per kilogram (C/kg). One Roentgen is equal to 2.58 x 10^{-4} Coulomb per kilogram of air.

(b) As used in this Chapter, the units of dose are:

1. Gray (Gy) is the SI unit of absorbed dose. One Gray is equal to an absorbed dose of 1 Joule/kilogram (100 rad).

2. Rad is the special unit of absorbed dose. One rad is equal to an absorbed dose of 100 ergs/gram or 0.01 Joule/kilogram (0.01 Gy).

3. Rem is the special unit of any of the quantities expressed as dose equivalent. The dose equivalent in rem is equal to the absorbed dose in rad multiplied by the quality factor (1 rem = 0.01 Sv).

4. Sievert is the SI unit of any of the quantities expressed as dose equivalent. The dose equivalent in Sievert is equal to the absorbed dose in Gray multiplied by the quality factor (1 Sv = 100 rem).

(c) As used in this Chapter, the quality factors for converting absorbed dose to dose equivalent are shown in Table I.

TABLE I

QUALITY FACTORS AND ABSORBED DOSE EQUIVALENCIES

TYPE OF RADIATION	Quality Factor (Q)	Absorbed Dose Equal to a Unit Dose Equivalent [(a)]
X, gamma, or beta radiation and high-speed electrons	1	1
Alpha particles, multiple-charged particles, fission fragments and heavy particles of unknown charge	20	0.05
Neutrons of unknown energy	10	0.1
High-energy protons	10	0.1

[(a)] Absorbed dose in rad equal to 1 rem or the absorbed dose in Gray equal to 1 Sv.

(d) If it is more convenient to measure the neutron fluence rate than to determine the neutron dose equivalent rate in Sievert per hour or rem per hour, as provided in (11)(c) of this Rule, 0.01 Sv (1 rem) of neutron radiation of unknown energies may, for purposes of this Chapter, be assumed to result from a total fluence of 25 million neutrons per square centimeter incident upon the body. If sufficient information exists to estimate the approximate energy distribution of the neutrons, the licensee may use the fluence rate per unit dose equivalent or the appropriate Q value from Table II to convert a measured tissue dose in Gray or rad to dose equivalent in Sievert or rem.

TABLE II

MEAN QUALITY FACTORS, Q, AND FLUENCE PER UNIT DOSE EQUIVALENT FOR MONOENERGETIC NEUTRONS

	Neutron Energy (MeV)	Quality Factor [a] (Q)	Fluence per Unit Dose Equivalent [b] (neutrons cm^{-2} rem^{-1})	Fluence per Unit Dose Equivalent [b] (neutrons cm^{-2} Sv^{-1})
(thermal)	2.5×10^{-8}	2	980×10^{6}	980×10^{8}
	1×10^{-7}	2	980×10^{6}	980×10^{8}
	1×10^{-6}	2	810×10^{6}	810×10^{8}
	1×10^{-5}	2	810×10^{6}	810×10^{8}
	1×10^{-4}	2	840×10^{6}	840×10^{8}
	1×10^{-3}	2	980×10^{6}	980×10^{8}
	1×10^{-2}	2.5	1010×10^{6}	1010×10^{8}
	1×10^{-1}	7.5	170×10^{6}	170×10^{8}
	5×10^{-1}	11	39×10^{6}	39×10^{8}
	1	11	27×10^{6}	27×10^{8}
	2.5	9	29×10^{6}	29×10^{8}
	5	8	23×10^{6}	23×10^{8}
	7	7	24×10^{6}	24×10^{8}
	10	6.5	24×10^{6}	24×10^{8}
	14	7.5	17×10^{6}	17×10^{8}
	20	8	16×10^{6}	16×10^{8}
	40	7	14×10^{6}	14×10^{8}
	60	5.5	16×10^{6}	16×10^{8}
	1×10^{2}	4	20×10^{6}	20×10^{8}
	2×10^{2}	3.5	19×10^{6}	19×10^{8}
	3×10^{2}	3.5	16×10^{6}	16×10^{8}
	4×10^{2}	3.5	14×10^{6}	14×10^{8}

[a] Value of quality factor (Q) at the point where the dose equivalent is maximum in a 30-cm diameter cylinder tissue-equivalent phantom.

[b] Monoenergetic neutrons incident normally on a 30-cm diameter cylinder tissue-equivalent phantom.

(12) **Units of Radioactivity.** For purposes of this Chapter, activity is expressed in the SI unit of Becquerel (Bq) or in the special unit of Curie (Ci), or their multiples, or disintegrations or transformations per unit of time.

(a) One Becquerel (Bq) = 1 disintegration or transformation per second.

(b) One Curie (Ci) = 3.7×10^{10} disintegrations or transformations per second = 3.7×10^{10} Becquerel (Bq) = 2.22×10^{12} disintegrations or transformations per minute.

(13) **Communications.** All communications and reports concerning this Chapter, and applications filed thereunder should be addressed to the Georgia Department of Natural Resources/Environmental Protection Division, Radioactive Materials Program, at 4244 International Parkway, Suite 120, Atlanta, Georgia 30354.

a) Georgia Emergency Radiological Assistance Numbers.

GEORGIA EMERGENCY RADIOLOGICAL ASSISTANCE TELEPHONE NUMBERS

To Report a Radiological Emergency or Request Emergency Radiological Assistance,

Call the Following Number **During Business Hours:**

Georgia Environmental Protection Division

Radioactive Materials Program and Environmental Radiation Program

(404) 363-7000

For **24-Hour** Radiological Assistance, Call:

Georgia Emergency Management Agency

Emergency Operations Center

1-800-241-4113

[1] Attention is directed to the fact that regulation by the State of source material, byproduct material, and special nuclear material in quantities not sufficient to form a critical mass is subject to the provisions of the agreement between the State of Georgia and the U.S. Nuclear Regulatory Commission and to 10 CFR Part 150 of the Commission's regulations.

Cite as Ga. Comp. R. & Regs. R. 391-3-17-.01

AUTHORITY: O.C.G.A. § 31-13-1 ***et seq*****., as amended.**

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Amended: F. Apr. 11, 2016; eff. May 1, 2016.

Amended: New title "General Provisions." F. June 1, 2017; eff. June 21, 2017.

Amended: F. Jan. 28, 2019; eff. Feb. 17, 2019.

Amended: F. Mar. 24, 2021; eff. Apr. 13, 2021.

391-3-17-.02 Licensing of Radioactive Material

(1) **Purpose and Scope.**

(a) This Rule, 391-3-17-.02, provides for the licensing of radioactive material. No person shall receive, possess, use, transfer, own, or acquire radioactive material except as authorized in a specific or general license issued pursuant to this Rule or as otherwise provided in this Chapter. However, nothing in this Rule shall apply to any person to the extent such person is subject to regulation by the U.S. Nuclear Regulatory Commission.

(b) In addition to the requirements of this Rule, all licensees are subject to the requirements of Rules .01, .03, .06, .07, .10, and .11 of this Chapter. Licensees engaged in industrial radiographic operations are subject to the requirements of Rule .04 of this Chapter. Licensees using radioactive material in the healing arts are also subject to the requirements of Rule .05 of this Chapter. Licensees engaged in the extrusion, mining, storage, beneficiating, processing, use, transfer, or disposal of NORM in such a manner as to alter the chemical properties or physical state

of the NORM or its potential exposure pathways to humans are also subject to the requirements of Rule .08 of this Chapter. Licensees using irradiators whose dose rate exceeds 500 rads (5 Grays) per hour at one meter from the radioactive sealed sources are also subject to the requirements of Rule .09 of this Chapter.

Note: All numbered and lettered references within this Rule refer to parts of this Rule, unless stated otherwise.

(2) **Exemptions/Source Material.**

(a) Any person is exempt from this Rule to the extent that such person receives, possesses, uses, owns, or transfers source material in any chemical mixture, compound, solution, or alloy in which the source material is by weight less than 1/20 of one percent (0.05 percent) of the mixture, compound, solution, or alloy.

(b) Any person is exempt from this Rule to the extent that such person receives, possesses, uses, or transfers unrefined and unprocessed ore containing source material; provided that, except as authorized in a specific license, such person shall not refine or process such ore.

(c) Any person is exempt from this Rule to the extent that such person receives, possesses, uses, or transfers:

1. Any quantities of thorium contained in:

(i) Incandescent gas mantles,

(ii) Vacuum tubes,

(iii) Welding rods,

(iv) Electric lamps for illuminating purposes provided that each lamp does not contain more than 50 milligrams of thorium,

(v) Germicidal lamps, sunlamps, and lamps for outdoor or industrial lighting provided that each lamp does not contain more than two grams of thorium,

(vi) Rare earth metals and compounds, mixtures, and products containing not more than 0.25 percent by weight thorium, uranium, or any combination of these, or

(vii) Personnel neutron dosimeters, provided that each dosimeter does not contain more than 50 milligrams of thorium;

2. Source material contained in the following products:

(i) Glazed ceramic tableware manufactured before August 27, 2013, provided that the glaze contains not more than 20 percent by weight source material,

(ii) Glassware containing not more than ten percent by weight source material, but not including commercially manufactured glass brick, pane glass, ceramic tile, or other glass or ceramic used in construction,

(iii) Glassware containing not more than 2 percent by weight source material, or for glassware manufactured before August 27, 2013, 10 percent by weight source material; but not including commercially manufactured glass brick, pane glass, ceramic tile, or other glass or ceramic used in construction, or

(iv) Piezoelectric ceramic containing not more than two percent by weight source material;

3. Photographic film, negatives, and prints containing uranium or thorium;

4. Any finished product or part fabricated of, or containing, tungsten-thorium or magnesium-thorium alloys, provided that the thorium content of the alloy does not exceed four percent by weight and that this exemption shall

not be deemed to authorize the chemical, physical, or metallurgical treatment or processing of any such product or part;

5. Uranium contained in counterweights installed in aircraft, rockets, projectiles, and missiles, or stored or handled in connection with installation or removal of such counterweights, provided that:

(i) Each such counterweight has been impressed with the following legend clearly legible through any plating or other covering: "DEPLETED URANIUM",

(ii) Each counterweight is durably and legibly labeled or marked with the identification of the manufacturer and the statement: "UNAUTHORIZED ALTERATIONS PROHIBITED", and

(iii) This exemption shall not be deemed to authorize the chemical, physical, or metallurgical treatment or processing of any such counterweights other than repair or restoration of any plating or other covering;

Note: The requirements specified in (2)(c)5.(i) and (ii) need not be met by counterweights manufactured prior to December 31, 1969, provided that such counterweights are impressed with the legend: "CAUTION - RADIOACTIVE MATERIAL - URANIUM".

6. Natural or depleted uranium metal used as shielding constituting part of any shipping container which is conspicuously and legibly impressed with the legend: "CAUTION - RADIOACTIVE SHIELDING - URANIUM" and the uranium metal is encased in mild steel or equally fire-resistant metal of minimum wall thickness of 1/8 inch (3.2 mm);

7. Thorium or uranium contained in or on finished optical lenses and mirrors, provided that each lens or mirror does not contain more than 10 percent by weight thorium or uranium or, for lenses manufactured before August 27, 2013, 30 percent by weight of thorium; and that this exemption contained in this subparagraph (c) does not authorize either:

(i) The shaping, grinding, or polishing of such lens or mirror or manufacturing processes other than the assembly of such lens or mirror into optical systems and devices without any alteration of the lens or mirror; or

(ii) The receipt, possession, use, or transfer of uranium or thorium contained in contact lenses, in spectacles, or in eyepieces in binoculars or other optical instruments;

8. Uranium contained in detector heads for use in fire detection units, provided that each detector head contains not more than 0.005 microcurie of uranium; or

9. Thorium contained in any finished aircraft engine part containing nickel-thoria alloy, provided that:

(i) The thorium is dispersed in the nickel-thoria alloy in the form of finely divided thoria (thorium dioxide), and

(ii) The thorium content in the nickel-thoria alloy does not exceed four percent by weight.

10. No person may initially transfer for sale or distribution a product containing source material to persons exempt under this subparagraph (c), or equivalent regulations of an Agreement State or the U.S. Nuclear Regulatory Commission, unless authorized by a license issued under 10 CFR 40.52 to initially transfer such products for sale or distribution.

(i) Persons initially distributing source material in products covered by the exemptions in this subparagraph (c) before August 27, 2013, without specific authorization may continue such distribution for 1 year beyond this date. Initial distribution may also be continued until the Commission takes final action on a pending application for license or license amendment to specifically authorize distribution submitted no later than 1 year beyond this date.

(ii) Persons authorized to manufacture, process, or produce these materials or products containing source material by an Agreement State, and persons who import finished products or parts, for sale or distribution must be authorized

by a license issued under 10 CFR 40.52 for distribution only and are exempt from the requirements of 10 CFR 19 and 20, and 10 CFR 40.32(b) and (c).

(d) The exemptions in paragraph (2)(c) do not authorize the manufacture of any of the products described.

(3) **Exemptions/Radioactive Material Other Than Source Material.**

(a) Exempt Concentrations.

1. Except as provided in (3)(a)3. and 4., any person is exempt from this Chapter to the extent that such person receives, possesses, uses, transfers, owns, or acquires products containing radioactive material in concentrations not in excess of those listed in (21)(a), Schedule A.

2. This section shall not be deemed to authorize the import of radioactive material or products containing radioactive material.

3. A manufacturer, processor, or producer of a product or material is exempt from the requirements of this Rule to the extent that this person transfers products containing radioactive material in concentrations not in excess of those listed in (21)(a) Schedule A and introduced into the product or material by a licensee holding a specific license issued by the Director expressly authorizing such introduction. This exemption does not apply to the transfer of radioactive material contained in any food, beverage, cosmetic, drug, or other commodity or product designed for ingestion or inhalation by, or application to, a human being.

4. No person may introduce radioactive material into a product or material knowing or having reason to believe that it will be transferred to persons exempt under (3)(a). or equivalent Regulations of the U.S. Nuclear Regulatory Commission or any Agreement State, except in accordance with a specific license issued pursuant to 10 CFR 32.11.

(b) Exempt Quantities.

1. Except as provided in (3)(b)3. through 5., any person is exempt from this Chapter to the extent that such person receives, possesses, uses, transfers, owns, or acquires radioactive material in individual quantities each of which does not exceed the applicable quantity set forth in (21)(b), Schedule B.

2. Any person, who possesses radioactive material received or acquired before September 25, 1971, under the general license then provided in 10 CFR 31.4, or similar general license of an Agreement State, is exempt from the requirements of this Chapter to the extent that this person possesses, uses, transfers, or owns byproduct material.

3. Paragraph (3)(b) does not authorize the production, packaging, repackaging, or transfer of radioactive material for purposes of commercial distribution, or the incorporation of radioactive material into products intended for commercial distribution.

4. No person may, for purposes of commercial distribution, transfer radioactive material in the individual quantities set forth in (21)(b), Schedule B, knowing or having reason to believe that such quantities of radioactive material will be transferred to persons exempt under (3)(b) or equivalent regulations of the U.S. Nuclear Regulatory Commission or any Agreement State, except in accordance with a specific license issued by the U.S. Nuclear Regulatory Commission pursuant to Section 32.18 of 10 CFR, Part 32, or by the Director pursuant to (11)(b) which license states that the radioactive material may be transferred by the licensee to persons exempt under (3)(b) or the equivalent regulations of the U.S. Nuclear Regulatory Commission or an Agreement State.

5. No person may, for purposes of producing an increased radiation level, combine quantities of byproduct material covered by this exemption so that the aggregate quantity exceeds the limits set forth in (21)(b), Schedule B, except for radioactive material combined within a device placed in use before May 3, 1999, or as otherwise permitted by this Chapter.

(c) Exempt Items.

1. Certain Items Containing Radioactive Material. Except for persons who apply radioactive material to, or who incorporate radioactive material into, the following products, or persons who initially transfer for sale or distribution the following products containing radioactive material, any person is exempt from the requirements for a license set forth in this Chapter to the extent that he receives, possesses, uses, transfers, owns, or acquires the following products:

Note: Authority to transfer possession or control by the manufacturer, processor, or producer of any equipment, device, commodity, or other product containing radioactive material whose subsequent possession, use, transfer, and disposal by all other persons are exempted from regulatory requirements may be obtained only from the U.S. Nuclear Regulatory Commission, Washington, D.C., 20555.

(i) Timepieces or hands or dials containing not more than the following specified quantities of radioactive material and not exceeding the following specified radiation dose rates:

(I) 25 millicuries (925 MBq) of tritium per timepiece.

(II) 5 millicuries (185 MBq) of tritium per hand.

(III) 15 millicuries (555 MBq) of tritium per dial (bezels when used shall be considered as part of the dial).

(IV) 100 microcuries (3.7 MBq) of promethium-147 per watch or 200 microcuries (7.4 MBq) of promethium-147 per any other timepiece.

(V) 20 microcuries (0.74 MBq) of promethium-147 per watch hand or 40 microcuries (1.48 MBq) of promethium-147 per other timepiece hand.

(VI) 60 microcuries (2.22 MBq) of promethium-147 per watch dial or 120 microcuries (4.44 MBq) of promethium-147 per other timepiece dial (bezels when used shall be considered as part of the dial).

(VII) The levels of radiation from hands and dials containing promethium-147 will not exceed, when measured through 50 milligrams per square centimeter of absorber:

I. For wrist watches, 0.1 millirad (1 µGy) per hour at ten centimeters from any surface.

II. For pocket watches, 0.1 millirad (1 µGy) per hour at one centimeter from any surface.

III. For any other timepiece, 0.2 millirad (2 µGy) per hour at ten centimeters from any surface.

(VIII) One microcurie (37 kBq) of radium-226 per timepiece in intact timepieces manufactured prior to November 30, 2007.

(ii) Static elimination devices which contain, as a sealed source or sources, byproduct material consisting of a total of not more than 18.5 MBq (500 µCi) of polonium-210 per device.

(iii) Ion generating tubes designed for ionization of air that contain, as a sealed source or sources, byproduct material consisting of a total of not more than 18.5 MBq (500 µCi) of polonium-210 per device or of a total of not more than 1.85 GBq (50 mCi) of hydrogen-3 (tritium) per device.

(iv) Such devices authorized before October 23, 2012, for use under the general license then provided in Section 31.3 of 10 CFR, Part 31 and equivalent regulations of Agreement States and manufactured, tested, and labeled by the manufacturer in accordance with the specifications contained in a specific license issued by the Director.

(v) Precision balances containing not more than one millicurie (37 MBq) of tritium per balance or not more than 0.5 millicurie (18.5 MBq) of tritium per balance part manufactured before December 17, 2007.

(vi) [Reserved]

(vii) Marine compasses containing not more than 750 millicuries (27.8 GBq) of tritium gas and other marine navigational instruments containing not more than 250 millicuries (9.25 GBq) of tritium gas manufactured before December 17, 2007.

(viii) [Reserved]

(ix) Ionization chamber smoke detectors containing not more than 1 microcurie (μCi) of americium-241 per detector in the form of a foil and designed to protect life and property from fires.

(x) Electron tubes, provided that the levels of radiation from each electron tube containing radioactive material will not exceed one millirad (10 μGy) per hour at one centimeter from any surface when measured through seven milligrams per square centimeter of absorber. Provided also, that each tube does not contain more than one of the following specified quantities of radioactive material:

(I) 150 millicuries (5.55 GBq) of tritium per microwave receiver protector tube or ten millicuries (370 MBq) of tritium per any other electron tube.

(II) 1 microcurie (37 kBq) of cobalt-60.

(III) 5 microcuries (185 kBq) of nickel-63.

(IV) 30 microcuries (1.11 MBq) of krypton-85.

(V) 5 microcuries (185 kBq) of cesium-137.

(VI) 30 microcuries (1.11 MBq) of promethium-147.

NOTE: For the purpose of .02(3)(c)1.(x), "Electron tubes" includes spark gap tubes, power tubes, gas tubes including glow lamps, receiving tubes, microwave tubes, indicator tubes, pick-up tubes, radiation detection tubes, and any other completely sealed tube that is designed to conduct or control electrical currents.

(xi) Ionizing radiation measuring instruments containing, for purposes of internal calibration or standardization, one or more sources of radioactive material, provided that:

(I) Each source contains no more than one exempt quantity set forth in (21)(b), Schedule B;

(II) Each instrument contains no more than ten exempt quantities. For purposes of this requirement, an instrument's source(s) may contain either one or different types of radionuclides and an individual exempt quantity may be composed of fractional parts of one or more of the exempt quantities specified in (21)(b), Schedule B, provided that the sum of such fractions shall not exceed unity; and

(III) For purposes of .02(3)(c)1.(xi), 0.05 microcurie (1.85 kBq) of americium-241 is considered an exempt quantity under (21)(b), Schedule B.

(xii) [Reserved]

(xiii) Any person who desires to apply byproduct material to, or to incorporate byproduct material into, the products exempted in 3(c)1., or who desires to initially transfer for sale or distribution such products containing radioactive material, should apply for a specific license with the U.S. Nuclear Regulatory Commission pursuant to Section 32.14 of 10 CFR, Part 32, which license states that the product may be distributed by the licensee to persons exempt under (3)(c)1., or the equivalent regulations of the U.S. Nuclear Regulatory Commission or an Agreement State.

2. Self-Luminous Products Containing Radioactive Material.

(i) Tritium, krypton-85, or promethium-147. Except for persons who manufacture, process, produce, or initially transfer for sale or distribution self-luminous products containing tritium, krypton-85, or promethium-147, any person is exempt from the requirements for a license set forth in this Chapter to the extent that such person receives, possesses, uses, transfers, owns, or acquires tritium, krypton-85 or promethium-147 in self-luminous products manufactured, processed, produced, or initially transferred in accordance with a specific license issued by the U.S. Nuclear Regulatory Commission pursuant to Section 32.22 of 10 CFR, Part 32, which license authorizes the initial transfer of the product to persons who are exempt from regulatory requirements. This exemption does not apply to tritium, krypton-85, or promethium-147 used in products for frivolous purposes or in toys or adornments.

(ii) Radium-226. Any person is exempt from this Chapter to the extent that such person receives, possesses, uses, transfers, or owns articles containing less than 0.1 microcurie (3.7 kBq) of radium-226 that were acquired prior to July 12, 1982.

(iii) Any person who desires to manufacture, process, or produce, or initially transfer for sale or distribution self-luminous products containing tritium, krypton-85, or promethium-147 for use under paragraph .02(3)(c)2.(i) should apply for a license with the U.S. Nuclear Regulatory Commission pursuant to Section 32.22 of 10 CFR Part 32 and apply to the U.S. Nuclear Regulatory Commission for a certificate of registration in accordance with Section 32.210 of 10 CFR Part 32.

3. Gas and Aerosol Detectors Containing Radioactive Material.

(i) Except for persons who manufacture, process, produce, or initially transfer for sale or distribution gas and aerosol detectors containing radioactive material, any person is exempt from the requirements for a license set forth in this Chapter to the extent that such person receives, possesses, uses, transfers, owns, or acquires radioactive material in gas and aerosol detectors designed to protect health, safety, or property provided that detectors containing radioactive material shall have been manufactured, processed, produced, or initially transferred in accordance with a specific license issued by the U.S. Nuclear Regulatory Commission pursuant to Section 32.26 of 10 CFR, Part 32. This exemption also covers gas and aerosol detectors manufactured or distributed before November 30, 2007, in accordance with a specific license issued by a State under comparable provisions to Section 32.26 of 10 CFR, Part 32 authorizing distribution to persons exempt from regulatory requirements.

(ii) Gas and aerosol detectors containing naturally-occurring and accelerator-produced radioactive material (NARM) previously manufactured and distributed to general licensees in accordance with a specific license issued by an Agreement State shall be considered exempt under (3)(c)3.(i), provided that the device is labeled in accordance with the specific license authorizing distribution of the generally licensed device, and provided further that they meet the requirements of 10 CFR 32.26.

(iii) Gas and aerosol detectors containing NARM previously manufactured and distributed in accordance with a specific license issued by the U.S. Nuclear Regulatory Commission or another Agreement State shall be considered exempt under (3)(c)3.(i), provided that the device is labeled in accordance with the specific license authorizing distribution, and provided further that they meet the requirements of 10 CFR 32.26.

(iv) Any person who desires to manufacture, process, or produce gas and aerosol detectors containing radioactive material, or to initially transfer such products for use under .02(3)(c)3.(i) should apply for a license with the U.S. Nuclear Regulatory Commission pursuant to Section 32.26 of 10 CFR Part 32 and apply to the U.S. Nuclear Regulatory Commission for a certificate of registration in accordance with Section 32.210 of 10 CFR, Part 32.

4. Radioactive drug: Capsules containing carbon-14 urea for "in vivo" diagnostic use for humans.

(i) Except as provided in .02(3)(c)4.(ii) and .02(3)(c)4.(iii), any person is exempt from the requirements for a license set forth in O.C.G.A. Section 31-13-5(a)(9) (Georgia Radiation Control Act) and from the regulations in this Chapter provided that such person receives, possesses, uses, transfers, owns, or acquires capsules containing one µCi (37 kBq) carbon-14 urea (allowing for nominal variation that may occur during the manufacturing process) each, for "in vivo" diagnostic use for humans.

(ii) Any person who desires to use the capsules for research involving human subjects shall apply for and receive a specific license pursuant to Rule .02 and Rule .05 of this chapter.

(iii) Any person who desires to manufacture, prepare, process, produce, package, repackage, or transfer for commercial distribution such capsules shall apply for and receive a specific license pursuant to Rule .02 of this chapter.

(iv) Nothing in .02(3)(c)4. relieves persons from complying with applicable FDA, other Federal, and State requirements governing receipt, administration, and use of drugs.

5. Except for persons who manufacture, process, produce, or initially transfer for sale or distribution industrial devices containing byproduct material designed and manufactured for the purpose of detecting, measuring, gauging or controlling thickness, density, level, interface location, radiation, leakage, or qualitative or quantitative chemical composition, or for producing an ionized atmosphere, any person is exempt from the requirements for a license set forth in this Chapter to the extent that such person receives, possesses, uses, transfers, owns, or acquires byproduct material, in these certain detecting, measuring, gauging, or controlling devices and certain devices for producing an ionized atmosphere, and manufactured, processed, produced, or initially transferred in accordance with a specific license issued under Section 32.30 of 10 CFR Part 32, which license authorizes the initial transfer of the device for use under this section. This exemption does not cover sources not incorporated into a device, such as calibration and reference sources.

6. Any person who desires to manufacture, process, produce, or initially transfer for sale or distribution industrial devices containing byproduct material for use under .02(3)(c)5. should apply for a license to the U.S. Nuclear Regulatory Commission pursuant to Section 32.30 of 10 CFR Part 32 and to the U.S. Nuclear Regulatory Commission for a certificate of registration in accordance with § 32.210 of 10 CFR, Part 32.

(4) **Types of Licenses.** Licenses for radioactive materials are of two types: general and specific.

(a) General licenses provided in this Rule are effective without the filing of applications with the Division or the issuance of licensing documents to the particular persons, although the filing of a certificate with the Division may be required by the particular general license. The general licensee is subject to all other applicable portions of this Chapter and any limitations of the general license.

(b) Specific licenses require the submission of an application to the Division and the issuance of a licensing document by the Director to a named person. The licensee is subject to all applicable portions of this Chapter as well as any limitations specified in the licensing document.

(5) **General Licenses - Source Material.**

(a) A general license is hereby issued authorizing persons to hold bare title to source material without regard to quantity. This general license does not authorize any person to receive, possess, use, or transfer source material.

(b) A general license is hereby issued authorizing commercial and industrial firms; research, educational, and medical institutions; and Federal, State and local government agencies to receive, possess, use, and transfer uranium and thorium, in their natural isotopic concentrations and in the form of depleted uranium, for research, development, educational, commercial, or operational purposes in the following forms and quantities:

1. No more than 1.5 kg (3.3 lb) of uranium and thorium in dispersible forms (e.g., gaseous, liquid, powder, etc.) at any one time. Any material processed by the general licensee that alters the chemical or physical form of the material containing source material must be accounted for as a dispersible form. A person authorized to possess, use, and transfer source material under this subparagraph may not receive more than a total of 7 kg (15.4 lb) of uranium and thorium in any one calendar year. Persons possessing source material in excess of these limits as of August 27, 2013, may continue to possess up to 7 kg (15.4 lb) of uranium and thorium at any one time for one year beyond this date, or until the Nuclear Regulatory Commission takes final action on a pending application submitted on or August 27, 2014, for a specific license for such material; and receive up to 70 kg (154 lb) of uranium or thorium in

any one calendar year until December 31, 2014, or until the Nuclear Regulatory Commission takes final action on a pending application submitted on or before August 27, 2014, for a specific license for such material; and

2. No more than a total of 7 kg (15.4 lb) of uranium and thorium at any one time. A person authorized to possess, use, and transfer source material under this subparagraph may not receive more than a total of 70 kg (154 lb) of uranium and thorium in any one calendar year. A person may not alter the chemical or physical form of the source material possessed under this subparagraph unless it is accounted for under the limits of subparagraph (b)(1) of this section; or

3. No more than 7 kg (15.4 lb) of uranium, removed during the treatment of drinking water, at any one time. A person may not remove more than 70 kg (154 lb) of uranium from drinking water during a calendar year under this subparagraph; or

4. No more than 7 kg (15.4 lb) of uranium and thorium at laboratories for the purpose of determining the concentration of uranium and thorium contained within the material being analyzed at any one time. A person authorized to possess, use, and transfer source material under this subparagraph may not receive more than a total of 70 kg (154 lb) of source material in any one calendar year.

(c) Any person who receives, possesses, uses, or transfers source material in accordance with the general license in subparagraph (b) of this section.

1. Is prohibited from administering source material, or the radiation there from, either externally or internally, to human beings except as may be authorized by the NRC in a specific license.

2. Shall not abandon such source material. Source material may be disposed of as follows:

(i) A cumulative total of 0.5 kg (1.1 lb) of source material in a solid, non-dispersible form may be transferred each calendar year, by a person authorized to receive, possess, use, and transfer source material under this general license to persons receiving the material for permanent disposal. The recipient of source material transferred under the provisions of this subparagraph (c) is exempt from the requirements to obtain a license under paragraph (5) to the extent the source material is permanently disposed. This provision does not apply to any person who is in possession of source material under a specific license issued under 391-3-17-.02(7) through 391-3-17-.02(13); or

(ii) In accordance with 391-3-17-.03(13) of this Chapter.

3. Is subject to the provisions of 391-3-17-.03(13) of this Chapter.

4. Is subject to the provisions in 391-3-17-.01(4), (5), (6) and (8), 391-3-17-.02(13), (18) and (19), and 391-3-17-.03(14) and (15).

5. Shall not export such source material except in accordance with 10 CFR Part 110.

(d) Depleted Uranium in Industrial Products and Devices.

1. A general license is hereby issued to receive, acquire, possess, use, or transfer, in accordance with the provisions of (5)(d)2., 3., 4., and 5., depleted uranium contained in industrial products or devices for the purpose of providing a concentrated mass in a small volume of the product or device.

2. The general license in (5)(d)1. applies only to industrial products or devices which have been manufactured either in accordance with a specific license issued to the manufacturer of the products or devices in accordance with a specific license issued to the manufacturer by the U.S. Nuclear Regulatory Commission or an Agreement State which authorizes manufacture of the products or devices for distribution to persons generally licensed by the U.S. Nuclear Regulatory Commission or an Agreement State.

3. Persons who receive, acquire, possess, or use depleted uranium pursuant to the general license established by (5)(d)1. shall:

(i) File Division form "Registration Certificate - Use of Depleted Uranium Under General License" with the Division. The form shall be submitted within 30 days after the first receipt or acquisition of such depleted uranium. The registrant shall furnish on the form the following information and such other information as may be required by that form:

(I) Name and address of the registrant;

(II) A statement that the registrant has developed and will maintain procedures designed to establish physical control over the depleted uranium described in (5)(d)1. and designed to prevent transfer of such depleted uranium in any form, including metal scrap, to persons not authorized to receive the depleted uranium; and

(III) Name and/or title, address, and telephone number of the individual duly authorized to act for and on behalf of the registrant in supervising the procedures identified in (5)(d)3.(i)(II); and

(ii) Report in writing to the Division any changes in information furnished by him in Division form "Registration Certificate - Use of Depleted Uranium Under General License". The report shall be submitted within 30 days after the effective date of such change.

4. A person who receives, acquires, possesses, or uses depleted uranium pursuant to the general license established by (5)(d)1:

(i) Shall not introduce such depleted uranium, in any form, into a chemical, physical, or metallurgical treatment or process, except a treatment or process for repair or restoration of any plating or other covering of the depleted uranium;

(ii) Shall not abandon such depleted uranium;

(iii) Shall transfer or dispose of such depleted uranium only by transfer in accordance with the provisions of (19). In the case where the transferee receives the depleted uranium pursuant to the general license established by (5)(d)1., the transferor shall furnish the transferee a copy of this Regulation and a copy of Division form "Registration Certificate - Use of Depleted Uranium Under General License". In the case where the transferee receives the depleted uranium pursuant to a general license contained in the U.S. Nuclear Regulatory Commission's or Agreement State's regulation equivalent to (5)(d)1., the transferor shall furnish the transferee a copy of this Regulation and a copy of Division form "Registration Certificate - Use of Depleted Uranium Under General License" accompanied by a note explaining that use of the product or device is regulated by the U.S. Nuclear Regulatory Commission or Agreement State under requirements substantially the same as those in this Regulation;

(iv) Shall report in writing to the Division the name and address of the person receiving the depleted uranium pursuant to such transfer within 30 days of any transfer.

5. Any person receiving, acquiring, possessing, using, or transferring depleted uranium pursuant to the general license established by (5)(d)1. is exempt from the requirements of Rule .03 and Rule .07 of this Chapter with respect to the depleted uranium covered by that general license.

(e) Any person who receives, possesses, uses, or transfers source material in accordance with subparagraph (b) of this section shall conduct activities so as to minimize contamination of the facility and the environment. When activities involving such source material are permanently ceased at any site, if evidence of significant contamination is identified, the general licensee shall notify the Division about such contamination and may consult with the Division as to the appropriateness of sampling and restoration activities to ensure that any contamination or residual source material remaining at the site where source material was used under this general license is not likely to result in exposures that exceed the limits in 10 CFR 20.1402.

(f) Any person who receives, possesses, uses, or transfers source material in accordance with the general license granted in subparagraph (b) of this section is exempt from the provisions of 391-3-17-.03 and 391-3-17-.07 to the extent that such receipt, possession, use, and transfer are within the terms of this general license, except that such

person shall comply with the provisions of 391-3-17-.03(7)(b) and 391-3-17-.03(13)(a) to the extent necessary to meet the provisions of subparagraphs (c)(2) and (e) of this section. However, this exemption does not apply to any person who also holds a specific license issued under this Chapter.

(g) No person may initially transfer or distribute source material to persons generally licensed under subparagraph (b) of this section, or equivalent regulations of an Agreement State or NRC, unless authorized by a specific license issued in accordance with 391-3-17-.02(5)(h), 10 CFR 40.54, or equivalent provisions of an Agreement State. This prohibition does not apply to analytical laboratories returning processed samples to the client who initially provided the sample.

(h) An application for a specific license to initially transfer source material for use under 391-3-17-.02 will be approved if:

1. The applicant satisfies the general requirements specified in this Chapter; and

2. The applicant submits adequate information on, and the Division approves the methods to be used for quality control, labeling, and providing safety instructions to recipients.

(i) Each person licensed under 391-3-17-.02 shall label the immediate container of each quantity of source material with the type of source material and quantity of material and the words, "radioactive material."

(j) Each person licensed under 391-3-17-.02 shall ensure that the quantities and concentrations of source material are as labeled and indicated in any transfer records.

(k) Each person licensed under 391-3-17-.02 shall report transfers as follows:

1. File a report with the Division. The report shall include the following information:

(i) The name, address, and license number of the person who transferred the source material;

(ii) For each general licensee under 391-3-17-.02, 10 CFR 40.22 and equivalent Agreement State regulations or provisions to whom greater than 50 grams (0.11 lb) of source material has been transferred in a single calendar quarter, the name and address of the general licensee to whom source material is distributed; a responsible agent, by name and/or position and phone number, of the general licensee to whom the material was sent; and the type, physical form, and quantity of source material transferred; and

(iii) The total quantity of each type and physical form of source material transferred in the reporting period to all such generally licensed recipients.

2. File a report with each responsible Agreement State agency or NRC that identifies all persons, operating under provisions equivalent to this Chapter, to whom greater than 50 grams (0.11 lb) of source material has been transferred within a single calendar quarter. The report shall include the following information specific to those transfers made to the Agreement State or NRC being reported to:

(i) The name, address, and license number of the person who transferred the source material; and

(ii) The name and address of the general licensee to whom source material was distributed; a responsible agent, by name and/or position and phone number, of the general licensee to whom the material was sent; and the type, physical form, and quantity of source material transferred.

(iii) The total quantity of each type and physical form of source material transferred in the reporting period to all such generally licensed recipients within the Agreement State or NRC.

3. Submit each report by January 31 of each year covering all transfers for the previous calendar year. If no transfers were made to persons generally licensed under 10 CFR Part 40.22 or equivalent Agreement State or NRC provisions during the current period, a report shall be submitted indicating so. If no transfers have been made to general

licensees in a particular Agreement State or falling under the jurisdiction of the NRC, during the reporting period, this information shall be reported to the NRC or responsible Agreement State agency upon request of the agency or NRC.

(l) Each person licensed under 391-3-17-.02 shall maintain all information that supports the reports required by this subparagraph concerning each transfer to a general licensee for a period of 1 year after the event is included in a report to the Division, Commission or to an Agreement State agency.

(m) Each person licensed under 391-3-17-.02(5)(h) shall provide the information specified in this paragraph to each person to whom source material is transferred for use under 391-3-17-.02(5)(b). This information must be transferred before the source material is transferred for the first time in each calendar year to the particular recipient. The required information includes:

1. A copy of 391-3-17-.02(5)(b) and .02(19) or relevant equivalent regulations of the NRC or an Agreement State.

2. Appropriate radiation safety precautions and instructions relating to handling, use, storage, and disposal of the material.

(6) **General Licenses - Radioactive Materials Other Than Source Material.** Each general license issued under (6) has its own specific conditions and requirements.

(a) Ownership of Radioactive Material. A general license is hereby issued to own radioactive material without regard to quantity. Notwithstanding any other provisions of this Rule, this general license does not authorize the manufacture, production, transfer, receipt, possession, or use of radioactive material.

(b) [Reserved]

(c) Certain Detecting, Measuring, Gauging, or Controlling Devices and Certain Devices for Producing Light or an Ionizing Atmosphere.

1. A general license is hereby issued to commercial and industrial firms and to research, educational and medical institutions, individuals in the conduct of their business, and State or local government agencies to own, receive, acquire, possess, use, or transfer, in accordance with the provisions of (6)(c)2., 3., and 4., radioactive material, excluding special nuclear material, contained in devices designed and manufactured for the purpose of detecting, measuring, gauging, or controlling thickness, density, level, interface location, radiation, leakage, or qualitative or quantitative chemical composition, or for producing light or an ionized atmosphere.

2. The general license in (6)(c)1. applies only to radioactive material contained in devices which have been manufactured or initially transferred and labeled in accordance with the specifications contained:

(i) in a specific license issued by the Director pursuant to (11)(d); or

(ii) in accordance with the specifications contained in a specific license issued by the U.S. Nuclear Regulatory Commission or an Agreement State, which authorizes distribution of devices to persons generally licensed by the U.S. Nuclear Regulatory Commission or an Agreement State.

The devices must have been received from one of the specific licensees described in (i) or (ii) above or through a transfer made under (6)(c)3.(viii).

Note: Regulations under the Federal Food, Drug, and Cosmetic Act authorizing the use of radioactive control devices in food production require certain additional labeling thereon which is found in Section 179.21 of the Code of Federal Regulations, Title 21.

3. Any person who owns, receives, acquires, possesses, uses, or transfers radioactive material in a device pursuant to the general license in (6)(c)1.:

(i) Shall assure that all labels affixed to the device at the time of receipt, and bearing a statement that removal of the label is prohibited, are maintained thereon and shall comply with all instructions and precautions provided by such labels;

(ii) Shall assure that the device is tested for leakage of radioactive material and proper operation of the on/off mechanism and indicator, if any, at no longer than six-month intervals or at such other intervals as are specified in the label; however,

(I) Devices containing only krypton need not be tested for leakage of radioactive material, and

(II) Devices containing only tritium or not more than 100 microcuries (3.7 MBq) of other beta- and/or gamma-emitting material or ten microcuries (0.37 MBq) of alpha-emitting material and devices held in storage in the original shipping container prior to initial installation need not be tested for any purpose;

(iii) Shall assure that the tests required by (6)(c)3.(ii) and other testing, installation, servicing, and removal from installation involving the radioactive material, its shielding or containment, are performed:

(I) In accordance with the instructions provided by the labels, or

(II) By a person holding an applicable specific license from the Director, the U.S. Nuclear Regulatory Commission or an Agreement State to perform such activities;

(iv) Shall maintain records showing compliance with the requirements of (6)(c)3.(ii) and (iii). The records shall show the results of tests. The records also shall show the dates of performance of, and the names of persons performing, testing, installation, servicing, and removal from installation concerning the radioactive material, its shielding, or containment. Records of tests for leakage of radioactive material required by (6)(c)3.(ii) shall be maintained for three years after the next required leak test is performed. Records of tests of the on/off mechanism and indicator required by (6)(c)3.(ii) shall be maintained for three years after the next required test of the on/off mechanism and indicator is performed. Records which are required by (6)(c)3.(iii) shall be maintained for three years. In case of transfer or disposal, records required by this paragraph (iv) shall be maintained for three years after the transfer or disposal.

(v) Shall, upon the occurrence of a failure of or damage to, or any indication of a possible failure of or damage to, the shielding of the radioactive material or the on/off mechanism or indicator, or upon the detection of 0.005 microcurie (185 Bq) or more removable radioactive material, immediately suspend operation of the device. The device may not be operated until it has been repaired by the manufacturer or other person holding an applicable specific license from the Director, the U.S. Nuclear Regulatory Commission or an Agreement State to repair such devices. The device and any radioactive material from the device may only be disposed of by transfer to a person authorized by an applicable specific license to receive the radioactive material contained in the device or as otherwise approved by the Division. A report containing a brief description of the event and the remedial action taken; and, in the case of detection of 0.005 microcurie (185 Bq) or more of removable radioactive material, or failure or damage to a source likely to result in contamination of the premises or environs, a plan for ensuring that the premises and environs are acceptable for unrestricted use, must be furnished to the Division within 30 days. Under these circumstances, the criteria set out in Rule .03(7)(b) "Radiological requirements for unrestricted use" may be applicable, as determined by the Division on a case-by-case basis;

(vi) Shall not abandon the device containing radioactive material;

(vii) (I) Shall transfer or dispose of the device containing radioactive material only by export as provided in (6)(c)3.(xiv), by transfer to another general licensee as specified in (6)(c)3.(viii) or equivalent regulations of the NRC or another Agreement State, by transfer to a specific licensee of the Director, the U.S. Nuclear Regulatory Commission or an Agreement State whose specific license authorizes him to receive the device or authorizes him to collect waste, or as otherwise approved under (6)(c)(3)(vii)(III).

(II) Within 30 days after transfer of a device to a specific licensee or export, the licensee shall furnish to the Division a report containing identification of the device by manufacturer's (or initial transferor's) name, model number, serial

number, the name and address and license number (license number not applicable if exported) of the person receiving the device and the date of transfer;

(III) If transfer is to any other licensee not identified in (vii)(I), the licensee shall obtain written approval from the Division before transferring the device to any other person; however, a holder of a specific license may transfer a device for possession and use under its own specific license without prior approval, if, the holder:

I. Verifies that the specific license authorizes the possession and use, or applies for and obtains an amendment to the license authorizing the possession and use;

II. Removes, alters, covers, or clearly and unambiguously augments the existing label (otherwise required by Rule .02(6)(c)3.(i) so that the device is labeled in compliance with Rule .03(12)(d); however the manufacturer, model number, and serial number must be retained;

III. Obtains the manufacturer's or initial transferor's information concerning maintenance that would be applicable under the specific license (such as leak testing procedures); and

IV. Reports the transfer under Rule .02(6)(c)3.(vii).

(viii) Shall transfer the device to another general licensee only:

(I) Where the device remains in use at a particular location. In such case the transferor shall give the transferee a copy of this Regulation and any safety documents identified in the label on the device. Within 30 days of the transfer, report to the Division the manufacturer's (or initial transferor's) name, model number, serial number of the device transferred, the name and mailing address for place of use of the transferee, and the name, title and telephone number of a person identified by the transferee as the individual responsible for having knowledge of and authority to take actions to ensure compliance with the appropriate regulations and requirements; or

(II) Where the device is held in storage by an intermediate person in the original shipping container at its intended location of use prior to initial use by a general licensee;

(ix) Shall comply with the provisions of Rule .03(15) of this Chapter for reporting radiation incidents, or the theft or loss of licensed material, but shall be exempt from the other requirements contained in Rules .03 and .07 of this Chapter;

(x) Shall appoint an individual responsible for having knowledge of the appropriate regulations and requirements and the authority for taking required actions to comply with appropriate regulations and requirements. The general licensee, through this individual, shall ensure the day-to-day compliance with appropriate regulations and requirements. This appointment does not relieve the general licensee of any of its responsibility in this regard;

(xi) (I) Shall register, in accordance with paragraphs (6)(c)3.(xi)(II) and (III), devices containing at least 10 mCi (370 Mbq) of cesium-137, 0.1 mCi (3.7 MBq) of strontium-90, 1 mCi (37 MBq) of cobalt-60, 0.1 mCi (3.7 MBq) of radium 226, or 1 mCi (37 MBq) of americium-241 or any other transuranic [i.e., element with atomic number greater than uranium (92)], based on the activity indicated on the label. Each address for a location of use, as described under paragraph 3.(xi)(III)IV. of this section, represents a separate general licensee and requires a separate registration.

(II) If in possession of a device meeting the criteria of paragraph (6)(c)3.(xi)(I), shall register these devices annually with the Division. Registration must be done by verifying, correcting, and/or adding to the information provided in a request for registration received from the Division. The registration information must be submitted to the Division within 30 days of the date of the request for registration or as otherwise indicated in the request. In addition, a general licensee holding devices meeting the criteria of (6)(c)3.(xi)(I) is subject to the bankruptcy notification requirement in (13)(e) of this rule.

(III) In registering devices, the general licensee shall furnish the following information and any other information specifically requested by the Division;

I. Name and mailing address of the general licensee.

II. Information about each device: the manufacturer (or initial transferor), model number, serial number, the radioisotope and activity (as indicated on the label).

III. Name, title, and telephone number of the responsible person designated as a representative of the general licensee under (6)(c)3.(x).

IV. Address or location at which the device(s) are used and/or stored.

V. Certification by the responsible representative of the general licensee that the information concerning the device(s) has been verified through a physical inventory and checking of label information.

VI. Certification by the responsible representative of the general licensee that they are aware of the requirements of the general license.

(IV) Persons generally licensed by the NRC or an Agreement State are not eligible for reciprocity.

(xii) Shall report changes to the mailing address for the location of use (including change in name of general licensee) to the Division within 30 days of the effective date of the change;

(xiii) May not hold devices that are not in use for longer than two years. If devices with shutters are not being used, the shutter must be locked in the closed position. The testing required by (6)(c)3.(ii) need not be performed during the period of storage only. However, when devices are put back into service or transferred to another person, and have not been tested within the required test interval, they must be tested for leakage before use or transfer and the shutter tested before use. Devices kept in standby for future use are excluded from the two-year time limit if the general licensee performs quarterly physical inventories of these devices while they are in standby.

(xiv) Shall not export the device containing byproduct material except in accordance with the requirements of 10 CFR Part 110.

(xv) Shall respond to written requests from the Program to provide information relating to the general license within 30 calendar days of the date of the request, or other time specified in the request. If the general licensee cannot provide the requested information within the allotted time, it shall, within that same time period, request a longer period to supply the information by providing the Program a written justification for the request.

4. The general license in (6)(c)1. does not authorize the manufacture or import of devices containing radioactive material.

5. The general license provided in (6)(c)1. is subject to the provisions of (13), (18), and (19) of this rule, of paragraphs (4), (5), (6), (7), (8), (9) and (10) of Rule .01, and of Rule .06 of this Chapter.

(d) Luminous Safety Devices for Aircraft.

1. A general license is hereby issued to own, receive, acquire, possess, and use tritium or promethium-147 contained in luminous safety devices for use in aircraft, provided:

(i) Each device contains not more than ten Curies (370 GBq) of tritium or 300 millicuries (11.1 GBq) of promethium-147; and

(ii) Each device has been manufactured, assembled, or imported in accordance with a specific license issued by the U.S. Nuclear Regulatory Commission, or each device has been manufactured or assembled in accordance with the specifications contained in a specific license issued by the Director or any Agreement State to the manufacturer or assembler of such device pursuant to licensing requirements equivalent to those in Section 32.53 of 10 CFR, Part 32, of the regulations of the U.S. Nuclear Regulatory Commission.

2. Persons who own, receive, acquire, possess, or use luminous safety devices pursuant to the general license in (6)(d) are exempt from the requirements of Rules .03 and .07 of this Chapter, except that they shall comply with the provisions of Rule .03(15) of this Chapter.

3. This general license does not authorize the manufacture, assembly, or repair of luminous safety devices containing tritium or promethium-147.

4. This general license does not authorize the ownership, receipt, acquisition, possession, or use of promethium-147 contained in instrument dials.

5. This general license is subject to the provisions of paragraphs (13), (18), and (19) of this Rule, of paragraphs (4), (5), (6), (7), (8), (9) and (10) of Rule .01, and of Rule .06 of this Chapter.

(e) Ice-Detection Devices.

1. A general license is hereby issued to own, receive, acquire, possess, use, and transfer strontium-90 contained in ice-detection devices, provided each device contains not more than 50 microcuries (1.85 MBq) of strontium-90 and each device has been manufactured or imported in accordance with a specific license issued by the U.S. Nuclear Regulatory Commission or each device has been manufactured in accordance with the specifications contained in a specific license issued by the Director or any Agreement State to the manufacturer of such device pursuant to licensing requirements equivalent to those in Section 32.61 of 10 CFR, Part 32, of the regulations of the U.S. Nuclear Regulatory Commission.

2. Persons who own, receive, acquire, possess, use, or transfer strontium-90 contained in ice-detection devices pursuant to the general license in (6)(e)1.:

(i) Shall, upon occurrence of visually observable damage, such as a bend or crack or discoloration from overheating to the device, discontinue use of the device until it has been inspected, tested for leakage, and repaired by a person holding a specific license or equivalent licensing document from the U.S. Nuclear Regulatory Commission or an Agreement State to manufacture or service such devices; or shall dispose of the device pursuant to the provisions of Rule .03(13) of this Chapter;

(ii) Shall assure that all labels affixed to the device at the time of receipt and which bear a statement that prohibits removal of the labels are maintained thereon; and

(iii) Are exempt from the requirements of Rules .03 and .07 of this Chapter except that such persons shall comply with the provisions of Rule .03(13) and (15) of this Chapter.

3. This general license does not authorize the manufacture, assembly, disassembly, or repair of strontium-90 in ice-detection devices.

4. This general license is subject to the provisions of paragraphs (13), (18), and (19) of this Rule, of paragraphs (4), (5), (6), (7), (8), (9) and (10) of Rule .01, and of Rule .06 of this Chapter.

(f) Calibration and Reference Sources.

1. A general license is hereby issued to those persons listed below to own, receive, acquire, possess, use, and transfer, in accordance with the provisions of (6)(f)4. and 5., americium-241 in the form of calibration or reference sources:

(i) Any person who holds a specific license issued by the Director which authorizes him to receive, possess, use, and transfer radioactive material; and

(ii) Any person who holds a specific license issued by the U.S. Nuclear Regulatory Commission which authorizes him to receive, possess, use, and transfer special nuclear material.

2. A general license is hereby issued to own, receive, possess, use, and transfer plutonium in the form of calibration or reference sources in accordance with the provisions of (6)(f)4. and 5. to any person who holds a specific license issued by the Director which authorizes him to receive, possess, use, and transfer radioactive material.

3. A general license is hereby issued to own, receive, possess, use, and transfer radium-226 in the form of calibration or reference sources in accordance with the provisions of (6)(f)4. and 5. to any person who holds a specific license issued by the Director which authorizes him to receive, possess, use, and transfer radioactive material.

4. The general licenses in (6)(f)1., 2., and 3. apply only to calibration or reference sources which have been manufactured in accordance with the specifications contained in a specific license issued to the manufacturer or importer of the sources by the U.S. Nuclear Regulatory Commission pursuant to Section 32.57 of 10 CFR, Part 32, or Section 70.39 of 10 CFR, Part 70, or which have been manufactured in accordance with the specifications contained in a specific license issued to the manufacturer by the Director or any Agreement State pursuant to licensing requirements equivalent to those contained in Section 32.57 of 10 CFR, Part 32, or Section 70.39 of 10 CFR, Part 70, of the regulations of the U.S. Nuclear Regulatory Commission.

5. The general licenses provided in (6)(f)1., 2., and 3. are subject to the provisions of paragraphs (13), (18), and (19) of this Rule, of paragraphs (4), (5), (6), (7), (8), (9) and (10) of Rule .01, and of Rules .03, .06, and .07 of this Chapter. In addition, persons who own, receive, acquire, possess, use, or transfer one or more calibration or reference sources pursuant to these general licenses:

(i) Shall not possess at any one time, at any one location of storage or use, more than five microcuries (185 kBq) of americium-241, five microcuries (185 kBq) of plutonium, or five microcuries (185 kBq) of radium-226 in such sources;

(ii) Shall not receive, possess, use, or transfer such source unless the source, or the storage container, bears a label that includes the following statement, or a substantially similar statement that contains the information called for, as appropriate:

(I) The receipt, possession, use, and transfer of this source, Model _____, Serial No. _____, are subject to a general license and the regulations of the U.S. Nuclear Regulatory Commission or of a State with which the U.S. Nuclear Regulatory Commission has entered into an agreement for the exercise of regulatory authority. Do not remove this label.

CAUTION - RADIOACTIVE MATERIAL -

THIS SOURCE CONTAINS (AMERICIUM-241)*

(PLUTONIUM)*. DO NOT TOUCH RADIOACTIVE PORTION OF THIS SOURCE.

_____

(NAME OF MANUFACTURER OR IMPORTER)

*Note: Showing only the name of the appropriate material, i.e., either plutonium or americium.

(iii) Shall not transfer, abandon, or dispose of such source except by transfer to a person authorized by a license from the Director, the U.S. Nuclear Regulatory Commission or an Agreement State to receive the source;

(iv) Shall store such source, except when the source is being used, in a closed container adequately designed and constructed to contain americium-241, plutonium, or radium-226 which might otherwise escape during storage; and

(v) Shall not use such source for any purpose other than the calibration of radiation detectors or the standardization of other sources.

6. These general licenses do not authorize the manufacture of calibration or reference sources containing americium-241, plutonium, or radium-226.

(g) General License for Use of Radioactive Material for Certain In Vitro Clinical or Laboratory Testing.

Note: The new drug provisions of the Federal Food, Drug, and Cosmetic Act also govern the availability and use of any specified diagnostic drugs in interstate commerce.

1. A general license is hereby issued to any physician, veterinarian in the practice of veterinary medicine, clinical laboratory, or hospital to receive, acquire, possess, transfer, or use, for any of the following radioactive material, in accordance with the provisions of (6)(g) 2., 3., 4., 5., and 6., the following radioactive materials in prepackaged units for use in in-vitro clinical or laboratory tests not involving internal or external administration of radioactive material, or the radiation therefrom, to human beings or animals:

(i) Iodine-125, in units not exceeding ten microcuries (370 kBq) each.

(ii) Iodine-131, in units not exceeding ten microcuries (370 kBq) each.

(iii) Carbon-14, in units not exceeding ten microcuries (370 kBq) each.

(iv) Hydrogen-3 (tritium), in units not exceeding 50 microcuries (1.85 MBq) each.

(v) Iron-59, in units not exceeding 20 microcuries (740 kBq) each.

(vi) Cobalt-57, in units not exceeding ten microcuries (370 kBq) each.

(vii) Selenium-75, in units not exceeding ten microcuries (370 kBq) each.

(viii) Mock Iodine-125 reference or calibration sources, in units not exceeding 0.05 microcurie (1.85 kBq) of iodine-129 and 0.005 microcurie (185 Bq) of americium-241 each.

2. No person shall receive, acquire, possess, use, or transfer radioactive material pursuant to the general license established by (6)(g)1. until he has filed Division form, "Certificate - In-Vitro Testing with Radioactive Material Under General License" with the Division and received from the Division a validated copy of this form with certification number assigned or until he has been authorized pursuant to (9)(e)3. to use radioactive material under the general license in (6)(g). The physician, veterinarian in the practice of veterinary medicine, clinical laboratory, or hospital shall furnish on the form the following information and such other information as may be required by that form:

(i) Name and address of the physician, veterinarian in the practice of veterinary medicine, clinical laboratory, or hospital;

(ii) The location of use; and

(iii) A statement that the physician, veterinarian in the practice of veterinary medicine, clinical laboratory, or hospital has appropriate radiation measuring instruments to carry out in vitro clinical or laboratory tests with radioactive material as authorized under the general license in (6)(g)1. and that such tests will be performed only by personnel competent in the use of such instruments and in the handling of the radioactive material.

3. A person who receives, acquires, possesses, or uses radioactive material pursuant to the general license established by (6)(g)1. shall comply with the following:

(i) The general licensee shall not possess at any one time, pursuant to the general license in (6)(g)1., at any one location of storage or use, a total amount of iodine-125, iodine-131, selenium-75, iron-59, and/or cobalt-57 in excess of 200 microcuries (7.4 MBq).

(ii) The general licensee shall store the radioactive material, until used, in the original shipping container or in a container providing the equivalent amount of radiation protection.

(iii) The general licensee shall use the radioactive material only as authorized by (6)(g)1.

(iv) The general licensee shall not transfer the radioactive material to a person who is not authorized to receive it pursuant to a license issued by the Director, the U.S. Nuclear Regulatory Commission or any Agreement State, nor transfer the radioactive material in any manner other than in the unopened, labeled shipping container as received from the supplier.

(v) The general licensee shall dispose of the Mock Iodine-125 reference or calibration sources described in (6)(g)1.(viii) as required by Rule .03(13) of this Chapter.

4. The general licensee shall not receive, acquire, possess, or use radioactive material pursuant to (6)(g)1.:

(i) Except as prepackaged units which are labeled in accordance with the provisions of an applicable specific license issued pursuant to (11)(g) or in accordance with the provisions of a specific license issued by the U.S. Nuclear Regulatory Commission or any Agreement State which authorizes the manufacture and distribution of iodine-125, iodine-131, carbon-14, hydrogen-3 (tritium), iron-59, selenium-75, cobalt-57, or Mock Iodine-125 to persons generally licensed under (6)(g) or its equivalent, and

(ii) Unless the following statement, or a statement which contains the information called for, appears on a label affixed to each prepackaged unit or appears in a leaflet or brochure which accompanies the package:

(I) This radioactive material shall be received, acquired, possessed, and used only by physicians, veterinarians in the practice of veterinary medicine, clinical laboratories, or hospitals and only for in vitro clinical or laboratory tests not involving internal or external administration of the material, or the radiation therefrom, to human beings or animals. Its receipt, acquisition, possession, use, and transfer are subject to the regulations and a general license of the U.S. Nuclear Regulatory Commission or of a State with which the Commission has entered into an agreement for the exercise of regulatory authority.

_____

(NAME OF MANUFACTURER)

5. The physician, veterinarian in the practice of veterinary medicine, clinical laboratory, or hospital possessing or using radioactive material under the general license of (6)(g)1. shall report in writing to the Division any changes in the information furnished by him in the "Certificate - In Vitro Testing with Radioactive Material Under General License". The report shall be furnished within 30 days after the effective date of such change.

6. Any person using radioactive material pursuant to the general license of (6)(g)1. is exempt from the requirements of Rules .03 and .07 of this Chapter with respect to radioactive material covered by that general license, except that such persons using the Mock Iodine-125 described in (6)(g)1.(viii) shall comply with the provisions of (13) and (15) of Rule .03 of this Chapter.

(7) **Filing Application for Specific Licenses.**

(a) Applications for specific licenses shall be filed on forms supplied by the Georgia Department of Natural Resources, Environmental Protection Division, Radioactive Materials Program, 4244 International Parkway, Suite 120, Atlanta, Georgia, 30354, or current mailing address. The application shall set forth all applicable information called for by the form.

(b) The Division may at any time after the filing of the original application, and before the expiration of the license, require further statements in order to enable the Director to determine whether the application should be granted or denied or whether a license should be modified or revoked.

(c) Each application shall be signed by the applicant or person duly authorized to act for and on his behalf.

(d) An application for a license may include a request for a license authorizing one or more activities.

(e) In his application, the applicant may incorporate, by reference, information contained in previous applications, statements, or reports filed with the Division, provided that such references are clear and specific by page, paragraph, and date.

(f) Applications and documents submitted to the Division may be made available for public inspection except those documents described in Rule .01(5)(c) which may be withheld from public inspection or discovery.

(g) The Division may verify information contained in applications and secure additional information deemed necessary to make a reasonable determination as to whether to issue a license and whether special conditions should be attached thereto by visiting the facility or location where radioactive materials would be possessed, or used, and by discussing details of proposed possession or use of the radioactive materials with the applicant or the applicant's designated representatives.

(h) Emergency Plan for Large Quantity Users.

1. Each application to possess radioactive materials in unsealed form, on foils or plated sources, or sealed in glass in excess of the quantities specified in (21)(e), Schedule E, must contain either:

(i) An evaluation showing that the maximum dose to a person offsite due to a release of radioactive materials would not exceed one rem (.01 Sv) effective dose equivalent or five rems (.05 Sv) to the thyroid; or

(ii) An emergency plan for responding to a release of radioactive material.

2. One or more of the following factors may be used to support an evaluation submitted under (7)(h)1.(i):

(i) The radioactive material is physically separated so that only a portion could be involved in an accident;

(ii) All or part of the radioactive material is not subject to release during an accident because of the way it is stored or packaged;

(iii) The release fraction in the respirable size range would be lower than the release fraction shown in (21)(e), Schedule E, due to the chemical or physical form of the material;

(iv) The solubility of the radioactive material would reduce the dose received;

(v) Facility design or engineered safety features in the facility would cause the release fraction to be lower than shown in (21)(e), Schedule E;

(vi) Operating restrictions or procedures would prevent a release fraction as large as that shown in (21)(e), Schedule E; or

(vii) Other factors appropriate for the specific facility.

3. An emergency plan for responding to a release of radioactive material submitted under (7)(h)1.(ii) must include the following information:

(i) Facility description - a brief description of the licensee's facility and the area near the site.

(ii) Types of accidents - an identification of each type of radioactive materials accident for which protective actions may be needed.

(iii) Classification of accidents - a classification system for classifying accidents as alerts or site area emergencies.

(iv) Detection of accidents - identification of the means of detecting each type of accident in a timely manner.

(v) Mitigation of consequences - a brief description of the means and equipment for mitigating the consequences of each type of accident, including those provided to protect workers on site, and a description of the program for maintaining the equipment.

(vi) Assessment of releases - a brief description of the methods and equipment to assess releases of radioactive materials.

(vii) Responsibilities - a brief description of the responsibilities of licensee personnel should an accident occur, including identification of personnel responsible for promptly notifying offsite response organizations and the Division; also responsibilities for developing, maintaining, and updating the plan.

(viii) Notification and coordination - a commitment to and a brief description of the means to promptly notify offsite response organizations and request offsite assistance, including medical assistance for the treatment of contaminated injured onsite workers when appropriate. A control point must be established to prevent spreading of contamination during recovery activities. The notification and coordination must be planned so that unavailability of some personnel, parts of the facility, and some equipment will not prevent the notification and coordination. The licensee shall also commit to notify the Division immediately after notification of the appropriate offsite response organizations and not later than one hour after the licensee declares an emergency.

Note: This Chapter does not supersede or release licensees from complying with the requirements under the Emergency Planning and Community Right-to-Know Act of 1986, Title III, Pub. L-99-499 or other State or Federal reporting requirements.

(ix) Information to be communicated - a brief description of the types of information on facility status, radioactive releases, and recommended protective actions, if necessary, to be given to offsite response organizations and to the Division.

(x) Training - a brief description of the frequency, performance objectives, and plans for the training that the licensee will provide workers on how to respond to an emergency, including any special instruction and orientation tours the licensee would offer to fire, police, medical, and other emergency personnel. The training shall familiarize personnel with site-specific emergency procedures. Also, the training shall thoroughly prepare site personnel for their responsibilities in the event of accident scenarios postulated as most probable for the specific site, including the use of team training for such scenarios.

(xi) Safe shutdown - a brief description of the means of restoring the facility to a safe condition after an accident.

(xii) Exercises - provisions for conducting quarterly communications checks with offsite response organizations and biennial onsite exercises to test response to simulated emergencies. Quarterly communications checks with offsite response organizations must include the check and update of all necessary telephone numbers. The licensee shall invite offsite response organizations to participate in the biennial exercises. Participation of offsite response organizations in biennial exercises, although recommended, is not required. Exercises must use accident scenarios postulated as most probable for the specific site, and the scenarios shall not be known to most exercise participants. The licensee shall critique each exercise using individuals not having direct implementation responsibility for the plan. Critiques of exercises must evaluate the appropriateness of the plan, emergency procedures, facilities, equipment, training of personnel, and the overall effectiveness of the response. These exercises must be documented and deficiencies found by the critiques must be corrected.

(xiii) Hazardous chemicals - a certification that the applicant has met its responsibilities under the Emergency Planning and Community Right-to-Know Act of 1986, Title III, Pub. L. 99-499, if applicable to the applicant's activities at the proposed place of use of the radioactive material.

4. The licensee shall allow the offsite response organizations expected to respond in case of an accident 60 days to comment on the licensee's emergency plan before submitting it to the Division. The licensee shall provide any comments received within the 60 days to the Division with the emergency plan.

(i) Except as provided in paragraphs 2., 3. and 4. of this section, an application for a specific license to use radioactive material in the form of a sealed source or in a device that contains the sealed source must:

1. Identify the source or device by manufacturer and model number as registered with the Nuclear Regulatory Commission, an Agreement State, or for a source or a device containing radium-226 or accelerator produced radioactive material with a State under provisions comparable to Section 32.210 of 10 CFR Part 32.

2. For sources or devices manufactured before October 23, 2012, that are not registered with the Commission under Section 32.210 of 10 CFR, Part 32 or with an Agreement State, and for which the applicant is unable to provide all categories of information specified in Section 32.210(c) of 10 CFR, Part 32, the application must include:

(i) All available information identified in Section 32.210(c) of 10 CFR, Part 32 concerning the source, and, if applicable, the device; and

(ii) Sufficient additional information to demonstrate that there is reasonable assurance that the radiation safety properties of the source or device are adequate to protect health and minimize danger to life and property. Such information must include a description of the source or device, a description of radiation safety features, the intended use and associated operating experience, and the results of a recent leak test.

3. For sealed sources and devices allowed to be distributed without registration of safety information in accordance with Section 32.210(g)(1) of 10 CFR, Part 32, the applicant may supply only the manufacturer, model number, and radionuclide and quantity.

4. If it is not feasible to identify each sealed source and device individually, the applicant may propose constraints on the number and type of sealed sources and devices to be used and the conditions under which they will be used, in lieu of identifying each sealed source and device.

(j) An application from a medical facility, educational institution, or Federal facility to produce Positron Emission Tomography (PET) radioactive drugs for noncommercial transfer to licensees in its consortium authorized for medical use under Rule .05 or equivalent Nuclear Regulatory Commission or Agreement State requirements shall include:

1. A request for authorization for the production of PET radionuclides or evidence of an existing license issued under Rule .02, Nuclear Regulatory Commission or of this chapter or Agreement State requirements for a PET radionuclide production facility within its consortium from which it receives PET radionuclides.

2. Evidence that the applicant is qualified to produce radioactive drugs for medical use by meeting one of the criteria in .02(11)(i)2. of this Rule.

3. Identification of individual(s) authorized to prepare the PET radioactive drugs if the applicant is a pharmacy, and documentation that each individual meets the requirements of an authorized nuclear pharmacist as specified in .02(11)(i)5. of this Rule.

4. Information identified in Rule .02(11)(i)3. of this Rule on the PET drugs to be noncommercially transferred to members of its consortium.

(8) **General Requirements for the Issuance of Specific Licenses.** A license application will be approved if the Division determines the following:

(a) That the applicant is qualified by reason of training and experience to use the material in question for the purpose requested in accordance with this Chapter in such a manner as to minimize danger to public health and safety or property;

(b) That the applicant's proposed equipment, facilities, and procedures are adequate to minimize danger to public health and safety or property;

(c) That the issuance of the license will not be inimical to the health and safety of the public; and

(d) That the applicant satisfies any applicable special requirements in (9), (10), and (11).

(e) Bonding Requirements.

1. Pursuant to Georgia Laws 1979, pp. 1059, 1060, a specific license will be issued to a Major Processor as defined in Rule .01(2) of this Chapter only if the applicant has posted a surety bond with, and made payable to, the Director, Environmental Protection Division, Department of Natural Resources, to ensure the protection of the public health and safety in the event of abandonment, insolvency, or other inability of the licensee to meet the requirements of the Act and this Chapter.

(i) The bond provided shall be not less than $100,000.00, nor more than $5,000,000.00.

(ii) The exact amount of the bond shall be determined by the Director, Environmental Protection Division, and shall be based on the probable extent of contamination, the amount of possible property damage, the costs of removal and disposal of sources of radiation used by the licensee, and the costs of reclamation of the property in the event of abandonment, insolvency, or other inability of the licensee to meet the requirements of the Act and this Chapter, including performing such services to the satisfaction of the Division.

2. Persons licensed at the time the bonding requirements of this Chapter became effective, and upon notice by the Division, must, within a period of 90 days following such notice, provide the bond required by (8)(e)1. as a condition for continuation of the license.

(f) Environmental Report, Commencement of Construction. In the case of an application for a license to receive and possess radioactive material for the conduct of any activity which the Division determines will significantly affect the quality of the environment, commencement of construction of the plant or facility in which the activity will be conducted shall not begin until the Director has concluded, after weighing the environmental, economic, technical, and other benefits against environmental costs and considering available alternatives, that the action called for is the issuance of the proposed license, with any appropriate conditions to protect environmental values. Commencement of construction prior to such conclusion shall be grounds for denial of a license to receive and possess radioactive material in such plant or facility. As used in this paragraph, the term "commencement of construction" means any clearing of land, excavation, or other substantial action that would adversely affect the environment of a site. The term does not mean site exploration, necessary borings to determine foundation conditions, or other preconstruction monitoring or testing to establish background information related to the suitability of the site or the protection of environmental values.

(g) Financial assurance and record-keeping for decommissioning.

1. The following are required to furnish financial assurance and record-keeping for decommissioning:

(i) Each applicant for a specific license authorizing the possession and use of unsealed radioactive material of half-life greater than 120 days and in quantities exceeding 10^5 times the applicable quantities set forth in Schedule F shall submit a decommissioning funding plan as described in subparagraphs (8)(g)5 and (8)(g)6. The decommissioning funding plan must also be submitted when a combination of isotopes is involved if R divided by 10^5 is greater than 1 (unity Rule), where R is defined here as the sum of the ratios of the quantity of each isotope to the applicable value in Schedule F.

(ii) Each applicant for a specific license authorizing the possession and use of sealed sources or plated foils of half-life greater than 120 days and in quantities exceeding 10^{12} times the applicable quantities set forth in Schedule F shall submit a decommissioning funding plan as described in subparagraphs (8)(g)5 and (8)(g)6. The decommissioning funding plan must also be submitted when a combination of isotopes is involved if R divided by

10^{12} is greater than 1 (unity Rule), where R is defined here as the sum of the ratios of the quantity of each isotope to the applicable value in Schedule F.

2. Each applicant for a specific license authorizing the possession and use of radioactive material of half-life greater than 120 days and in quantities specified in subparagraphs (8)(g)4. shall either:

(i) Submit a decommissioning funding plan as described in subparagraphs (8)(g)5 and (8)(g)6.; or

(ii) Submit a certification that financial assurance for decommissioning has been provided in the amount prescribed by (8)(g)4. using one of the methods described in (8)(g)7. For an applicant, this certification may state that the appropriate assurance will be obtained after the application has been approved and the license issued but prior to the receipt of licensed material. As part of the certification, a copy of the financial instrument obtained to satisfy the requirements of (8)(g)7. is to be submitted to the Division. If the applicant defers execution of the financial instrument until after the license has been issued, a signed original of the financial instrument obtained to satisfy the requirements (8)(g)7. must be submitted to the Division before the receipt of licensed material. If the applicant does not defer execution of the financial instrument, the applicant shall submit to the Division, as part of the certification a signed original of the financial instrument obtained to satisfy the requirements of (8)(g)7.

3. (i) Each holder of a specific license issued on or after January 1, 1993, which is of a type described in (8)(g)1. or 2. shall provide financial assurance for decommissioning in accordance with the criteria set forth in this Rule.

(ii) Each holder of a specific license issued before January 1, 1993, which is of a type described in (8)(g)1. shall submit, on or before January 1, 1993, a decommissioning funding plan or a certification of financial assurance for decommissioning in an amount at least equal to $1,125,000 in accordance with the criteria set forth in this Rule. If the licensee submits the certification of financial assurance rather than a decommissioning funding plan at this time, the licensee shall include a decommissioning funding plan in any application for license renewal.

(iii) Each holder of a specific license issued before January 1, 1993, and of a type described in (8)(g)2. shall submit, on or before January 1, 1993, a certification of financial assurance for decommissioning or a decommissioning funding plan in accordance with the criteria set forth in this .02(8)(g).

(iv) Waste collectors and waste processors shall provide financial assurance in an amount based on a decommissioning funding plan as described in subparagraphs .02(8)(g)5 and (8)(g)6. The decommissioning funding plan must also include the cost of disposal of the maximum amount (curies) of radioactive material permitted by the license, and the cost of disposal of the maximum quantity, by volume, of radioactive material that could be present at the licensee's facility at any time, in addition to the cost to remediate the licensee's site to meet the license termination requirements in .02(18).

4. Table of required amounts of financial assurance for decommissioning by quantity of material.

Greater than 10^4 but less than or equal to 10^5 times the applicable quantities of Schedule F in unsealed form. (For a combination of isotopes, if R, as defined in (8)(g), divided by 10^4 is greater than 1 but R divided by 10^5 is less than or equal to 1): $1,125,000.

Greater than 10^3 but less than or equal to 10^4 times the applicable quantities of Schedule F in unsealed form. (For a combination of isotopes, if R, as defined in (8)(g), divided by 10^3 is greater than 1 but R divided by 10^4 is less than or equal to 1): $225,000.

Greater than 10^{10} times the applicable quantities of Schedule F in sealed sources or plated foils. (For a combination of isotopes, if R, as defined in (8)(g), divided by 10^{10} is greater than 1): $113,000.

5. Each decommissioning funding plan must be submitted for review and approval and must contain:

(i) A detailed cost estimate for decommissioning, in an amount reflecting:

(I) The cost of an independent contractor to perform all decommissioning activities;

(II) The cost of meeting the .03(7)(b) criteria for unrestricted use, provided that, if the applicant or licensee can demonstrate its ability to meet the provisions of .03(7)(c), the cost estimate may be based on meeting the .03(7)(c) criteria;

(III) The volume of onsite subsurface material containing residual radioactivity that will require remediation to meet the criteria for license termination; and

(IV) An adequate contingency factor.

(ii) Identification of and justification for using the key assumptions contained in the DCE;

(iii) A description of the method of assuring funds for decommissioning from subparagraph 7 of this section, including means for adjusting cost estimates and associated funding levels periodically over the life of the facility;

(iv) A certification by the licensee that financial assurance for decommissioning has been provided in the amount of the cost estimate for decommissioning; and

(v) A signed original of the financial instrument obtained to satisfy the requirements of subparagraph 7 of this section (unless a previously submitted and accepted financial instrument continues to cover the cost estimate for decommissioning).

6. At the time of license renewal and at intervals not to exceed 3 years, the decommissioning funding plan must be resubmitted with adjustments as necessary to account for changes in costs and the extent of contamination. If the amount of financial assurance will be adjusted downward, this cannot be done until the updated decommissioning funding plan is approved. The decommissioning funding plan must update the information submitted with the original or prior approved plan, and must specifically consider the effect of the following events on decommissioning costs:

(i) Spills of radioactive material producing additional residual radioactivity in onsite subsurface material;

(ii) Waste inventory increasing above the amount previously estimated;

(iii) Waste disposal costs increasing above the amount previously estimated;

(iv) Facility modifications;

(v) Changes in authorized possession limits;

(vi) Actual remediation costs that exceed the previous cost estimate;

(vii) Onsite disposal; and

(viii) Use of a settling pond.

7. Financial assurance for decommissioning must be provided by one or more of the following methods:

(i) Prepayment. Prepayment is the deposit prior to the start of operation into an account segregated from licensee assets and outside the licensee's administrative control of cash or liquid assets such that the amount of funds would be sufficient to pay decommissioning costs. Prepayment may be in the form of a trust, escrow account, government fund, certificate of deposit, or deposit of government securities.

(ii) A surety method, insurance, or other guarantee method. These methods guarantee that decommissioning costs will be paid. A surety method may be in the form of a surety bond, letter of credit, or line of credit. A parent company guarantee of funds for decommissioning costs based on a financial test may be used if the guarantee and test are as contained in (21)(d) Schedule D. A parent company guarantee may not be used in combination with other

financial methods to satisfy the requirements of this section. For commercial corporations that issue bonds, a guarantee of funds by the applicant or licensee for decommissioning costs based on a financial test may be used if the guarantee and test are as contained in (21)(g) Schedule G. For commercial companies that do not issue bonds, a guarantee of funds by the applicant or licensee for decommissioning: costs may be used if the guarantee and test are as contained in (21)(d) Schedule D. For nonprofit entities, such as colleges, universities, and nonprofit hospitals, a guarantee of funds by the applicant or licensee may be used if the guarantee and test are as contained in (21)(h) Schedule H. A guarantee by the applicant or licensee may not be used in combination with any other financial methods used to satisfy the requirements of this section or in any situation where the applicant or licensee has a parent company holding majority control of the voting stock of the company. Any surety method or insurance used to provide financial assurance for decommissioning must contain the following conditions:

(I) The surety method or insurance must be open-ended or, if written for a specified term, such as five years, must be renewed automatically, unless 90 days or more prior to the renewal date the issuer notifies the Division, the beneficiary, and the licensee of its intention not to renew. The surety method or insurance must also provide that the full face amount be paid to the beneficiary automatically prior to the expiration without proof of forfeiture if the licensee fails to provide a replacement acceptable to the Division within 30 days after receipt of notification of cancellation.

(II) The surety method or insurance must be payable to a trust established for decommissioning costs. The trustee and trust must be acceptable to the Division. An acceptable trustee includes an appropriate State or Federal government agency or an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal or State agency.

(III) The surety method or insurance must remain in effect until the Director has terminated the license.

(iii) An external sinking fund in which deposits are made at least annually, coupled with a surety method or insurance, the value of which may decrease by the amount being accumulated in the sinking fund. An external sinking fund is a fund established and maintained by setting aside funds periodically in an account segregated from licensee assets and outside the licensee's administrative control in which the total amount of funds would be sufficient to pay decommissioning costs at the time termination of operation is expected. An external sinking fund may be in the form of a trust, escrow account, government fund, certificate of deposit, or deposit of government securities. The surety or insurance provisions must be as stated in (8)(g)2.

(iv) In the case of Federal, State, or local government licensees, a statement of intent containing a cost estimate for decommissioning or an amount based on the Table in (8)(g)4., and indicating that funds for decommissioning will be obtained when necessary.

8. Each person licensed under this Chapter shall keep records of information important to the safe and effective decommissioning of the facility in an identified location until the site is released for unrestricted use by the Division. Before licensed activities are transferred or assigned in accordance with .02(13)(b), licensees shall transfer all records described in (7)(i) through (iv) to the new licensee. In this case, the new licensee will be responsible for maintaining these records until the license is terminated. If records of relevant information to the decommissioning of a facility are kept for other purposes, references to these records and their locations may be used. Information the Division considers important to decommissioning consists of:

(i) Records of spills or other unusual occurrences involving the spread of contamination in and around the facility, equipment, or site. These records may be limited to instances when contamination remains after any cleanup procedures or when there is reasonable likelihood that contaminants may have spread to inaccessible areas as in the case of possible seepage into porous materials such as concrete. These records must include any known information on identification of involved nuclides, quantities, forms, and concentrations.

(ii) As-built drawings and modifications of structures and equipment in restricted areas where radioactive materials are used and/or stored, and of locations of possible inaccessible contamination such as buried pipes which may be subject to contamination. If required drawings are referenced, each relevant document need not be indexed individually. If drawings are not available, the licensee shall substitute appropriate records of available information concerning these areas and locations.

(iii) Except for areas containing only sealed sources (provided the sources have not leaked or no contamination remains after any leak) or radioactive materials having only half-lives of less than 65 days, or depleted uranium used only for shielding or as penetrators in unused munitions, a list contained in a single document and updated every two years, of the following:

(I) All areas designated and formerly designated as restricted areas as defined under Rule 391-3-17-.01(2);

(II) All areas outside of restricted areas that require documentation under (8)(g)8.(i);

(III) All areas outside of restricted areas where current and previous wastes have been buried as documented under Rule .03(14)(i) of this Chapter; and

(IV) All areas outside of restricted areas that contain materials such that, if the license expired, the licensee would be required to either decontaminate the area to unrestricted release levels or apply for approval for disposal under Rule .03(13)(b) of this Chapter.

(iv) Records of the cost estimate performed for the decommissioning funding plan or of the amount certified for decommissioning, and records of the funding method used for assuring funds if either a funding plan or certification is used.

9. Teletherapy licensees are exempted from decommissioning financial assurance requirements for possession of licensed material in sealed sources in quantities greater than 10^{10} times the applicable quantities of Schedule F of this rule, for the purpose of source changes only. This exemption is granted for no more than 30 days for any one source change.

(h) Expiration and termination of licenses and decommissioning of sites and separate buildings or outdoor areas.

1. Each specific license continues in effect, beyond the expiration date if necessary, with respect to possession of radioactive material until the Director notifies the licensee in writing that the license is terminated. During this time, the licensee shall:

(i) Limit actions involving radioactive material to those related to decommissioning; and

(ii) Continue to control entry to restricted areas until they are suitable for release in accordance with Division requirements.

2. Within 60 days of the occurrence of any of the following, each licensee shall provide notification to the Division in writing of such occurrence, and either begin decommissioning its site, or any separate building or outdoor area that contains residual radioactivity so that the building or outdoor area is suitable for release in accordance with Division requirements, or submit within 12 months of notification a decommissioning plan, if required by (8)(h)5.(i), and begin decommissioning upon approval of that plan if:

(i) The license has expired pursuant to (14) or (18)(c); or

(ii) The licensee has decided to permanently cease principal activities, as defined in this part, at the entire site or in any separate building or outdoor area that contains residual radioactivity such that the building or outdoor area is unsuitable for release in accordance with Division requirements; or

(iii) No principal activities under the license have been conducted for a period of 24 months; or

(iv) No principal activities have been conducted for a period of 24 months in any separate building or outdoor area that contains residual radioactivity such that the building or outdoor area is unsuitable for release in accordance with Division requirements.

3. Coincident with the notification required by (8)(h)2., the licensee shall maintain in effect all decommissioning financial assurances established by the licensee pursuant to (8)(g) in conjunction with a license issuance or renewal or as required by this section. The amount of the financial assurance must be increased or may be decreased, as appropriate, to cover the detailed cost estimate for decommissioning established pursuant to (8)(h)5.(iv)(V).

(i) Any licensee who has not provided financial assurance to cover the detailed cost estimate submitted with the decommissioning plan shall do so when this rule becomes effective.

(ii) Following approval of the decommissioning plan, a licensee may reduce the amount of the financial assurance as decommissioning proceeds and radiological contamination is reduced at the site with the approval of the Director.

4. The Division may grant a request to extend the time periods in (8)(h)2. if the Division determines that this relief is not detrimental to the public health and safety and is otherwise in the public interest. The request must be submitted no later than 30 days before notification pursuant to (8)(h)2. The schedule for decommissioning set forth in (8)(h)2. may not commence until the Director has made a determination on the request.

5. (i) A decommissioning plan must be submitted if required by license condition or if the procedures and activities necessary to carry out decommissioning of the site or separate building or outdoor area have not been previously approved by the Division and these procedures could increase potential health and safety impacts to workers or to the public, such as in any of the following cases:

(I) Procedures would involve techniques not applied routinely during cleanup or maintenance operations;

(II) Workers would be entering areas not normally occupied where surface contamination and radiation levels are significantly higher than routinely encountered during operation;

(III) Procedures could result in significantly greater airborne concentrations of radioactive materials than are present during operation or;

(IV) Procedures could result in significantly greater releases of radioactive material to the environment than those associated with operation.

(ii) The Division may approve an alternate schedule for submittal of a decommissioning plan required pursuant to (8)(h)2. if the Division determines that the alternative schedule is necessary to the effective conduct of decommissioning operations and presents no undue risk from radiation to the public health and safety and is otherwise in the public interest.

(iii) Procedures such as those listed in (8)(h)5.(i) with potential health and safety impacts may not be carried out prior to approval of the decommissioning plan.

(iv) The proposed decommissioning plan for the site or separate building or outdoor area must include:

(I) A description of the conditions of the site or separate building or outdoor area sufficient to evaluate the acceptability of the plan;

(II) A description of planned decommissioning activities;

(III) A description of methods used to ensure protection of workers and the environment against radiation hazards during decommissioning;

(IV) A description of the planned final radiation survey; and

(V) An updated detailed cost estimate for decommissioning, comparison of that estimate with present funds set aside for decommissioning, and a plan for assuring the availability of adequate funds for completion of decommissioning.

(VI) For decommissioning plans calling for completion of decommissioning later than 24 months after plan approval, the plan shall include a justification for the delay based on the criteria in (8)(h)7.

(v) The proposed decommissioning plan will be approved by the Division if the information therein demonstrates that the decommissioning will be completed as soon as practicable and that the health and safety of workers and the public will be adequately protected.

6. (i) Except as provided in (8)(h)7., licensees shall complete decommissioning of the site or separate building or outdoor area as soon as practical but no later than 24 months following the initiation of decommissioning.

(ii) Except as provided in (8)(h)7. when decommissioning involves the entire site, the licensee shall request license termination as soon as practical but no later than 24 months following the initiation of decommissioning.

7. The Division may approve a request for an alternative schedule for completion of decommissioning of the site or separate building or outdoor area, and license termination if appropriate, if the Division determines that the alternative is warranted by consideration for the following:

(i) Whether it is technically feasible to complete decommissioning within the allotted 24-month period;

(ii) Whether sufficient waste disposal capacity is available to allow completion of decommissioning within the allotted 24-month period;

(iii) Whether a significant volume reduction in wastes requiring disposal will be achieved by allowing short-lived radionuclides to decay;

(iv) Whether a significant reduction in radiation exposure to workers can be achieved by allowing short-lived radionuclides to decay; and

(v) Other site-specific factors which the Division may consider appropriate on a case-by-case basis, such as the regulatory requirements of other government agencies, lawsuits, ground-water treatment activities, monitored natural ground-water restoration, actions that could result in more environmental harm than deferred cleanup, and other factors beyond the control of the licensee.

8. As the final step in decommissioning, the licensee shall follow the requirements of Rule .02(18)(d).

(9) **Special Requirements for Issuance of Certain Specific Licenses for Radioactive Material.**

(a) Use of Sealed Sources in Industrial Radiography. In addition to the requirements set forth in (8), a specific license for the use of sealed sources in industrial radiography will be issued if the licensee meets all of the requirements of Rule .04 of this Chapter.

(b) Human Use of Radioactive Materials in Institutions. In addition to the requirements set forth in (8), a specific license for the human use of radioactive material in an institution will be issued only if the licensee also meets all of the requirements of Rule .05 of this Chapter.

(c) Specific Licenses to Individual Physicians for Human Use of Radioactive Material.

1. An application by an individual physician or group of physicians for a specific license for human use of radioactive material will be approved if:

(i) The applicant satisfies the general requirements specified in (8), and all of the requirements of Rule .05 of this Chapter;

(ii) The application is for use in the applicant's practice in an office outside a medical institution;

(iii) The applicant has access to a hospital possessing adequate facilities to hospitalize and monitor the applicant's radioactive patients whenever it is advisable; and

(iv) The applicant has extensive experience in the proposed use, the handling and administration of radionuclides, and where applicable, the clinical management of radioactive patients.

2. The Director will not approve an application by an individual physician or group of physicians for a specific license to receive, possess, or use radioactive material on the premises of a medical institution unless:

(i) The use of radioactive material is limited to:

(I) The administration of radiopharmaceuticals for diagnostic or therapeutic purposes;

(II) The performance of diagnostic studies on patients to whom a radiopharmaceutical has been administered;

(III) The performance of in vitro diagnostic studies; or

(IV) The calibration and quality control checks of radioactive assay instrumentation, radiation safety instrumentation, and diagnostic instrumentation;

(ii) The physician brings the radioactive material with him and removes the radioactive material when he departs (The institution cannot receive, possess, or store radioactive material other than the amount of material remaining in the patient.); and

(iii) The medical institution does not hold a radioactive material license under (9)(b).

(d) Human Use of Sealed Sources Containing Radioactive Material. In addition to the requirements set forth in (8), a specific license for the human use of sealed sources containing radioactive material will be issued only if the applicant, or, if the application is made by an institution, the individual user is a physician and either:

1. Has specialized training in the therapeutic use of the sealed source considered (e.g., teletherapy unit, beta applicator), or has experience equivalent to such training; or

2. Has specialized training in the diagnostic use of the sealed source considered (e.g., bone mineral analyzer) or has experience equivalent to such training.

(e) Specific Licenses for Certain Medical Uses of Radioactive Material.

1. Subject to the provisions of (9)(e)2. and 3., an application for a specific license pursuant to (9)(b), (c), or (d), for any medical use or uses of radioactive material specified in Rule .05 of this Chapter, will be approved if:

(i) The applicant satisfies the requirements of (9)(b), (c), or (d);

(ii) The applicant, or the physician designated in the application as the individual user, has adequate clinical experience in the types of uses specified in the application;

(iii) The applicant, or the physicians and all other personnel who will be involved in the preparation and use of the radioactive material, has adequate training and experience in the handling of radioactive material appropriate to his participation in the uses specified in the application;

(iv) The applicant's radiation detection and measuring instrumentation is adequate for conducting the procedures involved in the uses specified in the application;

(v) The applicant's radiation safety operating procedures are adequate for handling and disposal of the radioactive material involved in the uses specified in the application; and

(vi) For uses regulated by Rules .05(41) and (44) of this Chapter, any licensee using radioactive material for clinical procedures other than those specified in the product labeling (package insert) shall comply with the product labeling regarding:

(I) Chemical and physical form,

(II) Route of administration, and

(III) Dosage range.

2. Any licensee who is authorized to use radioactive material pursuant to (9)(e) and to Rule .05 of this Chapter is subject to the following conditions:

(i) For paragraphs (41), (44), and (48) of Rule .05 of this Chapter, no licensee shall receive, possess, or use radioactive material except as a radiopharmaceutical manufactured in the form to be administered to the patient, and labeled, packaged, and distributed in accordance with a specific license issued by the Director pursuant to (11)(i), a specific license issued by the U.S. Nuclear Regulatory Commission pursuant to Section 32.72 of 10 CFR, Part 32, or a specific license issued by an Agreement State pursuant to equivalent regulations.

(ii) For Rule 391-3-17-.05(44), no licensee shall receive, possess, or use generators or reagent kits containing radioactive material or shall use reagent kits that do not contain radioactive material to prepare radiopharmaceuticals containing radioactive material, except:

(I) Reagent kits not containing radioactive material that are approved by the Division, the U.S. Nuclear Regulatory Commission or an Agreement State for use by persons licensed pursuant to (9)(d) and to Rule .05 of this Chapter or

(II) Generators or reagent kits containing radioactive material that are manufactured, labeled, packaged, and distributed in accordance with a specific license issued by the Director pursuant to (11)(i), a specific license issued by the U.S. Nuclear Regulatory Commission pursuant to Section 32.73 of 10 CFR, Part 32, or a specific license issued by an Agreement State pursuant to equivalent regulations; and

(iii) For Brachytherapy, regulated by Rule .05 of this Chapter, no licensee shall receive, possess, or use radioactive material except as contained in a source or device that has been manufactured, labeled, packaged, and distributed in accordance with a specific license issued by the Director pursuant to (11)(j), a specific license issued by the U.S. Nuclear Regulatory Commission pursuant to Section 32.74 of 10 CFR, Part 32, or a specific license issued to the manufacturer by an Agreement State pursuant to equivalent regulations.

3. Any licensee who is licensed pursuant to (9) for one or more of the medical uses regulated by Rule .05 of this Chapter also is authorized to use radioactive material under the general license in (6)(g) for in vitro uses without filing the Certificate as required by (6)(g)2, provided that the licensee is subject to the other provisions of (6)(g).

(f) Use of Naturally-Occurring Radioactive Material (NORM). In addition to the requirements set forth in (8), a specific license for the use of NORM will be issued if the licensee meets all of the requirements of Rule .08 of this Chapter.

(g) Use of Sealed Sources in Irradiators. In addition to the requirements set forth in (8), a specific license for the use of sealed sources in large irradiators will be issued if the licensee meets all of the requirements of Rule .09 of this Chapter.

(10) **Special Requirements for Specific Licenses of Broad Scope.** These requirements are for the issuance of non-medical specific licenses of broad scope for radioactive material ("broad licenses") and contain certain regulations governing holders of such licenses. (The issuance of medical specific licenses of broad scope is addressed in (9).).

Nota Bene: See Note, in (3)(c)1.

(a) The different types of broad scope licenses are set forth below:

1. A "Type A specific license of broad scope" is a specific license authorizing receipt, acquisition, ownership, possession, use, and transfer of any chemical or physical form of the radioactive material specified in the license, but not exceeding quantities specified in the license, for any authorized purpose. The quantities specified are usually in the multicurie range.

2. A "Type B specific license of broad scope" is a specific license authorizing receipt, acquisition, ownership, possession, use, and transfer of any chemical or physical form of radioactive material specified in (21)(c), Schedule C, for any authorized purpose. The possession limit for a Type B broad license, if only one radionuclide is possessed thereunder, is the quantity specified for that radionuclide in (21)(c), Schedule C, Column I. If two or more radionuclides are possessed thereunder, the possession limit for each is determined as follows: For each radionuclide, determine the ratio of the quantity possessed to the applicable quantity specified in (21)(c), Schedule C, Column I, for that radionuclide. The sum of the ratios for all radionuclides possessed under the license shall not exceed unity.

3. A "Type C specific license of broad scope" is a specific license authorizing receipt, acquisition, ownership, possession, use, and transfer of any chemical or physical form of radioactive material specified in (21)(c), Schedule C, for any authorized purpose. The possession limit for a Type C broad license, if only one radionuclide is possessed thereunder, is the quantity specified for that radionuclide in (21)(c), Schedule C, Column II. If two or more radionuclides are possessed thereunder, the possession limit is determined for each as follows: For each radionuclide, determine the ratio of the quantity possessed to the applicable quantity specified in (21)(c), Schedule C, Column II, for that radionuclide. The sum of the ratios for all radionuclides possessed under the license shall not exceed unity.

(b) An application for a Type A specific license of broad scope will be approved if:

1. The applicant satisfies the general requirements specified in (8);

2. The applicant has engaged in a reasonable number of activities involving the use of radioactive material; and

3. The applicant has established administrative controls and provisions relating to organization and management, procedures, record-keeping, material control and accounting, and management review that are necessary to assure safe operations, including:

(i) The establishment of a Radiation Safety Committee composed of such persons as a Radiation Safety Officer, a representative of management, and persons trained and experienced in the safe use of radioactive material;

(ii) The appointment of a Radiation Safety Officer who is qualified by training and experience in radiation protection, and who is available for advice and assistance on radiation safety matters; and

(iii) The establishment of appropriate administrative procedures to assure:

(I) Control of procurement and use of radioactive material;

(II) Completion of safety evaluations of proposed uses of radioactive material which take into consideration such matters as the adequacy of facilities and equipment, the training and experience of the user, and the operating or handling procedures; and

(III) Review, approval, and recording by the Radiation Safety Committee of safety evaluations of proposed uses prepared in accordance with (10)(b)3.(iii)(II) prior to the use of the radioactive material.

(c) An application for a Type B specific license of broad scope will be approved if:

1. The applicant satisfies the general requirements specified in (8); and

2. The applicant has established administrative controls and provisions relating to organization and management, procedures, record-keeping, material control and accounting, and management review that are necessary to assure safe operations, including:

(i) The appointment of a Radiation Safety Officer who is qualified by training and experience in radiation protection, and who is available for advice and assistance on radiation safety matters, and

(ii) The establishment of appropriate administrative procedures to assure:

(I) Control of procurement and use of radioactive material,

(II) Completion of safety evaluations of proposed uses of radioactive material which take into consideration such matters as the adequacy of facilities and equipment, the training and experience of the user, and the operating or handling procedures, and

(III) Review, approval, and recording by the Radiation Safety Officer of safety evaluations of proposed uses prepared in accordance with (10)(c)2.(ii)(II) prior to the use of the radioactive material.

(d) An application for a Type C specific license of broad scope will be approved if:

1. The applicant satisfies the general requirements specified in (8);

2. The applicant submits a statement that radioactive material will be used only by, or under the direct supervision of, individuals who have received:

(i) A college degree at the bachelor level, or equivalent training and experience, in the physical or biological sciences or in engineering, and

(ii) At least 40 hours of training and experience in the safe handling of radioactive material, and in the characteristics of ionizing radiation, units of radiation dose and quantities, radiation detection instrumentation, and biological hazards of exposure to radiation appropriate to the type and forms of radioactive material to be used; and

3. The applicant has established administrative controls and provisions relating to procurement of radioactive material, procedures, record-keeping, material control and accounting, and management review necessary to assure safe operations.

(e) Specific non-medical licenses of broad scope are subject to the following conditions:

1. Unless specifically authorized, persons licensed pursuant to (10) shall not:

(i) Conduct tracer studies in the environment involving direct release of radioactive material;

(ii) Receive, acquire, own, possess, use, or transfer devices containing 100,000 Curies (3.7 PBq) or more of radioactive material in sealed sources used for irradiation of materials;

(iii) Conduct activities for which a specific license issued by the Division under (9) or (11) is required; or

(iv) Add or cause the addition of radioactive material to any food, beverage, cosmetic, drug, or other product designed for ingestion or inhalation by, or application to, a human being.

2. Each Type A specific license of broad scope issued under (10) shall be subject to the condition that radioactive material possessed under the license may only be used by, or under the direct supervision of, individuals approved by the licensee's Radiation Safety Committee.

3. Each Type B specific license of broad scope issued under (10) shall be subject to the condition that radioactive material possessed under the license may only be used by, or under the direct supervision of, individuals approved by the licensee's Radiation Safety Officer.

4. Each Type C specific license of broad scope issued under (10) shall be subject to the condition that radioactive material possessed under the license may only be used by, or under the direct supervision of, individuals who satisfy the requirements of (10)(d).

(11) **Special Requirements for a Specific License to Manufacture, Assemble, Repair, or Distribute Commodities, Products, or Devices which Contain Radioactive Material.**

(a) [Reserved]

(b) Licensing the Distribution of Naturally-Occurring and Accelerator-Produced Radioactive Material (NARM) in Exempt Quantities.

Nota Bene: See Note, in (3)(c)1.

1. An application for a specific license to distribute NARM to persons exempted from this Chapter pursuant to (3)(b) will be approved if:

(i) The radioactive material is not contained in any food, beverage, cosmetic, drug, or other commodity designed for ingestion or inhalation by, or application to, a human being;

(ii) The radioactive material is in the form of processed chemical elements, compounds, mixtures, tissue samples, bioassay samples, counting standards, plated or encapsulated sources, or similar substances identified as radioactive and to be used for its radioactive properties, but is not incorporated into any manufactured or assembled commodity, product, or device intended for commercial distribution; and

(iii) The applicant submits copies of prototype labels and brochures and the Division approves such labels and brochures.

2. The license issued under (11)(b)1. is subject to the following conditions:

(i) No more than ten exempt quantities shall be sold or transferred in any single transaction. However, an exempt quantity may be composed of fractional parts of one or more of the exempt quantities provided the sum of the fractions shall not exceed unity.

(ii) Each exempt quantity shall be separately and individually packaged. No more than ten such packaged exempt quantities shall be contained in any outer package for transfer to persons exempt pursuant to (3)(b). The outer package shall be such that the dose rate at the external surface of the package does not exceed 0.5 millirem (5 µSv) per hour.

(iii) The immediate container of each quantity or separately- packaged fractional quantity of radioactive material shall bear a durable and legible label which:

(I) Identifies the radionuclide and the quantity of radioactivity, and

(II) Bears the words "Radioactive Material".

(iv) In addition to the labeling information required by (11)(b)2.(iii), the label affixed to the immediate container, or an accompanying brochure, shall:

(I) State that the contents are exempt from applicable U.S. Nuclear Regulatory Commission or Agreement State requirements,

(II) Bear the words "Radioactive Material - Not for Human Use - Introduction into Foods, Beverages, Cosmetics, Drugs, or Medicinals, or into Products Manufactured for Commercial Distribution is Prohibited - Exempt Quantities Should Not Be Combined", and

(III) Set forth appropriate additional radiation safety precautions and instructions relating to the handling, use, storage, and disposal of the radioactive material.

3. Each person licensed under (11)(b) shall maintain records identifying, by name and address, each person to whom radioactive material is transferred for use under (3)(b) or the equivalent regulations of the U.S. Nuclear Regulatory Commission or another Agreement State, and stating the kinds and quantities of radioactive material transferred. An annual summary report stating the total quantity of each radionuclide transferred under the specific license shall be filed with the Division. Each report shall cover the year ending June 30, and shall be filed within 30 days thereafter. If no transfers of radioactive material have been made pursuant to (11)(b) during the reporting period, the report shall so indicate.

(c) [Reserved]

(d) Licensing the Manufacture and Initial Transfer of Devices to Persons Generally Licensed Under (6)(c).

1. An application for a specific license to initially transfer devices containing radioactive material to persons generally licensed under (6)(c) or equivalent regulations of the U.S. Nuclear Regulatory Commission or an Agreement State will be approved if:

(i) The applicant satisfies the general requirements of (8);

(ii) The applicant submits sufficient information relating to the design, manufacture, prototype testing, quality control, labels, proposed uses, installation, servicing, leak testing, operating and safety instructions, and potential hazards of the device to provide reasonable assurance that:

(I) The device can be safely operated by persons not having training in radiological protection,

(II) Under ordinary conditions of handling, storage, and use of the device, the radioactive material contained in the device will not be released or inadvertently removed from the device, and it is unlikely that any person will receive in any period of one year a dose in excess of ten percent of the annual limits specified in Rule .03(5)(a)1. of this Chapter, and

(III) Under accident conditions (such as fire and explosion) associated with handling, storage, and use of the device, it is unlikely that any person would receive an external radiation dose or dose commitment in excess of the following organ doses:

I. Whole body; head and trunk; active blood-forming organs; gonads; or lens of eye

15 rem (150 mSv);

II. Hands and forearms; feet and ankles; localized areas of skin averaged over areas no larger than one square centimeter

200 rem (2 Sv);

III. Other Organs

50 rem (500 mSv); and

(iii) Each device bears a durable, legible, and clearly visible label or labels approved by the Division, which contain in a clearly identified and separate statement:

(I) Instructions and precautions necessary to assure safe installation, operation, and servicing of the device (documents such as operating and service manuals may be identified in the label and used to provide this information);

(II) The requirement, or lack of requirement, for leak testing, or for testing any on/off mechanism and indicator, including the maximum time interval for such testing, and the identification of radioactive material by isotope, quantity of radioactivity, and date of determination of the quantity; and

(III) The information called for in the following statement, in the same or substantially similar form:

I. The receipt, possession, use, and transfer of this device, Model ____, Serial No.____, are subject to a general license or the equivalent and to the regulations of the U.S. Nuclear Regulatory Commission or of a State with which the U.S. Nuclear Regulatory Commission has entered into an agreement for the exercise of regulatory authority. This label shall be maintained on the device in a legible condition. Removal of this label is prohibited.

CAUTION - RADIOACTIVE MATERIAL

_____

(NAME OF MANUFACTURER OR INITIAL TRANSFEROR)

Note: The model, serial number, and name of the manufacturer or distributor may be omitted from the appropriate label provided the information is elsewhere specified in labeling affixed to the device. Devices distributed pursuant to Regulations equivalent to (11)(d) prior to January 1, 1981, may bear labels authorized by the Regulations in effect on January 1, 1980. Devices distributed on or after January 1, 1981, including devices redistributed upon radioactive sources exchange, shall bear labels authorized in (11)(d).

(iv) Each device having a separable source housing that provides the primary shielding for the source also bears, on the source housing, a durable label containing the device model number and serial number, the isotope and quantity, the words, "Caution-Radioactive Material," the radiation symbol described in Rule .03(12), and the name of the manufacturer or initial distributor.

(v) Each device meeting the criteria of (6)(c)3.(xii), bears a permanent (e.g., embossed, etched, stamped, or engraved) label affixed to the source housing if separable, or the device if the source housing is not separable, that includes the words, "Caution-Radioactive Material," and, if practical, the radiation symbol described in Rule .03(12).

(vi) The device has been registered in the Sealed Source and Device Registry.

2. In the event the applicant desires that the device be tested at intervals longer than six months, either for proper operation of the on/off mechanism and indicator, if any, or for leakage of radioactive material, or for both, the applicant shall include in his application sufficient information to demonstrate that such longer interval is justified by performance characteristics of the device or similar devices and by design features which have a significant bearing on the probability or consequences of leakage of radioactive material from the device or failure of the on/off mechanism and indicator. In determining the acceptable interval for the test for leakage of radioactive material, the Division will consider information that includes, but is not limited to:

(i) Primary containment (source capsule);

(ii) Protection of primary containment;

(iii) Method of sealing containment;

(iv) Containment construction materials;

(v) Form of contained radioactive material;

(vi) Maximum temperature withstood during prototype tests;

(vii) Maximum pressure withstood during prototype tests;

(viii) Maximum quantity of contained radioactive material;

(ix) Radiotoxicity of contained radioactive material; and

(x) Operating experience with identical devices or similarly designed and constructed devices.

3. In the event the applicant desires that the general licensee under (6)(c), or under equivalent regulations of the U.S. Nuclear Regulatory Commission or an Agreement State, be authorized to install the device, collect the sample to be analyzed by a specific licensee for leakage of radioactive material, service the device, test the on/off mechanism and indicator, or remove the device from installation, the applicant shall include in his application written instructions to be followed by the general licensee, estimated calendar quarter doses associated with such activity or activities, and the basis for such estimates. The submitted information shall demonstrate that the performance of such activity or activities by an individual untrained in radiological protection, in addition to other handling, storage, and use of devices under the general license, is unlikely to cause that individual to receive a dose in excess of ten percent of the annual limits specified in Rule .03(5)(a)1. of this Chapter.

4. Each person licensed under (11)(d) shall provide the information specified in (11)(d)4.(i) to each generally licensed recipient to whom a device is to be transferred. This information must be provided before the device may be transferred. In the case of a transfer through an intermediate person, the information must also be provided to the intended user prior to initial transfer to the intermediate person.

(i) The required information includes:

(I) A copy of the general license contained in (6)(c); if (6)(c)3.(ii) through (iv) or (6)(c)3.(xii) do not apply to the particular device, these rules may be omitted.

(II) A copy of Rule .01(4), (5), (6), (7), (8), (9) and (10), Rule .02(13), (18), and (19), Rule .03(15)(a) and (b) and Rule .06;

(III) A list of the services that can only be performed by a specific licensee;

(IV) Information on acceptable disposal options including estimated costs of disposal; and

(V) An indication that improper disposal can result in high civil penalties.

(ii) If a device containing radioactive material is to be transferred for use under a general license contained in the U.S. Nuclear Regulatory Commission's or Agreement State's regulation equivalent to (6)(c), the licensee shall provide the information specified in (11)(d)4.(ii) to each person to whom a device is to be transferred. This information must be provided before the device may be transferred. In the case of a transfer through an intermediate person, the information must also be provided to the intended user prior to initial transfer to the intermediate person. The required information includes:

(I) A copy of this equivalent regulation or, alternatively, furnish a copy of the general license contained in (6)(c) to each person to whom he directly or through an intermediate person transfers radioactive material in a device for use pursuant to the general license of the U.S. Nuclear Regulatory Commission or the Agreement State. In the case of a transfer through an intermediate person, the information must also be provided to the intended user prior to initial transfer to the intermediate person. If a copy of the general license in (6)(c) is furnished to such a person, it shall be accompanied by a note explaining that the use of the device is regulated by the U.S. Nuclear Regulatory Commission or the Agreement State under requirements substantially the same as those in (6)(c); if certain paragraphs of the regulations do not apply to the particular device, those paragraphs may be omitted;

(II) A list of the services that can only be performed by a specific licensee;

(III) Information on acceptable disposal options including estimated costs of disposal;

(IV) An indication that improper disposal can result in high civil penalties; and

(V) The name or title, address, and telephone number of the contact at the appropriate NRC Regional Office or Agreement State from which additional information may be obtained.

(iii) An alternative approach to informing customers may be proposed by the licensee for approval by the Division.

5. Each device that is transferred after January 1, 2003, must meet the labeling requirements of (11)(d)1.(iii) through (v).

6. If a notification of bankruptcy has been made under (13)(e) or the license is to be terminated, each person licensed under (11)(d) shall provide, upon request, to the Division and as appropriate to any Agreement State or the NRC, records of final disposition required under (11)(d)4.(viii).

7. The licensee shall report to the Division all transfers of such devices to persons for use under the general license in (6)(c) and report all receipts of such devices from persons licensed under (6)(c).

(i) Such report shall identify each general licensee by the following:

(I) The name and mailing address for the location of use; if there is no mailing address for the location of use, an alternate address for the general licensee shall be submitted along with information on the actual location of use;

(II) The name, title, and telephone number of the person identified by the general licensee as having knowledge of and authority to take required actions to ensure compliance with the appropriate regulations and requirements;

(III) The date of the transfer;

(IV) The type, model number, and serial number of the device transferred; and

(V) The quantity and type of radioactive material contained in the device.

(ii) If one or more intermediate persons will temporarily possess the device at the intended place of use prior to its possession by the user, the report shall include the same information for both the intended user and each intermediate person, and clearly designate the intermediate person(s).

(iii) For devices received from a (6)(c) general licensee, the report must include the identity of the general licensee by name and address, the type, model number, and serial number of the device received, the date of receipt, and, in the case of devices not initially transferred by the reporting licensee, the name of the manufacturer or initial transferor.

(iv) If the licensee makes changes to a device possessed by a (6)(c) general licensee, such that the label must be changed to update required information, the report must identify the general licensee, the device, and the changes to information on the device label.

(v) The report must cover each calendar quarter, must be filed within 30 days of the end of the calendar quarter, and must clearly indicate the period covered by the report.

(vi) The report must clearly identify the specific licensee submitting the report and include the license number of the specific licensee.

(vii) If no transfers have been made to or from persons generally licensed under (6)(c) during the reporting period, the report shall so indicate.

8. The licensee shall furnish reports to other agencies as follows:

(i) Report to the U.S. Nuclear Regulatory Commission all transfers of such devices to persons for use under the U.S. Nuclear Regulatory Commission general license in Section 31.5 of 10 CFR, Part 31 and all receipts of devices from U.S. Nuclear Regulatory Commission Section 31.5 general licensees;

(ii) Report to the responsible state agency all transfers of devices manufactured and distributed pursuant to (11)(d) for use under a general license in that state's regulations equivalent to (6)(c) and all receipts of devices from general licensees in the state agency's jurisdiction;

(iii) The reports identified in 8.(i) and 8.(ii) shall identify each general licensee by the following:

(I) The name and mailing address for the location of use; if there is no mailing address for the location of use, an alternate address for the general licensee shall be submitted along with information on the actual location of use.

(II) The name, title and telephone number the person identified by the general licensee as having knowledge of and authority to take required actions to ensure compliance with the appropriate regulations and requirements;

(III) The date of the transfer;

(IV) The type, model, and serial number of the device transferred; and

(V) The quantity and type of radioactive material contained in the device.

(iv) If one or more intermediate persons will temporarily possess the device at the intended place of use prior to its possession by the user, the report shall include the same information for both the intended user and each intermediate person, and clearly designate the intermediate person(s).

(v) For devices received from a (6)(c) general licensee, the report must include the identity of the general licensee by name and address, the type, model number, and serial number of the device received, the date of receipt, and, in the case of devices not initially transferred by the reporting licensee, the name of the manufacturer or initial transferor.

(vi) If the licensee makes changes to a device possessed by a general licensee, such that the label must be changed to update required information, the report must identify the general licensee, the device, and the changes to information on the device label.

(vii) The report must cover each calendar quarter, must be filed within 30 days of the end of the calendar quarter, and must clearly indicate the period covered by the report.

(viii) The report must clearly identify the specific licensee submitting the report and must include the license number of the specific licensee.

(ix) If no transfers have been made to U.S. Nuclear Regulatory Commission licensees during the reporting period, report this information to the U.S. Nuclear Regulatory Commission; and

(x) If no transfers have been made to general licensees within a particular state during the reporting period, report this information to the responsible state agency upon request of that agency.

9. Each person licensed under (11)(d) to distribute devices to generally licensed persons shall maintain all information concerning transfers and receipts of devices that supports the reports required by (11)(d)4. These records shall be maintained for a period of three years following the date of the recorded event.

(e) Special Requirements for the Manufacture, Assembly, or Repair of Luminous Safety Devices for Use in Aircraft. An application for a specific license to manufacture, assemble, repair, or initially transfer luminous safety devices

containing tritium or promethium-147 for use in aircraft, and for distribution to persons generally licensed under (6)(d), will be approved subject to the following conditions:

1. The applicant satisfies the general requirements specified in (8), and

2. The applicant satisfies the requirements of Sections 32.53, 32.54, 32.55, and 32.56 of 10 CFR, Part 32, or their equivalent.

(f) Special Requirements for License to Manufacture or Initially Transfer Calibration Sources Containing Americium-241, Plutonium, or Radium-226 for Distribution to Persons Generally Licensed Under (6)(f). An application for a specific license to manufacture or initially transfer calibration and reference sources containing americium-241, plutonium, or radium-226 to persons generally licensed under (6)(f) will be approved subject to the following conditions:

1. The applicant satisfies the general requirement of (8), and

2. The applicant satisfies the requirements of Sections 32.57, 32.58, and 32.59 of 10 CFR, Part 32, and Section 70.39 of 10 CFR, Part 70, or their equivalent.

(g) Manufacture and Distribution of Radioactive Material for Certain In Vitro Clinical or Laboratory Testing Under General License. An application for a specific license to manufacture or distribute radioactive material for use under the general license of (6)(g) will be approved subject to the following conditions:

1. The applicant satisfies the general requirements specified in (8);

2. The radioactive material is to be prepared for distribution in prepackaged units of:

(i) Iodine-125 in units not exceeding ten microcuries (370 kBq) each,

(ii) Iodine-131 in units not exceeding ten microcuries (370 kBq) each,

(iii) Carbon-14 in units not exceeding ten microcuries (370 kBq) each,

(iv) Hydrogen-3 (tritium) in units not exceeding 50 microcuries (1.85 MBq) each,

(v) Iron-59 in units not exceeding 20 microcuries (740 kBq) each,

(vi) Cobalt-57 in units not exceeding ten microcuries (370 kBq) each,

(vii) Selenium-75 in units not exceeding ten microcuries (370 kBq) each,

(viii) Mock Iodine-125 in units not exceeding 0.05 microcurie (1.85 kBq) of iodine-129 and 0.005 microcurie (185 Bq) of americium-241 each;

3. Each prepackaged unit bears a durable and clearly visible label:

(i) Identifying the radioactive contents as to chemical form and radionuclide, and indicating that the amount of radioactivity does not exceed ten microcuries (370 kBq) of iodine-125, iodine-131, carbon-14, cobalt-57, or selenium-75; 50 microcuries (1.85 Mbq) of hydrogen-3 (tritium); 20 microcuries (740 kBq) of iron-59; or Mock Iodine-125 in units not exceeding 0.05 microcurie (1.85 kBq) of iodine-129 and 0.005 microcurie (185 Bq) of americium-241 each; and

(ii) Displaying the radiation caution symbol described in Rule 391-3-17-.03, of this Chapter, and the words, "CAUTION, RADIOACTIVE MATERIAL", and "Not for Internal or External Use in Humans or Animals";

4. The following statement, as appropriate, or a substantially similar statement which contains the information called for in the following statement, appears on a label affixed to each prepackaged unit or appears in a leaflet or brochure which accompanies the package:

(i) This radioactive material may be received, acquired, possessed, and used only by physicians, veterinarians in the practice of veterinary medicine, clinical laboratories, or hospitals and only for in vitro clinical or laboratory tests not involving internal or external administration of the material, or the radiation therefrom, to human beings or animals. Its receipt, acquisition, possession, use, and transfer are subject to the regulations of and a general license of the U.S. Nuclear Regulatory Commission or of a State with which the U.S. Nuclear Regulatory Commission has entered into an agreement for the exercise of regulatory authority.

_____

(NAME OF MANUFACTURER)

and

5. The label affixed to the unit, or the leaflet or brochure, which accompanies the package, contains adequate information as to the precautions to be observed in handling and storing such radioactive material. In the case of the Mock Iodine-125 reference or calibration source, the information accompanying the source must also contain directions to the licensee regarding the waste disposal requirements set out in Rule .03(13) of this Chapter.

(h) Licensing the Manufacture and Distribution of Ice-Detection Devices. An application for a specific license to manufacture and initially transfer ice-detection devices to persons generally licensed under (6)(e) will be approved subject to the following conditions:

1. The applicant satisfies the general requirements of (8), and

2. The criteria of Sections 32.61 and 32.62 of 10 CFR, Part 32, are met.

(i) Manufacture, Preparation, or Transfer, for Commercial Distribution of Pharmaceuticals Containing Radioactive Material for Medical Use. An application for a specific license to manufacture, prepare, or transfer for commercial distribution pharmaceuticals containing radioactive material for use by persons licensed pursuant to (9) for the uses listed in (41), (44), and (48) of Rule .05 of this Chapter will be approved subject to the following conditions:

1. The applicant satisfies the general requirements specified in (8);

2. The applicant submits evidence that the applicant is at least one of the following:

(i) Registered or licensed with the U.S. Food and Drug Administration (FDA) as the owner or operator of a drug establishment that engages in the manufacture, preparation, propagation, compounding, or processing of a drug under 21 CFR 207.20(a);

(ii) Registered or licensed with a State Agency as a drug manufacturer;

(iii) Licensed as a pharmacy by the Georgia State Board of Pharmacy;

(iv) Operating as a nuclear pharmacy within a Federal medical institution; or

(v) A Positron Emission Tomography (PET) drug production facility registered with a State agency.

3. The applicant submits information on the radionuclide, chemical and physical form, packaging including maximum activity per vial, syringe, generator, or other container of the radiopharmaceutical, and shielding provided by the packaging to show it is appropriate for safe handling and storage of radiopharmaceuticals by licensees; and

4. The applicant commits to the following labeling requirements:

(i) A label is affixed to each transport radiation shield, whether it is constructed of lead, glass, plastic, or other material, of a radiopharmaceutical to be transferred for commercial distribution. The label must include the radiation symbol and words "Caution, Radioactive Material" or "Danger Radioactive Material"; the name of the radiopharmaceutical or its abbreviation, and quantity of radioactivity at a specified date and time. For radiopharmaceuticals with a half-life greater than 100 days, the time may be omitted.

(ii) A label is affixed to each syringe, vial, or other container used to hold a radiopharmaceutical to be transferred for commercial distribution. The label must include the words "Caution, Radioactive Material" or "Danger Radioactive Material" and an identifier that ensures that the syringe, vial, or other container can be correlated with the information on the transport radiation shield label, leaflet, or brochure.

5. A licensee described by (11)(i)2.(iii) or (iv):

(i) May prepare radiopharmaceuticals for medical use, as defined in Rule .05(2)(s) provided that the radiopharmaceutical is prepared by either an authorized nuclear pharmacist, as specified in (ii) and (iv) or an individual under the supervision of an authorized nuclear pharmacist as specified in Rule .05(18)(b).

(ii) May allow a pharmacist to work as an authorized nuclear pharmacist if this individual:

(I) Qualifies as an authorized nuclear pharmacist as defined in .05(2)(e),

(II) Meets the requirements specified in Rule .05(24)(b) and .05(27) and the licensee has received an approved license amendment identifying this individual as an authorized nuclear pharmacist, or has notified the Division in accordance with Rule .05(11), or

(III) Is designated as an authorized nuclear pharmacist in accordance with (iv).

(iii) The actions authorized in (i) and (ii) are permitted not withstanding more restrictive language in license conditions.

(iv) May designate a nuclear pharmacist in accordance with Rule .05(26) as an authorized nuclear pharmacist if the individual is identified as of December 31, 1996, as an "authorized user" on a license issued by the Director, the NRC, or an Agreement State, under this rule or equivalent requirements, or if the individual was a nuclear pharmacist preparing only radiopharmaceuticals containing accelerator produced radioactive material and the individual practiced at a Government Agency or Federally recognized Indian Tribe before November 30, 2007 or at all other pharmacies before August 8, 2009, or an earlier date as noticed by the NRC.

(v) Shall provide to the Division a copy of each individual's certification by a specialty board whose certification process has been recognized by the Commission or an Agreement State as specified in 391-3-17-.05(24), or a Division, NRC, or Agreement State issued license, or permit issued by a licensee of broad scope, or documentation that only accelerator-produced radioactive materials were used in the practice of nuclear pharmacy at a Government agency or Federally recognized Indian Tribe before November 30, 2007 or at all other locations of use before August 8, 2009, or an earlier date as noticed by the NRC, and a copy of the individual's license to practice pharmacy in the State of Georgia issued by the Secretary of State's office, no later than 30 days after the date that the licensee allows pursuant to (ii) and (iii), the individual to work as an authorized nuclear pharmacist.

6. A licensee shall possess and use instrumentation to measure the radioactivity of radiopharmaceuticals. The licensee shall measure, by direct measurements or by combination of measurements and calculations, the amount of radioactivity in dosages of alpha-, beta-, or photon-emitting radiopharmaceuticals prior to transfer for commercial distribution. In addition, the licensee shall:

(i) Perform test before initial use, periodically, and following repair, on each instrument for accuracy, linearity, and geometry dependence, as appropriate for the use of the instrument; and make adjustments when necessary; and

(ii) Check each instrument for constancy and proper operation at the beginning of each day of use.

7. A licensee shall satisfy the labeling requirements in subparagraph (11)(i)4.

8. Nothing in this section relieves the licensee from complying with applicable FDA, other Federal, or other State requirements governing radiopharmaceuticals.

(j) Manufacture and Distribution of Sources or Devices Containing Radioactive Material for Medical Use. An application for a specific license to manufacture and distribute sources and devices containing radioactive material to persons licensed pursuant to Rule .05 of this chapter for use as a calibration, transmission, or reference source or for medical uses regulated by Rule .05(55), (65), or (67) of this Chapter will be approved subject to the following conditions:

1. The applicant satisfies the general requirements of (8);

2. The applicant submits sufficient information regarding each type of source or device pertinent to an evaluation of its radiation safety, including:

(i) The radioactive material contained, its chemical and physical form, and amount,

(ii) Details of design and construction of the source or device,

(iii) Procedures for, and results of, prototype tests to demonstrate that the source or device will maintain its integrity under stresses likely to be encountered in normal use and accidents,

(iv) For devices containing radioactive material, the radiation profile of a prototype device,

(v) Details of quality control procedures to assure that production sources and devices meet the standards of the design and prototype tests,

(vi) Procedures and standards for calibrating sources and devices,

(vii) Legend and methods for labeling sources and devices as to their radioactive content, and

(viii) Instructions for handling and storing the source or device from the radiation safety standpoint. (These instructions are to be included on a durable label attached to the source or device or attached to a permanent storage container for the source or device. Instructions which are too lengthy for such label may be summarized on the label and printed in detail on a brochure that is referenced on the label.).

3. The label affixed to the source or device, or to the permanent storage container for the source or device, contains information on the radionuclide, quantity, and date of assay, and a statement that the source or device is licensed by the Director for distribution to persons licensed pursuant to (9) and to Rule .05(55), (65), or (67) of this Chapter or under equivalent licenses of the U.S. Nuclear Regulatory Commission or an Agreement State;

4. The source or device has been registered in the Sealed Source and Device Registry;

5. In the event the applicant desires that the source or device be required to be tested for leakage of radioactive material at intervals longer than six months, he shall include in his application sufficient information to demonstrate that such longer interval is justified by performance characteristics of the source or device or similar sources or devices and by design features that have a significant bearing on the probability or consequences of leakage of radioactive material from the source;

6. In determining the acceptable interval for test of leakage of radioactive material, the Division will consider information that includes, but is not limited to, that which is listed in (11)(d)2.

(k) Requirements for License to Manufacture and Distribute Industrial Products Containing Depleted Uranium for Mass-Volume Applications.

1. An application for a specific license to manufacture industrial products and devices containing depleted uranium for use pursuant to (5)(d) or equivalent regulations of the U.S. Nuclear Regulatory Commission or an Agreement State will be approved subject to the following conditions:

(i) The applicant satisfies the general requirements specified in (8);

(ii) The applicant submits sufficient information relating to the design, manufacture, prototype testing, quality control procedures, labeling or marking, proposed uses, and potential hazards of the industrial product or device to provide reasonable assurance that possession, use, or transfer of the depleted uranium in the product or device is not likely to cause any individual to receive in any period of 1 year a radiation dose in excess of ten percent of the annual limits specified in Rule .03(5)(a)1. of this Chapter; and

(iii) The applicant submits sufficient information regarding the industrial product or device and the presence of depleted uranium for a mass-volume application in the product or device to provide reasonable assurance that unique benefits will accrue to the public because of the usefulness of the product or device.

2. In the case of an industrial product or device whose unique benefits are questionable, the Director will approve an application for a specific license under (11)(k) only if the product or device is found to combine a high degree of utility and low probability of uncontrolled disposal and dispersal of significant quantities of depleted uranium into the environment.

3. The Director may deny any application for a specific license under (11)(k) if the end use(s) of the industrial product or device cannot be reasonably foreseen.

4. Each person licensed pursuant to (11)(k)1. shall:

(i) Maintain the level of quality control required by the license in the manufacture of the industrial product or device and in the installation of the depleted uranium into the product or device;

(ii) Label or mark each unit to:

(I) Identify the manufacturer of the product or device and the number of the license under which the product or device was manufactured, the fact that the product or device contains depleted uranium, and the quantity of depleted uranium in each product or device; and

(II) State that the receipt, possession, use, and transfer of the product or device are subject to a general license or the equivalent and to the regulations of the U.S. Nuclear Regulatory Commission or an Agreement State;

(iii) Assure that the depleted uranium before being installed in each product or device has been impressed with the following legend clearly legible through any plating or other covering: "Depleted Uranium";

(iv) Furnish a copy of the general license contained in:

(I) (5)(d) and a copy of Division form "Registration Certificate - Use of Depleted Uranium Under General License" to each person to whom he transfers depleted uranium in a product or device for use pursuant to the general license contained in (5)(d), or

(II) The U.S. Nuclear Regulatory Commission's or Agreement State's regulation equivalent to (5)(d) and a copy of the U.S. Nuclear Regulatory Commission's or Agreement State's certificate, or, alternatively, furnish a copy of the general license contained in (5)(d) and a copy of Division form "Registration Certificate - Use of Depleted Uranium Under General License" to each person to whom he transfers depleted uranium in a product or device for use pursuant to the general license of the U.S. Nuclear Regulatory Commission or an Agreement State, with a note explaining that use of the product or device is regulated by the U.S. Nuclear Regulatory Commission or an Agreement State under requirements substantially the same as those in (5)(d);

(v) Report to the Division all transfers of industrial products or devices to persons for use under the general license in (5)(d). Such report shall identify each general licensee by name and address, an individual by name and/or position who may constitute a point of contact between the Division and the general licensee, the type and model number of device transferred, and the quantity of depleted uranium contained in the product or device. The report shall be submitted within 30 days after the end of each calendar quarter in which such a product or device is transferred to the generally licensed person. If no transfers have been made to persons generally licensed under (5)(d) during the reporting period, the report shall so indicate;

(vi) Report to other agencies as follows:

(I) To the U.S. Nuclear Regulatory Commission all transfers of industrial products or devices to persons for use under the U.S. Regulatory Commission general license in Section 40.25 of 10 CFR, Part 40;

(II) To the responsible state agency all transfers of devices manufactured and distributed pursuant to 10 CFR 32.210 for use under a general license in that state's regulations equivalent to (5)(d);

(III) Have such reports identify each general licensee by name and address, an individual by name and/or position who may constitute a point of contact between the agency and the general licensee, the type and model number of the device transferred, and the quantity of depleted uranium contained in the product or device. The report shall be submitted within 30 days after the end of each calendar quarter in which such product or device is transferred to the generally licensed person;

(IV) If no transfers have been made to U.S. Nuclear Regulatory Commission licensees during the reporting period, report this information to the U.S. Nuclear Regulatory Commission; and

(V) If no transfers have been made to general licensees within a particular Agreement State during the reporting period, report this information to the responsible Agreement State agency upon the request of that agency; and

(vii) Keep records showing the name, address, and point of contact for each general licensee to whom he transfers depleted uranium in industrial products or devices for use pursuant to the general license provided in (5)(d) or equivalent regulations of the U.S. Nuclear Regulatory Commission or an Agreement State. The records shall be maintained for a period of two years and shall show the date of each transfer, the quantity of depleted uranium in each product or device transferred, and compliance with the report requirements of (11).

(l) [Reserved]

(12) **Issuance of Specific Licenses.**

(a) Upon a determination that an application meets the requirements of the Act and the Rules of the Division, the Director may issue a specific license authorizing the proposed activity in such form and containing such conditions and limitations as it deems appropriate or necessary to effectuate the purposes of the Act.

(b) The Director may incorporate in any license at the time of issuance, or thereafter, such additional requirements and conditions, as authorized by the Act or Rules, or Order, with respect to the licensee's receipt, possession, use, and transfer of radioactive material subject to this Chapter as necessary in order to:

1. Minimize danger to public health and safety or property;

2. Require such reports and the keeping of such records, and to provide for such inspections of activities under the license as necessary to effectuate the purposes of the Act; and

3. Prevent loss or theft of material subject to this Rule.

(13) **Specific Terms and Conditions of Licenses.**

(a) Each license issued pursuant to this Rule shall be subject to all the provisions of the Act, and to all Rules of the Division and Orders of the Director.

(b) No license issued or granted under this Rule and no right to possess or utilize radioactive material granted by any license issued pursuant to this Rule shall be transferred, assigned, or in any manner disposed of, either voluntarily or involuntarily, directly or indirectly, through transfer of control of any license to any person unless the Division, after securing full information, finds that the transfer is in accordance with the provisions of the Act, and gives its consent in writing.

1. An application for transfer of license must include:

(i) The identity, technical and financial qualification of the proposed transferee; and

(ii) Financial assurance for decommissioning information required by .02(8)(g).

(c) Each person licensed by the Director pursuant to this Rule shall confine use and possession of the material licensed to the locations and purposes authorized in the license.

(d) Each licensee shall notify the Division in writing immediately and request termination of his license when the licensee decides to terminate all activities involving radioactive materials authorized under the license. This notification and request for termination must include the information specified in (18)(d).

(e) Each general licensee required to register by (6)(c)3.(xi) and each specific licensee shall notify the Division in writing immediately following the filing of a voluntary or involuntary petition for bankruptcy under any Chapter of Title 11 (Bankruptcy) of the United States Code by or against:

1. The licensee;

2. An entity (as that term is defined in 11 U.S.C. 101(15)) controlling the licensee or listing the license or licensee as property of the estate; or

3. An affiliate (as that term is defined in 11 U.S.C. 101(2) of the licensee.

(f) The notification specified in (13)(e) shall indicate the bankruptcy court in which the petition for bankruptcy was filed and the date of the filing of the petition.

(g) Security requirements for portable gauges. Each portable gauge licensee shall use a minimum of two independent physical controls that form tangible barriers to secure portable gauges from unauthorized removal, whenever portable gauges are not under the control and constant surveillance of the licensee.

(h) Each licensee preparing technetium-99m radiopharmaceuticals from molybdenum-99/technetium-99m generators or rubidium-82 from strontium-82/rubidium-82 generators shall test the generator eluates for molybdenum-99 breakthrough or strontium-82 and strontium-85 contamination, respectively, in accordance with Rule .05(45)(a)(b) and (c). The licensee shall record the results of each test and retain each record for 3 years after the record is made. The licensee shall report the results of any test that exceeds the permissible concentration listed in 391-3-17-.05(45) at the time of generator elution, in accordance with 391-3-17-.05(120).

(i) Authorization under .02(7)(j) to produce Positron Emission Tomography (PET) radioactive drugs for noncommercial transfer to medical use licensees in its consortium does not relieve the licensee from complying with applicable FDA, other Federal, and State requirements governing radioactive drugs.

1. Each licensee authorized under .02(7)(j) to produce PET radioactive drugs for noncommercial transfer to medical use licensees in its consortium shall:

(i) Satisfy the labeling requirements in .02(11)(i)4. of this Rule for each PET radioactive drug transport radiation shield and each syringe, vial, or other container used to hold a PET radioactive drug intended for noncommercial distribution to members of its consortium.

(ii) Possess and use instrumentation to measure the radioactivity of the PET radioactive drugs intended for noncommercial distribution to members of its consortium and meet the procedural, radioactivity measurement, instrument test, instrument check, and instrument adjustment requirements in .02(11)(i)6. of this Rule.

2. A licensee that is a pharmacy authorized under .02(7)(j) to produce PET radioactive drugs for noncommercial transfer to medical use licensees in its consortium shall require that any individual that prepares PET radioactive drugs shall be:

(i) an authorized nuclear pharmacist that meets the requirements in .02(11)(i)5. of this Rule, or

(ii) an individual under the supervision of an authorized nuclear pharmacist as specified in Rule .05(18).

3. A pharmacy, authorized under .02(7)(j) to produce PET radioactive drugs for noncommercial transfer to medical use licensees in its consortium that allows an individual to work as an authorized nuclear pharmacist, shall meet the requirements of .02(11)(i)5.(v) of this Rule.

(14) **Expiration of Licenses.** Except as provided in (15)(b), each specific license shall expire at the end of the day, in the month and year stated therein.

(15) **Renewal of Licenses.**

(a) No less than 30 days before the expiration date specified in a specific license, the licensee shall either:

1. Submit an application for license renewal filed in accordance with (7), or

2. Notify the Division in writing in accordance with (13)(d) and (15)(c) if the licensee decides not to renew the license.

(b) In any case in which a licensee, not less than 30 days prior to the expiration of his existing license, has filed an application in proper form for renewal or for a new license authorizing the same activities, such existing license shall not expire until the application has been finally determined by the Division.

(c) If a licensee does not submit an application for license renewal on or before the expiration date specified in the license, then the licensee shall, on or before that expiration date:

1. Terminate the use of radioactive material,

2. Remove radioactive contamination to the extent practicable,

3. Properly dispose of the radioactive material, and

4. Submit the information specified in (18)(d).

(16) **Amendment of Licenses at Request of Licensee.** Applications for amendment of a license shall be filed in accordance with (7) and shall specify the respects in which the licensee desires the license to be amended and the grounds for such amendment.

(17) **Action on Applications to Renew or Amend.** In considering an application by a licensee to renew or amend the license, the Director will apply the criteria set forth in (8), (9), (10), or (11), as applicable.

(18) **Modification, Revocation, and Termination of Licenses.**

(a) The terms and conditions of all licenses shall be subject to amendment, revision, or modification, or the license may be suspended or revoked by reason of amendments to the Act, or by reason of Rules, and Orders issued by the Director.

(b) Any license may be revoked, suspended, or modified, in whole or in part, for any material false statement in the application or any statement of fact required under provisions of the Act or of this Rule, or because of conditions revealed by such application or statement of fact or any report, record, or inspection or other means which would warrant the Director to refuse to grant a license on an original application, or for violation of, or failure to observe, any of the terms and conditions of the Act, of the license, or of any Rule or Order of the Director.

(c) Each specific license revoked by the Director expires at the end of the day on the date of the Director's final determination to revoke the license, or on the expiration date stated in the determination, or as otherwise provided by Order of the Director.

(d) The Director may terminate a specific license upon request submitted by the licensee to the Division in writing provided the following:

1. The licensee certifies the disposition of all licensed material, including accumulated wastes, by submitting a completed "Request to Terminate Radioactive Materials License" form or equivalent information; and

2. The licensee conducts a radiation survey of the premises where the licensed activities were carried out and submits a report of the results of the survey unless the licensee demonstrates that the premises are suitable for release in accordance with the requirements for decommissioning in Rule .03(7). As appropriate, the licensee shall:

(i) Report levels of gamma radiation in units of microroentgen (millisieverts) per hour at one meter from surfaces, and report levels of radioactivity, including alpha and beta, in units of disintegrations per minute or microcuries (megabecquerels) per 100 square centimeters - removable and fixed - for surfaces, microcuries (megabecquerels) per milliliter for water, and picocuries (becquerels) per gram for solids such as soils or concrete; and

(ii) Specify the survey instrument(s) used and certify that each instrument is properly calibrated and tested.

3. If detectable levels of residual radioactive contamination are found, the license continues to be in effect, even beyond the expiration date if necessary, with respect to possession of residual radioactive material as contamination until the Division notifies the licensee in writing that the license is terminated. Each licensee who possesses residual radioactive material under this paragraph shall initiate decommissioning activities as required by (8)(h).

4. If no residual radioactive contamination is detected, the licensee shall submit a certification that no detectable radioactive contamination was found. If the information submitted is found to be adequate, the Director will notify the licensee in writing that the license is terminated.

(e) Specific licenses, including expired licenses, will be terminated by written notice to the licensee when the Director determines that:

1. Radioactive material has been properly disposed;

2. Reasonable effort has been made to eliminate residual radioactive contamination, if present; and

3. (i) A radiation survey has been performed which demonstrates that the premises are suitable for release in accordance with Division requirements for decommissioning in Rule .03(7); or

(ii) Other information submitted by the licensee is sufficient to demonstrate that the premises are suitable for release in accordance with Division requirements for decommissioning in Rule .03(7).

4. Prior to license termination, each licensee authorized to possess radioactive material with a half-life greater than 120 days, in an unsealed form, shall forward the following records to the Division:

(i) Records of disposal of licensed material made under Rule .03(13)(b) (including burials authorized before January 28, 1982),.03(13)(c), .03(13)(d), .03(13)(e); and

(ii) Records required by Rule .03(14)(c)2.(iv).

5. If licensed activities are transferred or assigned in accordance with Rule .02(13)(b), each licensee authorized to possess radioactive material, with a half-life greater than 120 days, in an unsealed form, shall transfer the following records to the new licensee and the new licensee will be responsible for maintaining these records until the license is terminated:

(i) Records of disposal of licensed material made under Rule .03(13)(b) (including burials authorized before January 28, 1982), .03(13)(c), .03(13)(d), .03(13)(e); and

(ii) Records required by Rule .03(14)(c)2.(iv).

6. Prior to license termination, each licensee shall forward the records required by Rule .02(8)(g)8. to the Division.

(19) **Transfer of Material.**

(a) Authorization for Transfer. No licensee shall transfer radioactive material except as authorized pursuant to (19)(b).

(b) Condition of Transfer. Any licensee may transfer radioactive material, subject to acceptance by the transferee, to:

1. The Division, after receiving prior approval from the Division;

2. The United States Department of Energy or any successor thereto;

3. Any person exempt from this Rule to the extent permitted under such exemption;

4. Any person licensed to receive such material under terms of a general license or its equivalent, or specific license or equivalent licensing document issued by the Director, the U.S. Nuclear Regulatory Commission or any Agreement State, to any person otherwise authorized to receive such material by the Federal Government or any agency thereof, the Division or any Agreement State; or

5. Any person authorized by the Division in writing.

(c) Before transferring radioactive material to a specific licensee of the Director, the U.S. Nuclear Regulatory Commission or an Agreement State or to a general licensee who is required to register with the Division, the U.S. Nuclear Regulatory Commission or an Agreement State prior to receipt of the radioactive material, the licensee transferring the material shall verify that the transferee's license authorizes the receipt of the type, form, and quantity of radioactive material to be transferred.

(d) The following methods for the verification required by (19)(c) are acceptable:

1. The transferor may possess, and read, a current copy of the transferee's specific license or registration certificate.

2. The transferor may have in his possession a written certification by the transferee that the transferee is authorized by license or registration certificate to receive the type, form, and quantity of radioactive material to be transferred, specifying the license or registration certificate number, issuing agency, and expiration date.

3. For emergency shipments, the transferor may accept oral certification by the transferee that the transferee is authorized by license or registration certificate to receive the type, form, and quantity of radioactive material to be transferred, specifying the license or registration certificate number, issuing agency, and expiration date; provided that the oral certification is confirmed in writing within ten days.

4. The transferor may obtain other sources of information compiled by a reporting service from official records of the Division, the U.S. Nuclear Regulatory Commission or the licensing agency of an Agreement State regarding the identity of licensees and the scope and expiration date of licenses and registration.

5. When none of the methods of verification described in paragraphs (19)(d)1., 2., 3., and 4. is readily available or when a transferor desires to verify that information received by one of such methods is correct or up-to-date, the transferor may obtain and record confirmation from the Division, the U.S. Nuclear Regulatory Commission or the licensing agency of an Agreement State that the transferee is licensed to receive the radioactive material.

(e) Preparation for shipment and transport of radioactive material shall be in accordance with the provisions of Rule .06 of this Chapter.

(f) Each person who receives source or byproduct material pursuant to a license issued pursuant to the regulations in Rule 391-3-17-.02 shall keep records showing the receipt, transfer, and disposal of this source or byproduct material as specified in 10 CFR 40.61.

(20) **Reciprocity.**

(a) Persons licensed by other Agencies. Subject to the provisions of this Chapter, any person who holds a specific license from the U.S. Nuclear Regulatory Commission or any Agreement State, other than this State, and issued by the agency having jurisdiction where the licensee maintains an office for directing the licensed activity and at which radiation safety records are normally maintained, is hereby granted a general license to conduct the activities authorized in such licensing document within this State, except in areas of exclusive federal jurisdiction, for a period not in excess of 180 days in any calendar year provided that:

1. The licensing document does not limit the activity authorized by such document to specified installations or locations;

2. The out-of-state licensee notifies the Division in writing at least three days prior to engaging in such activity. Such notification shall indicate the location, period, and type of proposed possession and use within the State, and shall be accompanied by a copy of the pertinent licensing document. If, for a specific case, the 3-day period would impose an undue hardship on the out-of-state licensee, he may, upon application to the Division, obtain permission to proceed sooner;

3. The out-of-state licensee complies with all applicable Rules of the Division, and with all the terms and conditions of his licensing document except any such terms and conditions that may be inconsistent with applicable Rules of the Division;

4. Provided further that the Division may require the out-of-state licensee to supply such other information as the Division may reasonably request; and

5. The out-of-state licensee shall not transfer or dispose of radioactive material possessed or used under the general license provided in (20)(a) except by transfer to a person who is:

(i) Specifically licensed by the Director or the U.S. Nuclear Regulatory Commission to receive such material; or

(ii) Exempt from the requirements for a license for such material under (3)(a).

(b) Notwithstanding the provisions of (20)(a), any person who holds a specific license issued by the U.S. Nuclear Regulatory Commission or an Agreement State authorizing the holder to manufacture, transfer, install, or service a device described in (6)(c)1. within areas subject to the jurisdiction of the licensing body is hereby granted a general license to install, transfer, demonstrate, or service such device in this State provided that:

1. Such person shall file a report with the Division within 30 days after the end of each calendar quarter in which any device is transferred to or installed in this State. Each such report shall identify each general licensee to whom

such a device is transferred by name and address, the type of device transferred, and the quantity and type of radioactive material contained in the device;

2. The device has been manufactured, labeled, installed, and serviced in accordance with applicable provisions of the specific license issued to such person by the U.S. Nuclear Regulatory Commission or an Agreement State;

3. Such person shall assure that any labels required to be affixed to the device under regulations of the authority which licensed the manufacturing of the device bear a statement that "Removal of This Label is Prohibited"; and

4. The holder of the specific license shall furnish to each general licensee to whom he transfers such a device or on whose premises he installs such a device a copy of the general license contained in (6)(c).

(c) The Division may withdraw, limit, or qualify its acceptance of any specific license or equivalent licensing document issued by another agency, or any product distributed pursuant to such licensing document, upon determining that such action is necessary in order to prevent undue hazard to public health and safety, to property, or to the environment.

(21) **Schedules.**

(a) Schedule A.

SCHEDULE A

EXEMPT CONCENTRATIONS

Exempt Concentrations	**Schedule A**	Column I Gas Concentration	Column II Liquid and Solid
Element (Atomic Number)	Isotope	(µCi/mL) (1)	Concentration (µCi/mL) (2)
Antimony (51)	Sb 122		3×10^{-4}
	Sb 124		2×10^{-4}
	Sb 125		1×10^{-3}
Argon (18)	Ar 37	1×10^{-3}	
	Ar 41	4×10^{-7}	
Arsenic (33)	As 73		5×10^{-3}
	As 74		5×10^{-4}
	As 76		2×10^{-4}
	As 77		8×10^{-4}
Barium (56)	Ba 131		2×10^{-3}
	Ba 140		3×10^{-4}
Beryllium (4)	Be 7		2×10^{-2}
Bismuth (83)	Bi 206		4×10^{-4}
Bromine (35)	Br 82	4×10^{-7}	3×10^{-3}
Cadmium (48)	Cd 109		2×10^{-3}
	Cd 115m		3×10^{-4}
	Cd 115		3×10^{-4}
Calcium (20)	Ca 45		9×10^{-5}
	Ca 47		5×10^{-4}
Carbon (6)	C 14	1×10^{-6}	8×10^{-3}
Cerium (58)	Ce 141		9×10^{-4}
	Ce 143		4×10^{-4}
	Ce 144		1×10^{-4}
Cesium (55)	Cs 131		2×10^{-2}
	Cs 134m		6×10^{-2}
	Cs 134		9×10^{-5}
Chlorine (17)	Cl 38	9×10^{-7}	4×10^{-3}
Chromium (24)	Cr 51		2×10^{-2}

Exempt Concentrations	**Schedule A**	Column I Gas Concentration	Column II Liquid and Solid
Element (Atomic Number)	Isotope	(µCi/mL) [1]	Concentration (µCi/mL) [2]
Cobalt (27)	Co 57		5×10^{-3}
	Co 60		5×10^{-4}
Copper (29)	Cu 64		3×10^{-3}
Dysprosium (66)	Dy 165		4×10^{-3}
	Dy 166		4×10^{-4}
Erbium (68)	Er 169		9×10^{-4}
	Er 171		1×10^{-3}
Europium (63) ($T^{0.5}$ = 9.2 h)	Eu 152		6×10^{-4}
	Eu 155		2×10^{-3}
Fluorine (9)	F 18	2×10^{-6}	8×10^{-3}
Gadolinium (64)	Gd 153		2×10^{-3}
	Gd 159		8×10^{-4}
Gallium (31)	Ga 72		4×10^{-4}
Germanium (32)	Ge 71		2×10^{-2}
Gold (79)	Au 196		2×10^{-3}
	Au 198		5×10^{-4}
	Au 199		2×10^{-3}
Hafnium (72)	Hf 181		7×10^{-4}
Hydrogen (1)	H 3	5×10^{-6}	3×10^{-2}
Indium (49)	In 113m		1×10^{-2}
	In 114m		2×10^{-4}
Iodine (53)	I 126	3×10^{-9}	2×10^{-5}
	I 131	3×10^{-9}	2×10^{-5}
	I 132	8×10^{-8}	6×10^{-4}
	I 133	1×10^{-8}	7×10^{-5}
	I 134	2×10^{-7}	1×10^{-3}
Iridium (77)	Ir 190		2×10^{-3}
	Ir 192		4×10^{-4}
	Ir 194		3×10^{-4}
Iron (26)	Fe 55		8×10^{-3}
	Fe 59		6×10^{-4}
Krypton (36)	Kr 85m	1×10^{-6}	
	Kr 85	3×10^{-6}	
Lanthanum (57)	La 140		2×10^{-4}
Lead (82)	Pb 203		4×10^{-3}
Lutetium (71)	Lu 177		1×10^{-3}
Manganese (25)	Mn 52		3×10^{-4}
	Mn 54		1×10^{-3}
	Mn 56		1×10^{-3}
Mercury (80)	Hg 197m		2×10^{-3}
	Hg 197		3×10^{-3}
	Hg 203		2×10^{-4}
Molybdenum (42)	Mo 99		2×10^{-3}
Neodymium (60)	Nd 147		6×10^{-4}
	Nd 149		3×10^{-3}
Nickel (28)	Ni 65		1×10^{-3}
Niobium (columbium) (41)	Nb 95		1×10^{-3}
	Nb 97		9×10^{-3}
Osmium (76)	Os 185		7×10^{-4}
	Os 191m		3×10^{-2}
	Os 191		2×10^{-3}
	Os 193		6×10^{-4}

Exempt Concentrations	**Schedule A**	Column I Gas Concentration	Column II Liquid and Solid
Element (Atomic Number)	Isotope	(µCi/mL) [1]	Concentration (µCi/mL) [2]
Palladium (46)	Pd 103		3×10^{-3}
	Pd 109		9×10^{-4}
Phosphorus (15)	P 32		2×10^{-4}
Platinum (78)	Pt 191		1×10^{-3}
	Pt 193m		1×10^{-2}
	Pt 197m		1×10^{-2}
	Pt 197		1×10^{-3}
Polonium (84)	Po 210		7×10^{-6}
Potassium (19)	K 42		3×10^{-3}
Praseodymium (59)	Pr 142		3×10^{-4}
	Pr 143		5×10^{-4}
Promethium (61)	Pm 147		2×10^{-3}
	Pm 149		4×10^{-4}
Radium (88)	Ra 226		1×10^{-7}
	Ra 228		3×10^{-7}
Rhenium (75)	Re 183		6×10^{-3}
	Re 186		9×10^{-4}
	Re 188		6×10^{-4}
Rhodium (45)	Rh 103m		1×10^{-1}
Rubidium (37)	Rb 86		7×10^{-4}
Ruthenium (44)	Ru 97		4×10^{-3}
	Ru 103		8×10^{-4}
	Ru 105		1×10^{-3}
	Ru 106		1×10^{-4}
Samarium (62)	Sm 153		8×10^{-4}
Scandium (21)	Sc 46		4×10^{-4}
	Sc 47		9×10^{-4}
	Sc 48		3×10^{-3}
Selenium (34)	Se 75		3×10^{-3}
Silicon (14)	Si 31		9×10^{-3}
Silver (47)	Ag 105		1×10^{-3}
	Ag 110m		3×10^{-4}
	Ag 111		4×10^{-4}
Sodium (11)	Na 24		2×10^{-3}
Strontium (38)	Sr 85		1×10^{-3}
	Sr 89		1×10^{-4}
	Sr 91		7×10^{-4}
	Sr 92		7×10^{-4}
Sulfur (16)	S 35	9×10^{-8}	6×10^{-4}
Tantalum (73)	Ta 182		4×10^{-4}
Technetium (43)	Tc 96m		1×10^{-1}
	Tc 96		1×10^{-3}
Tellurium (52)	Te 125m		2×10^{-3}
	Te 127m		6×10^{-4}
	Te 127		3×10^{-3}
	Te 129m		3×10^{-4}
	Te 131m		6×10^{-4}
	Te 132		3×10^{-4}
Terbium (65)	Tb 160		4×10^{-4}
Thallium (81)	Tl 200		4×10^{-3}
	Tl 201		3×10^{-3}
	Tl 202		1×10^{-3}
	Tl 204		1×10^{-3}

Exempt Concentrations	**Schedule A**	Column I Gas Concentration	Column II Liquid and Solid
Element (Atomic Number)	Isotope	(µCi/mL) [1]	Concentration (µCi/mL) [2]
Thulium (69)	Tm 170		5×10^{-4}
Tin (50)	Sn 113		9×10^{-4}
	Sn 125		2×10^{-4}
Tungsten (wolfram) (74)	W 181		4×10^{-3}
	W 187		7×10^{-4}
Vanadium (23)	V 48		3×10^{-4}
Xenon (54)	Xe 131m	4×10^{-6}	
	Xe 133	3×10^{-6}	
	Xe 135	1×10^{-6}	
Ytterbium (70)	Yb 175		1×10^{-3}
Yttrium (39)	Y 90		2×10^{-4}
	Y 91m		3×10^{-2}
	Y 91		3×10^{-4}
	Y 92		6×10^{-4}
	Y 93		3×10^{-4}
Zinc (30)	Zn 65		1×10^{-3}
	Zn 69m		7×10^{-4}
	Zn 69		2×10^{-2}
Zirconium (40)	Zr 95		6×10^{-4}
	Zr 97		2×10^{-4}
Beta- and/or gamma-emitting radioactive material not listed above with halflife less than three years.		1×10^{-10}	1×10^{-6}

Note: Many radioisotopes disintegrate into isotopes that are also radioactive. In expressing the concentrations in Schedule A, the activity stated is that of the parent isotope and takes into account the daughters. For purposes of (3)(a) where there is involved a combination of isotopes, the limit for the combination should be derived as follows:

Determine for each isotope in the product the ratio between the concentration present in the product and the exempt concentration established in Schedule A for the specific isotope when not in combination. The sum of such ratios may not exceed "1" (i.e., unity).

EXAMPLE: $\frac{\text{Concentration of Isotope A in Product}}{\text{Exempt concentration of Isotope A}} +$

$\frac{\text{Concentration of Isotope B in Product}}{\text{Exempt concentration of Isotope B}} \leq 1$

(b) Schedule B.

SCHEDULE B

EXEMPT QUANTITIES

Schedule B - Exempt Quantities

Radioactive Materials	Exempt Quantity (Microcuries)
Antimony-122 (Sb 122)	100
Antimony-124 (Sb 124)	10
Antimony-125 (Sb 125)	10
Arsenic-73 (As 73)	100

Schedule B - Exempt Quantities

Radioactive Materials	Exempt Quantity (Microcuries)
Arsenic-74 (As 74)	10
Arsenic-76 (As 76)	10
Arsenic-77 (As 77)	100
Barium-131 (Ba 131)	10
Barium-133 (Ba 133)	10
Barium-140 (Ba 140)	10
Bismuth-210 (Bi 210)	1
Bromine-82 (Br 82)	10
Cadmium-109 (Cd 109)	10
Cadmium-115m (Cd 115m)	10
Cadmium-115 (Cd 115)	100
Calcium-45 (Ca 45)	10
Calcium-47 (Ca 47)	10
Carbon-14 (C 14)	100
Cerium-141 (Ce 141)	100
Cerium-143 (Ce 143)	100
Cerium-144 (Ce 144)	1
Cesium-129 (Cs 129)	100
Cesium-131 (Cs 131)	1,000
Cesium-134m (Cs 134m)	100
Cesium-134 (Cs 134)	1
Cesium-135 (Cs 135)	10
Cesium-136 (Cs 136)	10
Cesium-137 (Cs 137)	10
Chlorine-36 (Cl 36)	10
Chlorine-38 (Cl 38)	10
Chromium-51 (Cr 51)	1,000
Cobalt-57 (Co 57)	100
Cobalt-58m (Co 58m)	10
Cobalt-58 (Co 58)	10
Cobalt-60 (Co 60)	1
Copper-64 (Cu 64)	100
Dysprosium-165 (Dy 165)	10
Dysprosium-166 (Dy 166)	100
Erbium-169 (Er 169)	100
Erbium-171 (Er 171)	100
Europium-152 (Eu 152) 9.2h	100
Europium-152 (Eu 152) 13 yr	1
Europium-154 (Eu 154)	1
Europium-155 (Eu 155)	10
Fluorine-18 (F 18)	1,000
Gadolinium-153 (Gd 153)	10
Gadolinium-159 (Gd 159)	100
Gallium-67 (Ga 67)	100
Gallium-72 (Ga 72)	10
Germanium-68 (Ge 68)	10
Germanium-71 (Ge 71)	100
Gold-195 (Au 195)	10
Gold-198 (Au 198)	100
Gold-199 (Au 199)	100
Hafnium-181 (Hf 181)	10
Holmium-166 (Ho 166)	100
Hydrogen-3 (H 3)	1,000
Indium-111 (In 111)	100

Schedule B - Exempt Quantities

Radioactive Materials	Exempt Quantity (Microcuries)
Indium-113m (In 113m)	100
Indium-114m (In 114m)	10
Indium-115m (In 115m)	100
Indium-115 (In 115)	10
Iodine-123 (I 123)	100
Iodine-125 (I 125)	1
Iodine-126 (I 126)	1
Iodine-129 (I 129)	0.1
Iodine-131 (I 131)	1
Iodine-132 (I 132)	10
Iodine-133 (I 133)	1
Iodine-134 (I 134)	10
Iodine-135 (I 135)	10
Iridium-192 (Ir 192)	10
Iridium-194 (Ir 194)	100
Iron-52 (Fe 52)	10
Iron-55 (Fe 55)	100
Iron-59 (Fe 59)	10
Krypton-85 (Kr 85)	100
Krypton-87 (Kr 87)	10
Lanthanum-140 (La 140)	10
Lutetium-177 (Lu 177)	100
Manganese-52 (Mn 52)	10
Manganese-54 (Mn 54)	10
Manganese-56 (Mn 56)	10
Mercury-197m (Hg 197m)	100
Mercury-197 (Hg 197)	100
Mercury-203 (Hg 203)	10
Molybdenum-99 (Mo 99)	100
Neodymium-147 (Nd 147)	100
Neodymium-149 (Nd 149)	100
Nickel-59 (Ni 59)	100
Nickel-63 (Ni 63)	10
Nickel-65 (Ni 65)	100
Niobium-93m (Nb 93m)	10
Niobium-95 (Nb 95)	10
Niobium-97 (Nb 97)	10
Osmium-185 (Os 185)	10
Osmium-191m (Os 191m)	100
Osmium-191 (Os 191)	100
Osmium-193 (Os 193)	100
Palladium-103 (Pd 103)	100
Palladium-109 (Pd 109)	100
Phosphorus-32 (P 32)	10
Platinum-191 (Pt 191)	100
Platinum-193m (Pt 193m)	100
Platinum-193 (Pt 193)	100
Platinum-197m (Pt 197m)	100
Platinum-197 (Pt 197)	100
Polonium-210 (Po 210)	0.1
Potassium-42 (K 42)	10
Potassium-43 (K 43)	10
Praseodymium-142 (Pr 142)	100
Praseodymium-143 (Pr 143)	100

Schedule B - Exempt Quantities

Radioactive Materials	Exempt Quantity (Microcuries)
Promethium-147 (Pm 147)	10
Promethium-149 (Pm 149)	10
Rhenium-186 (Re 186)	100
Rhenium-188 (Re 188)	100
Rhodium-103m (Rh 103m)	100
Rhodium-105 (Rh 105)	100
Rubidium-81 (Rb 81)	10
Rubidium-86 (Rb 86)	10
Rubidium-87 (Rb 87)	10
Ruthenium-97 (Ru 97)	100
Ruthenium-103 (Ru 103)	10
Ruthenium-105 (Ru 105)	10
Ruthenium-106 (Ru 106)	1
Samarium-151 (Sm 151)	10
Samarium-153 (Sm 153)	100
Scandium-46 (Sc 46)	10
Scandium-47 (Sc 47)	100
Scandium-48 (Sc 48)	10
Selenium-75 (Se 75)	10
Silicon-31 (Si 31)	100
Silver-105 (Ag 105)	10
Silver-110m (Ag 110m)	1
Silver-111 (Ag 111)	100
Sodium-22 (Na 22)	10
Sodium-24 (Na 24)	10
Strontium-85 (Sr 85)	10
Strontium-89 (Sr 89)	1
Strontium-90 (Sr 90)	0.1
Strontium-91 (Sr 91)	10
Strontium-92 (Sr 92)	10
Sulphur-35 (S 35)	100
Tantalum-182 (Ta 182)	10
Technetium-96 (Tc 96)	10
Technetium-97m (Tc 97m)	100
Technetium-97 (Tc 97)	100
Technetium-99m (Tc 99m)	100
Technetium-99 (Tc 99)	10
Tellurium-125m (Te 125m)	10
Tellurium-127m (Te 127m)	10
Tellurium-127 (Te 127)	100
Tellurium-129m (Te 129m)	10
Tellurium-129 (Te 129)	100
Tellurium-131m (Te 131m)	10
Tellurium-132 (Te 132)	10
Terbium-160 (Tb 160)	10
Thallium-200 (Tl 200)	100
Thallium-201 (Tl 201)	100
Thallium-202 (Tl 202)	100
Thallium-204 (Tl 204)	10
Thulium-170 (Tm 170)	10
Thulium-171 (Tm 171)	10
Tin 113-(Sn 113)	10
Tin 125-(Sn 125)	10
Tungsten-181 (W 181)	10

Schedule B - Exempt Quantities

Radioactive Materials	Exempt Quantity (Microcuries)
Tungsten-185 (W 185)	10
Tungsten-187 (W 187)	100
Vanadium-48 (V 48)	10
Xenon-131m (Xe 131m)	1,000
Xenon-133 (Xe 133)	100
Xenon-135 (Xe 135)	100
Ytterbium-175 (Yb 175)	100
Yttrium-87 (Y 87)	10
Yttrium-88 (Y 88)	10
Yttrium-90 (Y 90)	10
Yttrium-91 (Y 91)	10
Yttrium-92 (Y 92)	100
Yttrium-93 (Y 93)	100
Zinc-65 (Zn 65)	10
Zinc-69m (Zn 69m)	100
Zinc-69 (Zn 69)	1,000
Zirconium-93 (Zr 93)	10
Zirconium-95 (Zr 95)	10
Zirconium-97 (Zr 97)	10
Any radioactive material not listed above other than alpha-emitting radioactive material.	0.1

(c) Schedule C.

SCHEDULE C

LIMITS FOR BROAD LICENSES

Schedule C - Limits For Broad Licenses

Radioactive Materials	Column I (Curies)	Column II (Curies)
Antimony-122 (Sb 122)	1	0.01
Antimony-124 (Sb 124)	1	0.01
Antimony-125 (Sb 125)	1	0.01
Arsenic-73 (As 73)	10	0.1
Arsenic-74 (As 74)	1	0.01
Arsenic-76 (As 76)	1	0.01
Arsenic-77 (As 77)	10	0.1
Barium-131 (Ba 131)	10	0.1
Barium-140 (Ba 140)	1	0.01
Beryllium-7 (Be 7)	10	0.1
Bismuth-210 (Bi 210)	0.1	0.001
Bromine-82 (Br 82)	10	0.1
Cadmium-109 (Cd 109)	1	0.01
Cadmium-115m (Cd 115m)	1	0.01
Cadmium-115 (Cd 115)	10	0.1
Calcium-45 (Ca 45)	1	0.01
Calcium-47 (Ca 47)	10	0.1
Carbon-14 (C 14)	100	1.0
Cerium-141 (Ce 141)	10	0.1
Cerium-143 (Ce 143)	10	0.1
Cerium-144 (Ce 144)	0.1	0.001
Cesium-131 (Cs 131)	100	1.0
Cesium-134m (Cs 134m)	100	1.0

Schedule C - Limits For Broad Licenses

Radioactive Materials	Column I (Curies)	Column II (Curies)
Cesium-134 (Cs 134)	0.1	0.001
Cesium-135 (Cs 135)	1	0.01
Cesium-136 (Cs 136)	10	0.1
Cesium-137 (Cs 137)	0.1	0.001
Chlorine-36 (Cl 36)	0.01	0.001
Chlorine-38 (Cl 38)	100	1.0
Chromium-51 (Cr 51)	100	1.0
Cobalt-57 (Co 57)	10	0.1
Cobalt-58m (Co 58m)	100	1.0
Cobalt-58 (Co 58)	1	0.01
Cobalt-60 (Co 60)	0.1	0.001
Copper-64 (Cu 64)	10	0.1
Dysprosium-165 (Dy 165)	100	1.0
Dysprosium-166 (Dy 166)	10	0.1
Erbium-169 (Er 169)	10	0.1
Erbium-171 (Er 171)	10	0.1
Europium-152 (Eu 152) 9.2h	10	0.1
Europium-152 (Eu 152) 13 yr	0.1	0.001
Europium-154 (Eu 154)	0.1	0.001
Europium-155 (Eu 155)	1	0.01
Fluorine-18 (F 18)	100	1.0
Gadolinium-153 (Gd 153)	1	0.01
Gadolinium-159 (Gd 159)	10	0.1
Gallium-72 (Ga 72)	10	0.1
Germanium-71 (Ge 71)	100	1.0
Gold-198 (Au 198)	10	0.1
Gold-199 (Au 199)	10	0.1
Hafnium-181 (Hf 181)	1	0.01
Holmium-166 (Ho 166)	10	0.1
Hydrogen-3 (H 3)	100	1.0
Indium-113m (In 113m)	100	1.0
Indium-114m (In 114m)	1	0.01
Indium-115m (In 115m)	100	1.0
Indium-115 (In 115)	1	0.01
Iodine-125 (I 125)	0.1	0.001
Iodine-126 (I 126)	0.1	0.001
Iodine-129 (I 129)	0.1	0.001
Iodine-131 (I 131)	0.1	0.001
Iodine-132 (I 132)	10	0.1
Iodine-133 (I 133)	1	0.01
Iodine-134 (I 134)	10	0.1
Iodine-135 (I 135)	1	0.01
Iridium-192 (Ir 192)	1	0.01
Iridium-194 (Ir 194)	10	0.1
Iron-55 (Fe 55)	10	0.1
Iron-59 (Fe 59)	1	0.01
Krypton-85 (Kr 85)	100	1.0
Krypton-87 (Kr 87)	10	0.1
Lanthanum-140 (La 140)	1	0.01
Lutetium-177 (Lu 177)	10	0.1
Manganese-52 (Mn 52)	1	0.01
Manganese-54 (Mn 54)	1	0.01
Manganese-56 (Mn 56)	10	0.1
Mercury-197m (Hg 197m)	10	0.1

Schedule C - Limits For Broad Licenses

Radioactive Materials	Column I (Curies)	Column II (Curies)
Mercury-197 (Hg 197)	10	0.1
Mercury-203 (Hg 203)	1	0.01
Molybdenum-99 (Mo 99)	10	0.1
Neodymium-147 (Nd 147)	10	0.1
Neodymium-149 (Nd 149)	10	0.1
Nickel-59 (Ni 59)	10	0.1
Nickel-63 (Ni 63)	1	0.01
Nickel-65 (Ni 65)	10	0.1
Niobium-93m (Nb 93m)	1	0.01
Niobium-95 (Nb 95)	1	0.01
Niobium-97 (Nb 97)	100	1.0
Osmium-185 (Os 185)	1	0.01
Osmium-191m (Os 191m)	100	1.0
Osmium-191 (Os 191)	10	0.1
Osmium-193 (Os 193)	10	0.1
Palladium-103 (Pd 103)	10	0.1
Palladium-109 (Pd 109)	10	0.1
Phosphorus-32 (P 32)	1	0.01
Platinum-191 (Pt 191)	10	0.1
Platinum-193m (Pt 193m)	100	1.0
Platinum-193 (Pt 193)	10	0.1
Platinum-197m (Pt 197m)	100	1.0
Platinum-197 (Pt 197)	10	0.1
Polonium-210 (Po 210)	0.01	0.0001
Potassium-42 (K 42)	1	0.01
Praseodymium-142 (Pr 142)	10	0.1
Praseodymium-143 (Pr 143)	10	0.1
Promethium-147 (Pm 147)	1	0.01
Promethium-149 (Pm 149)	10	0.1
Radium-226	0.01	0.0001
Rhenium-186 (Re 186)	10	0.1
Rhenium-188 (Re 188)	10	0.1
Rhodium-103m (Rh 103m)	1,000	0
Rhodium-105 (Rh 105)	10	0.1
Rubidium-86 (Rb 86)	1	0.01
Rubidium-87 (Rb 87)	1	0.01
Ruthenium-97 (Ru 97)	100	1.0
Ruthenium-103 (Ru 103)	1	0.01
Ruthenium-105 (Ru 105)	10	0.1
Ruthenium-106 (Ru 106)	0.1	0.001
Samarium-151 (Sm 151)	1	0.01
Samarium-153 (Sm 153)	10	0.1
Scandium-46 (Sc 46)	1	0.01
Scandium-47 (Sc 47)	10	0.1
Scandium-48 (Sc 48)	1	0.01
Selenium-75 (Se 75)	1	0.01
Silicon-31 (Si 31)	10	0.1
Silver-105 (Ag 105)	1	0.01
Silver-110m (Ag 110m)	0.1	0.001
Silver-111 (Ag 111)	10	0.1
Sodium-22 (Na 22)	0.1	0.001
Sodium-24 (Na 24)	1	0.01
Strontium-85m (Sr 85m)	1,000	10.0
Strontium-85 (Sr 85)	1	0.01

Schedule C - Limits For Broad Licenses

Radioactive Materials	Column I (Curies)	Column II (Curies)
Strontium-89 (Sr 89)	1	0.01
Strontium-90 (Sr 90)	0.01	0.0001
Strontium-91 (Sr 91)	10	0.1
Strontium-92 (Sr 92)	10	0.1
Sulphur-35 (S 35)	10	0.1
Tantalum-182 (Ta 182)	1	0.01
Technetium-96 (Tc 96)	10	0.1
Technetium-97m (Tc 97m)	10	0.1
Technetium-97 (Tc 97)	10	0.1
Technetium-99m (Tc 99m)	100	1.0
Technetium-99 (Tc 99)	1	0.01
Tellurium-125m (Te 125m)	1	0.01
Tellurium-127m (Te 127m)	1	0.01
Tellurium-127 (Te 127)	10	0.1
Tellurium-129m (Te 129m)	1	0.01
Tellurium-129 (Te 129)	100	1.0
Tellurium-131m (Te 131m)	10	0.1
Tellurium-132 (Te 132)	1	0.01
Terbium-160 (Tb 160)	1	0.01
Thallium-200 (Tl 200)	10	0.1
Thallium-201 (Tl 201)	10	0.1
Thallium-202 (Tl 202)	10	0.1
Thallium-204 (Tl 204)	1	0.01
Thulium-170 (Tm 170)	1	0.01
Thulium-171 (Tm 171)	1	0.01
Tin 113-(Sn 113)	1	0.01
Tin 125-(Sn 125)	1	0.01
Tungsten-181 (W 181)	1	0.01
Tungsten-185 (W 185)	1	0.01
Tungsten-187 (W 187)	10	0.1
Vanadium-48 (V 48)	1	0.01
Xenon-131m (Xe 131m)	1,000	0
Xenon-133 (Xe 133)	100	1.0
Xenon-135 (Xe 135)	100	1.0
Ytterbium-175 (Yb 175)	10	0.1
Yttrium-90 (Y 90)	1	0.1
Yttrium-91 (Y 91)	1	0.1
Yttrium-92 (Y 92)	10	0.1
Yttrium-93 (Y 93)	1	0.01
Zinc-65 (Zn 65)	1	0.01
Zinc-69m (Zn 69m)	10	0.1
Zinc-69 (Zn 69)	100	1.0
Zirconium-93 (Zr 93)	1	0.01
Zirconium-95 (Zr 95)	1	0.01
Zirconium-97 (Zr 97)	1	0.01
Any radioactive material other than source material, or alpha-emitting radioactive material not listed above.	0.1	0.001

(d) Schedule D. Criteria Relating to Use of Financial Tests and Parent Company Guarantees for Providing Reasonable Assurance of Funds for Decommissioning.

1. Introduction. An applicant or licensee may provide reasonable assurance of the availability of funds for decommissioning based on obtaining a parent company guarantee that funds will be available for decommissioning

costs and on a demonstration that the parent company passes a financial test. This schedule establishes criteria for passing the financial test and for obtaining the parent company guarantee.

2. Financial Test. To pass the financial test, the parent company must meet the criteria of either (21)(d)2.(i) or (21)(d)2.(ii) as follows:

(i) The parent company must have:

(I) two of the following three ratios: a ratio of total liabilities to net worth less than 2.0; a ratio of the sum of net income plus depreciation, depletion, and amortization to total liabilities greater than 0.1; and a ratio of current assets to current liabilities greater than 1.5;

(II) Net working capital and tangible net worth each at least six times the current decommissioning cost estimates (or prescribed amount if a certification is used);

(III) Tangible net worth of at least $10 million; and

(IV) Assets located in the United States amounting to at least 90 percent of total assets or at least six times the current decommissioning cost estimates (or prescribed amount if a certification is used).

(ii) The parent company must have:

(I) A current rating for its most recent bond issuance of AAA, AA, A, or BBB as issued by Standard and Poor's or Aaa, Aa, A, or Baa as issued by Moody's;

(II) Tangible net worth each at least six times the current decommissioning cost estimates for the total of all facilities or parts thereof (or prescribed amount if a certification is used);

(III) Tangible net worth of at least $10 million; and

(IV) Assets located in the United States amounting to at least 90 percent of total assets or at least six times the current decommissioning cost estimates for the total of all facilities or parts thereof (or prescribed amount if a certification is used).

(iii) The parent company's independent certified public accountant must have compared the data used by the parent company in the financial test, which is derived from the independently-audited, year-end financial statements for the latest fiscal year, with the amounts in such financial statement. In connection with that procedure the licensee shall inform the Director and Division within 90 days of any matters coming to the auditor's attention that cause the auditor to believe that the data specified in the financial test should be adjusted and that the company no longer passes the test.

(iv) After the initial financial test, the parent company must repeat the passage of the test within 120 days after the close of each succeeding fiscal year. If the parent company no longer meets the requirements, as appropriate, of either (21)(d)2.(i) or (21)(d)2.(ii), the licensee must send notice to the Director and Division of intent to establish alternate financial assurance as specified in the Division's Rules. The notice must be sent by certified mail within 90 days after the end of the fiscal year for which the year-end financial data show that the parent company no longer meets the financial test requirements. The licensee must provide alternate financial assurance within 120 days after the end of such fiscal year.

3. Parent Company Guarantee. The terms of a parent company guarantee which an applicant or licensee obtains must provide that:

(i) The parent company guarantee shall remain in force unless the guarantor sends notice of cancellation by certified mail to the licensee and the Director and Division. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the licensee and the Director, as evidenced by the return receipts;

(ii) If the licensee fails to provide alternate financial assurance as specified in the Division's Rules within 90 days after receipt by the licensee and the Director and Division of a notice of cancellation of the parent company guarantee from the guarantor, the guarantor shall provide such alternative financial assurance in the name of the licensee;

(iii) The parent company guarantee and financial test provisions must remain in effect until the Department has terminated the license; and

(iv) If a trust is established for decommissioning costs, the trustee and trust must be acceptable to the Department. An acceptable trustee includes an appropriate State or Federal government agency or an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal or State agency.

(e) Schedule E.

SCHEDULE E

QUANTITIES OF RADIOACTIVE MATERIALS REQUIRING CONSIDERATION OF THE NEED FOR AN EMERGENCY PLAN FOR RESPONDING TO A RELEASE

Schedule E - Emergency Plan For Responding to a Release

Radioactive Material [(1)]	Release Fraction	Quantity (Curies)
Actinium-228	0.001	4,000
Americium-241	0.001	2
Americium-242	0.001	2
Americium-243	0.001	2
Antimony-124	0.01	4,000
Antimony-126	0.01	6,000
Barium-133	0.01	10,000
Barium-140	0.01	30,000
Bismuth-207	0.01	5,000
Bismuth-210	0.01	600
Cadmium-109	0.01	1,000
Cadmium-113	0.01	80
Calcium-45	0.01	20,000
Californium-252	0.001	9 (20 mg)
Carbon-14 (Non Carbon dioxide)	0.01	50,000
Cerium-141	0.01	10,000
Cerium-144	0.01	300
Cesium-134	0.01	2,000
Cesium-137	0.01	3,000
Chlorine-36	0.5	100
Chromium-51	0.01	300,000
Cobalt-60	0.001	5,000
Copper-64	0.01	200,000
Curium-242	0.001	60
Curium-243	0.001	3
Curium-244	0.001	4
Curium-245	0.001	2
Europium-152	0.01	500
Europium-154	0.01	400
Europium-155	0.01	3,000
Germanium-68	0.01	2,000
Gadolinium-153	0.01	5,000
Gold-198	0.01	30,000

Schedule E - Emergency Plan For Responding to a Release

Radioactive Material [(1)]	Release Fraction	Quantity (Curies)
Hafnium-172	0.01	400
Hafnium-181	0.01	7,000
Holmium-166m	0.01	100
Hydrogen-3	0.5	20,000
Iodine-125	0.5	10
Iodine-131	0.5	10
Indium-114m	0.01	1,000
Iridium-192	0.001	40,000
Iron-55	0.01	40,000
Iron-59	0.01	7,000
Krypton-85	1.0	6,000,000
Lead-210	0.01	8
Manganese-56	0.01	60,000
Mercury-203	0.01	10,000
Molybdenum-99	0.01	30,000
Neptunium-237	0.001	2
Nickel-63	0.01	20,000
Niobium-94	0.01	300
Phosphorus-32	0.5	100
Phosphorus-33	0.5	1,000
Polonium-210	0.01	10
Potassium-42	0.01	9,000
Promethium-145	0.01	4,000
Promethium-147	0.01	4,000
Radium-226	0.001	100
Ruthenium-106	0.01	200
Samarium-151	0.01	4,000
Scandium-46	0.01	3,000
Selenium-75	0.01	10,000
Silver-110m	0.01	1,000
Sodium-22	0.01	9,000
Sodium-24	0.01	10,000
Strontium-89	0.01	3,000
Strontium-90	0.01	90
Sulfur-35	0.5	900
Technetium-99	0.01	10,000
Technetium-99m	0.01	400,000
Tellurium-127m	0.01	5,000
Tellurium-129m	0.01	5,000
Terbium-160	0.01	4,000
Thulium-170	0.01	4,000
Tin-13	0.01	10,000
Tin-123	0.01	3,000
Tin-126	0.01	1,000
Titanium-44	0.01	100
Vanadium-48	0.01	7,000
Xenon-133	1.0	900,000
Yttrium-91	0.01	2,000
Zinc-65	0.01	5,000
Zirconium-93	0.01	400
Zirconium-95	0.01	5,000
Any other beta-/gamma-emitter	0.01	10,000
Mixed fission products	0.01	1,000
Mixed Corrosion Products	0.01	10,000

Schedule E - Emergency Plan For Responding to a Release

Radioactive Material [1]	Release Fraction	Quantity (Curies)
Contaminated equipment, beta/gamma.	0.001	10,000
Irradiated material, any form other than solid noncombustible.	0.01	1,000
Irradiated material, solid noncombustible.	0.001	10,000
Mixed radioactive waste, beta/gamma.	0.01	1,000
Packaged mixed waste, beta/gamma[2].	0.001	10,000
Any other alpha-emitter.	0.001	2
Contaminated equipment, alpha.	0.0001	20
Packaged waste, alpha[(2)].	0.0001	20

(f) Schedule F

SCHEDULE F

QUANTITIES FOR USE WITH DECOMMISSIONING

Schedule F - Quantities for Use With Decommissioning

Radioactive Material	Quantity (Microcurie [(a)/])
Americium-241	0.01
Antimony-122	100
Antimony-124	10
Antimony-125	10
Arsenic-73	100
Arsenic-74	10
Arsenic-76	10
Arsenic-77	100
Barium-131	10
Barium-133	10
Barium-140	10
Bismuth-210	1
Bromine-82	10
Cadmium-109	10
Cadmium-115m	10
Cadmium-115	100
Calcium-45	10
Calcium-47	10
Carbon-14	100
Cerium-141	100
Cerium-143	100
Cerium-144	1
Cesium-131	1,000
Cesium-134m	100
Cesium-134	1
Cesium-135	10
Cesium-136	10
Cesium-137	10
Chlorine-36	10
Chlorine-38	10
Chromium-51	1,000
Cobalt-58m	10
Cobalt-58	10
Cobalt-60	1
Copper-64	100

Schedule F - Quantities for Use With Decommissioning

Radioactive Material	Quantity (Microcurie [(a)/])
Dysprosium-165	10
Dysprosium-166	100
Erbium-169	100
Erbium-171	100
Europium-152 (9.2 h)	100
Europium-152 (13 yr)	1
Europium-154	1
Europium-155	10
Florine-18	1,000
Gadolinium-153	10
Gadolinium-159	100
Gallium-72	10
Germanium-71	0
Hafnium-181	10
Holmium-166	100
Hydrogen-3	1,000
Indium-113m	100
Indium-114m	10
Indium-115m	100
Indium-115	10
Iodine-125	1
Iodine-126	1
Iodine-129	0.1
Iodine-131	1
Iodine-132	10
Iodine-133	1
Iodine-134	10
Iodine-135	10
Iridium-192	10
Iridium-194	100
Iron-55	100
Iron-59	10
Krypton-85	100
Krypton-87	10
Lanthanum-140	10
Lutetium-177	100
Manganese-52	10
Manganese-54	10
Manganese-56	10
Mercury-197m	100
Mercury-197	100
Mercury-203	10
Molybdenum-99	100
Neodymium-147	100
Neodymium-149	100
Nickel-59	100
Nickel-63	10
Nickel-65	100
Niobium-93m	10
Niobium-95	10
Niobium-97	10
Osmium-185	10
Osmium-191m	100
Osmium-191	100

Schedule F - Quantities for Use With Decommissioning

Radioactive Material	Quantity (Microcurie [(a)/])
Osmium-193	100
Palladium-103	100
Palladium-109	100
Phosphorus-32	10
Platinum-191	100
Platinum-193m	100
Platinum-193	100
Platinum-197m	100
Platinum-197	100
Plutonium-239	0.01
Polonium-210	0.1
Potassium-42	10
Praseodymium-142	100
Praseodymium-143	100
Promethium-147	10
Promethium-149	10
Radium-226	0.01
Rhenium-186	100
Rhenium-188	100
Rhodium-103m	100
Rhodium-105	100
Rubidium-86	10
Rubidium-87	10
Ruthenium-97	100
Ruthenium-103	10
Ruthenium-105	10
Ruthenium-106	1
Samarium-151	10
Samarium-153	100
Scandium-46	10
Scandium-47	100
Scandium-48	10
Selenium-75	10
Silicon-31	100
Silver-105	10
Silver-110m	1
Silver-111	100
Sodium-22	1
Sodium-24	10
Strontium-85	10
Strontium-89	1
Strontium-90	0.1
Strontium-91	10
Strontium-92	10
Sulfur-35	100
Tantalum-182	10
Technetium-96	10
Technetium-97m	100
Technetium-97	100
Technetium-99m	100
Technetium-99	10
Tellurium-125m	10
Tellurium-127m	10
Tellurium-127	100

Schedule F - Quantities for Use With Decommissioning

Radioactive Material	Quantity (Microcurie [(a)/])
Tellurium-129m	10
Tellurium-129	100
Tellurium-131m	10
Tellurium-132	10
Terbium-160	10
Thallium-200	100
Thallium-201	100
Thallium-202	100
Thallium-204	10
Thorium (natural)[b/]	100
Thulium-170	10
Thulium-171	10
Tin-113	10
Tin-125	10
Tungsten-181	10
Tungsten-185	10
Tungsten-187	100
Uranium (natural)[c/]	100
Uranium-233	0.01
Uranium-234	0.01
Uranium-235	0.01
Vanadium-48	10
Xenon-131m	1,000
Xenon-133	100
Xenon-135	100
Ytterbium-175	100
Yttrium-90	10
Yttrium-91	10
Yttrium-92	100
Yttrium-93	100
Zinc-65	10
Zinc-69m	100
Zinc-69	1,000
Zirconium-93	10
Zirconium-95	10
Zirconium-97	10
Any alpha emitting radionuclide not listed above or mixtures of alpha emitters of unknown composition.	0.01
Any radionuclide other than alpha emitting radionuclides, not listed above or mixtures of beta emitters of unknown composition.	0.10

(g) Schedule G. Criteria Relating to Use of Financial Tests and Self Guarantees for Providing Reasonable Assurance of Funds for Decommissioning.

1. Introduction.

An applicant or licensee may provide reasonable assurance of the availability of funds for decommissioning based on furnishing its own guarantee that funds will be available for decommissioning costs and on a demonstration that the company passes the financial test of (21)(g)2. The terms of the self-guarantee are in (21)(g)3. This schedule establishes criteria for passing the financial test for the self-guarantee and establishes the terms for a self-guarantee.

2. Financial Test.

(i) To pass the financial test, a company must meet all of the following criteria:

(I) Tangible net worth at least ten times the total current decommissioning cost estimate for the total of all facilities or parts thereof (or the current amount required if certification is used) for all decommissioning activities for which the company is responsible as self-guaranteeing licensee.

(II) Assets located in the United States amounting to at least 90 percent of total decommissioning cost estimate for the total of all facilities or parts thereof (or the current amount required if certification is used) for all decommissioning activities for which the company is responsible as self-guaranteeing licensee.

(III) A current rating for its most recent bond issuance of AAA, AA, or A as issued by Standard and Poors (S&P), or Aaa, Aa, or A as issued by Moodys.

(ii) To pass the financial test, a company must meet all of the following additional requirements:

(I) The company must have at least one class of equity securities registered under the Security Exchange Act of 1934.

(II) The company's independent certified public accountant must have compared the data used by the company in the financial test, which is derived from the independently audited, year-end financial statements for the latest fiscal year, with the amounts in such financial statement. In connection with that procedure, the licensee shall inform the Director and Division within 90 days of any matters coming to the attention of the auditor that cause the auditor to believe that the data specified in the financial test should be adjusted and that the company no longer passes the test.

(III) After the initial financial test, the company must repeat passage of the test within 90 days after the close of each succeeding fiscal year.

(iii) If the licensee no longer meets the requirements of (21)(g)2.(i), the licensee must send immediate notice to the Director and Division of its intent to establish alternate financial assurance as specified in the Division's Rules within 120 days of such notice.

3. Company Self-Guarantee.

The terms of a self-guarantee which an applicant or licensee furnishes must provide that:

(i) The guarantee will remain in force unless the licensee sends notice of cancellation by certified mail to the Director and Division. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by the Director, as evidence by the return receipt.

(ii) The licensee shall provide alternative financial assurance as specified in the Division's Rules within 90 days following receipt by the Director of a notice of cancellation of the guarantee.

(iii) The guarantee and financial test provisions must remain in effect until the Director has terminated the license or until another financial assurance method acceptable to the Director has been put in effect by the licensee.

(iv) The licensee will promptly forward to the Department, the Division and the licensee's independent auditor all reports covering the latest fiscal year filed by the licensee with the Securities and Exchange Commission pursuant to the requirements of Section 13 of the Securities and Exchange Act of 1934.

(v) If, at any time, the licensee's most recent bond issuance ceases to be rated in any category of "A" or above by either Standard and Poors or Moodys, the licensee will provide notice in writing of such fact to the Director and Division within 20 days after publication of the change by the rating service. If the licensee's most recent bond issuance ceases to be rated in any category of A or above by both Standard and Poors and Moodys, the licensee no longer meets the requirements of (21)(g)2.(i).

(vi) The applicant or licensee must provide to the Director and Division a written guarantee (a written commitment by a corporate officer) which states that the licensee will fund and carry out the required decommissioning activities or, upon issuance of an order by the Director, the licensee will set up and fund a trust in the amount of the current cost estimates for decommissioning.

(h) Schedule H. Criteria Relating to Use of Financial Tests and Self-Guarantee For Providing Reasonable Assurance of Funds For Decommissioning by Nonprofit Colleges, Universities, and Hospitals.

1. Introduction.

An applicant or licensee may provide reasonable assurance of the availability of funds for decommissioning based on furnishing its own guarantee that funds will be available for decommissioning costs and on a demonstration that the applicant or licensee passes the financial test of (h)2. The terms of the self-guarantee are in (h)3. This schedule establishes criteria for passing the financial test for the self-guarantee and establishes the terms for a self-guarantee.

2. Financial Test.

(i) For colleges and universities, to pass the financial test a college or university must meet either the criteria in (h)2.(i)(I) or the criteria in (h)2.(i)(II).

(I) For applicants or licensees that issue bonds, a current rating for its most recent uninsured, uncollateralized, and unencumbered bond issuance of AAA, AA, or A as issued by Standard and Poors (S&P) or Aaa, Aa, or A as issued by Moodys.

(II) For applicants or licensees that do not issue bonds, unrestricted endowment consisting of assets located in the United States of at least $50 million, or at least 30 times the total current decommissioning cost estimate (or the current amount required if certification is used), whichever is greater, for all decommissioning activities for which the college or university is responsible as a self-guaranteeing licensee.

(ii) For hospitals, to pass the financial test a hospital must meet either the criteria in (h)2.(ii)(I) or the criteria in (h)2.(ii)(II):

(I) For applicants or licensees that issue bonds, a current rating for its most recent uninsured, uncollateralized, and unencumbered bond issuance of AAA, AA, or A as issued by Standard and Poors (S&P) or Aaa, Aa, or A as issued by Moodys.

(II) For applicants or licensees that do not issue bonds, all the following tests must be met:

I. (Total Revenues less total expenditures) divided by total revenues must be equal to or greater than 0.04.

II. Long term debt divided by net fixed assets must be less than or equal to 0.67.

III. (Current assets and depreciation fund) divided by current liabilities must be greater than or equal to 2.55.

IV. Operating revenues must be at least 100 times the total current decommissioning cost estimate (or the current amount required if certification is used) for all decommissioning activities for which the hospital is responsible as a self-guaranteeing license.

(iii) In addition, to pass the financial test, a licensee must meet all the following requirements:

(I) The licensee's independent certified public accountant must have compared the data used by the licensee in the financial test, which is required to be derived from the independently audited year-end financial statements, based on United States generally accepted accounting practices, for the latest fiscal year, with the amounts in such financial statement. In connection with that procedure, the licensee shall inform the Director and Division within 90 days of any matters coming to the attention of the auditor that cause the auditor to believe that the data specified in the financial test should be adjusted and that the licensee no longer passes the test.

(II) After the initial financial test, the licensee must repeat passage of the test within 90 days after the close of each succeeding fiscal year.

(III) If the licensee no longer meets the requirements of (h)1., the licensee must send notice to the Director and Division of its intent to establish alternative financial assurance as specified in Division's Rules. The notice must be sent by certified mail, return receipt requested, within 90 days after the end of the fiscal year for which the year-end financial data show that the licensee no longer meets the financial test requirements. The licensee must provide alternate financial assurance within 120 days after the end of such fiscal year.

3. Self-Guarantee.

The terms of a self-guarantee which an applicant or licensee furnishes must provide that:

(i) The guarantee shall remain in force unless the licensee sends notice of cancellation by certified mail, and/or return receipt requested, to the Director and Division. Cancellation may not occur unless an alternative financial assurance mechanism is in place.

(ii) The licensee shall provide alternative financial assurance as specified in the Division's Rules within 90 days following receipt by the Director of a notice of cancellation of the guarantee.

(iii) The guarantee and financial test provisions must remain in effect until the Director has terminated the license or until another financial assurance method acceptable to the Director has been put in effect by the licensee.

(iv) The applicant or licensee must provide to the Director and Division a written guarantee (a written commitment by a corporate officer or officer of the institution) which states that the licensee will fund and carry out the required decommissioning activities or, upon issuance of an order by the Director, the licensee will set up and fund a trust in the amount of the current cost estimates for decommissioning.

(v) If, at any time, the licensee's most recent bond issuance ceases to be rated in any category of "A" or above by either Standard and Poors or Moodys, the licensee shall provide notice in writing of such fact to the Director and Division within 20 days after publication of the change by the rating service.

Footnotes: [(1)] Values are given only for those materials normally used as gases.

[(2)]µCi/gm for solids.

Footnotes:

[(1)] For combinations of radioactive materials listed above, consideration of the need for an emergency plan is required if the sum of the ratios of the quantity of each radioactive material authorized to the quantity listed for that material in Schedule E exceeds one.

[(2)] Waste packaged in Type B containers does not require an emergency plan.

[a/] To convert µCi to kBq, multiply the µCi value by 37.

[b/] Based on alpha disintegration rate of Th-232, Th-230 and their daughter products.

[c/] Based on alpha disintegration rate of U-238, U-234, and U-235.

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391-3-17-.03 Standards for Protection Against Radiation

(1) **General Provisions.**

(a) Purpose.

This Rule, 391-3-17-.03, establishes standards for protection against ionizing radiation resulting from activities conducted pursuant to licenses issued by the Director. The requirements in this Rule are designed to control the receipt, possession, use, transfer, and disposal of sources of radiation by any licensee so that the total dose to an individual, including doses resulting from all sources of radiation other than background radiation, does not exceed the standards for protection against radiation prescribed in this Rule. However, nothing in this Rule shall be construed as limiting actions that may be necessary to protect health and safety.

(b) Scope.

This Rule applies to persons licensed by the Director on or after January 1, 1994, to receive, possess, use, transfer, or dispose of sources of radiation. The limits in this Rule do not apply to doses due to background radiation, to exposure of patients to radiation for the purpose of medical diagnosis or therapy, or to voluntary participation in medical research programs.

(2) **Definitions.**

The definitions set forth for certain terms under 391-3-17-.01 are applicable to those terms as used in this Rule, unless the term is otherwise defined herein. As used in this Rule:

(a) "Air-purifying respirator" means a respirator with an air-purifying filter, cartridge, or canister that removes specific air contaminants by passing ambient air through the air-purifying element.

(b) "Assigned protection factor" (APF) means the expected workplace level of respiratory protection that would be provided by a properly functioning respirator or a class of respirators to properly fitted and trained users. Operationally, the inhaled concentration can be estimated by dividing the ambient airborne concentration by the APF.

(c) "Atmosphere-supplying respirator" means a respirator that supplies the respirator user with breathing air from a source independent of the ambient atmosphere, and includes supplied-air respirators (SARs) and self-contained breathing apparatus (SCBA) units.

(d) "Annual limit on intake" (ALI) means the derived limit for the amount of radioactive material taken into the body of an adult worker by inhalation or ingestion in a year. ALI is the smaller value of intake of a given radionuclide in a year by the reference man that would result in a committed effective dose equivalent of five rem (0.05 Sv) or a committed dose equivalent of 50 rem (0.5 Sv) to any individual organ or tissue. ALI values for intake by ingestion and by inhalation of selected radionuclides are given in Table I, Columns 1 and 2, of Appendix B to 10 CFR 20.

(e) "Chelating agent" means amine polycarboxylic acids, hydroxycarboxylic acids, gluconic acid, and polycarboxylic acids.

(f) "Chemical description" means a description of the principal chemical characteristics of a low-level radioactive waste.

(g) "Class" means a classification scheme for inhaled material according to its rate of clearance from the pulmonary region of the lung. Materials are classified as D, W, or Y, which apply to a range of clearance half-times: for Class D (Days), of less than ten days; for Class W (Weeks), from ten to 100 days; and for Class Y (Years), of greater than 100 days. For purposes of this Chapter, "lung class" and "inhalation class" are equivalent terms.

(h) "Computer-readable medium" means that the Division's computer can transfer the information from the medium into its memory.

(i) "Consignee" means the designated receiver of the shipment of low-level radioactive waste.

(j) "Constraint (dose constraint)" means a value above which specified licensee actions are required.

(k) "Critical Group" means the group of individuals reasonably expected to receive the greatest exposure to residual radioactivity for any applicable set of circumstances.

(l) "Declared pregnant woman" means any woman who has voluntarily informed the licensee, in writing, of her pregnancy and the estimated date of conception. The declaration remains in effect until the declared pregnant woman withdraws the declaration in writing or is no longer pregnant.

(m) "Decommission" means to remove a facility or site safely from service and reduce residual radioactivity to a level that permits release of the property for unrestricted use and termination of the license.

(n) "Decontamination facility" means a facility operating under a Division, U.S. Nuclear Regulatory Commission or Agreement State license whose principal purpose is decontamination of equipment or materials to accomplish recycle, reuse, or other waste management objectives, and, for purposes of this part, is not considered to be a consignee for LLW shipments.

(o) "Demand respirator" means an atmosphere-supplying respirator that admits breathing air to the facepiece only when a negative pressure is created inside the facepiece by inhalation.

(p) "Derived air concentration" (DAC) means the concentration of a given radionuclide in air which, if breathed by the reference man for a working year of 2,000 hours under conditions of light work (inhalation rate of 1.2 cubic meters of air per hour), results in an intake of one ALI. DAC values are given in Table I, Column 3 of Appendix B to 10 CFR 20.

(q) "Derived air concentration-hour" (DAC-hour) means the product of the concentration of radioactive material in air, expressed as a fraction or multiple of the derived air concentration for each radionuclide, and the time of exposure to that radionuclide, in hours. A licensee may take 2,000 DAC-hours to represent one ALI, equivalent to a committed effective dose equivalent of five rem (0.05 Sv).

(r) "Disposable respirator" means a respirator for which maintenance is not intended and that is designed to be discarded after excessive breathing resistance, sorbent exhaustion, physical damage, or end-of-service-life renders it unsuitable for use. Examples of this type of respirator are a disposable half-mask respirator or a disposable escape-only self-contained breathing apparatus (SCBA).

(s) "Disposal container" means a container principally used to confine low-level radioactive waste during disposal operations at a land disposal facility (also see "high integrity container"). Note that for some shipments, the disposal container may be the transport package.

(t) "Distinguishable from background" means that the detectable concentration of a radionuclide is statistically different from the background concentration of that radionuclide in the vicinity of the site or, in the case of structures, in similar materials using adequate measurement technology, survey, and statistical techniques.

(u) "Dosimetry processor" means a person that processes and evaluates individual monitoring equipment devices in order to determine the radiation dose delivered to the monitoring devices.

(v) "EPA identification number" means the number received by a transporter following application to the Administrator of EPA as required by 40 CFR part 263.

(w) "Filtering facepiece" (dust mask) means a negative pressure particulate respirator with a filter as an integral part of the facepiece or with the entire facepiece composed of the filtering medium, not equipped with elastomeric sealing surfaces and adjustable straps.

(x) "Fit factor" means a quantitative estimate of the fit of a particular respirator to a specific individual, and typically estimates the ratio of the concentration of a substance in ambient air to its concentration inside the respirator when worn.

(y) "Fit test" means the use of a protocol to qualitatively or quantitatively evaluate the fit of a respirator on an individual.

(z) "Generator" means a licensee operating under a Division, U.S. Nuclear Regulatory Commission or Agreement State license who (1) is a waste generator or (2) is the licensee to whom waste can be attributed within the context of the Low-Level Radioactive Waste Policy Amendments Act of 1985 (e.g., waste generated as a result of decontamination or recycle activities).

(aa) "Helmet" means a rigid respiratory inlet covering that also provides head protection against impact and penetration.

(bb) "High integrity container (HIC)" means a container commonly designed to meet the structural stability requirements of Rule 391-3-17-.03(13)(g), and to meet Department of Transportation requirements for a Type A package.

(cc) "Hood" means a respiratory inlet covering that completely covers the head and neck and may also cover portions of the shoulders and torso.

(dd) "Land disposal facility" means the land, buildings and structures, and equipment that are intended to be used for the disposal of radioactive waste. For purposes of this Rule, a "geologic repository" as defined in 10 CFR Part 60 is not considered a "land disposal facility."

(ee) "Lens dose equivalent" (LDE) means the external exposure of the lens of the eye and is taken as the dose equivalent at a tissue depth of 0.3 centimeter (300 mg/cm^2).

(ff) "Loose-fitting facepiece" means a respiratory inlet covering that is designed to form a partial seal with the face.

(gg) "Nationally tracked source" means a sealed source containing a quantity equal to or greater than Category 1 or Category 2 levels of any radioactive material listed in Table 3 of 391-3-17-.03(15). In this context a sealed source is defined as radioactive material that is sealed in a capsule or closely bonded, in a solid form and which is not exempt from regulatory control. It does not mean material encapsulated solely for disposal, or nuclear material contained in any fuel assembly, subassembly, fuel rod, or fuel pellet. Category 1 nationally tracked sources are those containing radioactive material at a quantity equal to or greater than the Category 1 threshold. Category 2 nationally tracked sources are those containing radioactive material at a quantity equal to or greater than the Category 2 threshold but less than the Category 1 threshold.

(hh) "Negative pressure respirator" (tight fitting) means a respirator in which the air pressure inside the facepiece is negative during inhalation with respect to the ambient air pressure outside the respirator.

(ii) "Nonstochastic effect" means a health effect, the severity of which varies with the dose and for which a threshold is believed to exist. Radiation-induced cataract formation is an example of a nonstochastic effect. For purposes of this Chapter, "deterministic effect" is an equivalent term.

(jj) "Positive pressure respirator" means a respirator in which the pressure inside the respiratory inlet covering exceeds the ambient air pressure outside the respirator.

(kk) "Physical description" means the items called for on NRC Form 541 or equivalent form to describe a low-level radioactive waste.

(ll) "Planned special exposure" means an infrequent exposure to radiation separate from and in addition to the annual occupational dose limits.

(mm) "Powered air-purifying respirator" (PAPR) means an air-purifying respirator that uses a blower to force the ambient air through air-purifying elements to the inlet covering.

(nn) "Pressure demand respirator" means a positive pressure atmosphere-supplying respirator that admits breathing air to the facepiece when the positive pressure is reduced inside the facepiece by inhalation.

(oo) "Qualitative fit test" (QLFT) means a pass/fail fit test to assess the adequacy of respirator fit that relies on the individual's response to the test agent.

(pp) "Quantitative fit test" (QNFT) means an assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator.

(qq) "Reference man" means a hypothetical aggregation of human physical and physiological characteristics determined by international consensus. These characteristics may be used by researchers and public health workers to standardize results of experiments and to relate biological insult to a common base.

(rr) "Residual radioactivity" means radioactivity in structures, materials, soils, groundwater, and other media at a site resulting from activities under the licensee's control. This includes radioactivity from all licensed and unlicensed sources used by the licensee, but excludes background radiation. It also includes radioactive materials remaining at

the site as a result of routine or accidental releases of radioactive material at the site and previous burials at the site, even if those burials were made in accordance with the provisions of Rule .03 of this Chapter.

(ss) "Residual waste" means low-level radioactive waste resulting from processing or decontamination activities that cannot be easily separated into distinct batches attributable to specific waste generators. This waste is attributable to the processor or decontamination facility, as applicable.

(tt) "Respiratory protective device" means an apparatus, such as a respirator, used to reduce an individual's intake of airborne radioactive materials.

(uu) "Self-contained breathing apparatus" (SCBA) means an atmosphere-supplying respirator for which the breathing air source is designed to be carried by the user.

(vv) "Sanitary sewerage" means a system of public sewers for carrying off waste water and refuse, but excluding sewage treatment facilities, septic tanks, and leach fields owned or operated by the licensee.

(ww) "Shipper" means the licensed entity (i.e., the waste generator, waste collector, or waste processor) who offers low-level radioactive waste for transportation, typically consigning this type of waste to a licensed waste collector, waste processor, or land disposal facility operator.

(xx) "Shipping paper" means NRC Form 540 and, if required, NRC Form 540A or equivalent forms which include the information required by DOT in 49 CFR Part 172.

(yy) "Source material" means

1. Uranium or thorium, or any combination thereof, in any physical or chemical form; or

2. Ores that contain by weight one-twentieth of one percent (0.05 percent) or more of uranium, thorium, or any combination thereof. Source material does not include special nuclear material.

(zz) "Stochastic effect" means a health effect that occurs randomly and for which the probability of the effect occurring, rather than its severity, is assumed to be a linear function of dose without threshold. Hereditary effects and cancer incidence are examples of stochastic effects. For purposes of this Chapter, "probabilistic effect" is an equivalent term.

(aaa) "Supplied-air respirator" (SAR) or airline respirator means an atmosphere-supplying respirator for which the source of breathing air is not designed to be carried by the user.

(bbb) "Tight-fitting facepiece" means a respiratory inlet covering that forms a complete seal with the face.

(ccc) "Uniform Low-Level Radioactive Waste Manifest" or "Uniform Manifest" means the combination of NRC Forms 540, 541, and if necessary, 542, and their respective continuation sheets as needed, or equivalent forms.

(ddd) "User seal check" (fit check) means an action conducted by the respirator user to determine if the respirator is properly seated to the face. Examples include negative pressure check, positive pressure check, irritant smoke check, or isoamyl acetate check.

(eee) "Very high radiation area" means an area, accessible to individuals, in which radiation levels from radioactive materials external to the body could result in an individual receiving an absorbed dose in excess of 500 rads (5 Gray) in one hour at one meter from a source of radiation or from any surface that the radiation penetrates.[1]

(fff) "Waste collector" means an entity, operating under a Division, U.S. Nuclear Regulatory Commission or Agreement State license, whose principal purpose is to collect and consolidate waste generated by others, and to transfer this waste, without processing or repackaging the collected waste, to another licensed waste collector, licensed waste processor, or licensed land disposal facility.

(ggg) "Waste description" means the physical, chemical and radiological description of a low-level radioactive waste as called for on NRC Form 541 or equivalent form.

(hhh) "Waste generator" means an entity, operating under a Division, U.S. Nuclear Regulatory Commission or Agreement State license, who (1) possesses any material or component that contains radioactivity or is radioactively contaminated for which the licensee foresees no further use, and (2) transfers this material or component to a licensed land disposal facility or to a licensed waste collector or processor for handling or treatment prior to disposal. A licensee performing processing or decontamination services may be a "waste generator" if the transfer of low-level radioactive waste from its facility is defined as "residual waste."

(iii) "Waste processor" means an entity, operating under a Division, U.S. Nuclear Regulatory Commission or Agreement State license, whose principal purpose is to process, repackage, or otherwise treat low-level radioactive material or waste generated by others prior to eventual transfer of waste to a licensed low-level radioactive waste land disposal facility.

(jjj) "Waste type" means a waste within a disposal container having a unique physical description (i.e., a specific waste descriptor code or description; or a waste sorbed on or solidified in a specifically defined media).

(kkk) "Weighting factor" (w_T) for an organ or tissue (T) means the proportion of the risk of stochastic effects resulting from irradiation of that organ or tissue to the total risk of stochastic effects when the whole body is irradiated uniformly. For calculating the effective dose equivalent, the values of w_T are:

ORGAN DOSE WEIGHTING FACTORS

Organ or Tissue	w_T
Gonads	0.25
Breast	0.15
Red bone marrow	0.12
Lung	0.12
Thyroid	0.03
Bone surfaces	0.03
Remainder	0.30[a]
Whole Body	1.00[b]

[a] 0.30 results from 0.06 for each of five "remainder" organs, excluding the skin and the lens of the eye, that receive the highest doses.

[b] For the purpose of weighting the external whole body dose, for adding it to the internal dose, a single weighting factor, $w_T = 1.0$, has been specified. The use of other weighting factors for external exposure will be approved on a case-by-case basis until such time as specific guidance is issued.

(3) **Implementation.**

(a) Any existing license condition that is more restrictive than this Rule remains in force until there is an amendment or renewal of the license.

(b) If a license condition exempts a licensee from a provision of Rule 391-3-17-.03 in effect on or before January 1, 1994, it also exempts the licensee from the corresponding provision of this Rule.

(c) If a license condition cites provisions of Rule 391-3-17-.03 in effect prior to January 1, 1994, which do not correspond to any provisions of this Rule, the license condition remains in force until there is an amendment or renewal of the license that modifies or removes this condition.

(4) **Radiation Protection Programs.**

(a) Each licensee shall develop, document, and implement a Radiation Protection Program sufficient to ensure compliance with the provisions of this Rule. See (14)(b) of this Rule for record-keeping requirements relating to these Programs.

(b) The licensee shall use, to the extent practical, procedures and engineering controls based upon sound radiation protection principles to achieve occupational doses and doses to members of the public that are as low as is reasonably achievable (ALARA).

(c) The licensee shall, at least annually, review the Radiation Protection Program content and implementation.

(d) To implement the ALARA requirements of .03(4)(b), and notwithstanding the requirements in .03(5)(i) of this rule, a constraint on air emissions of radioactive material to the environment, excluding Radon-222 and its daughters, shall be established by licensees such that the individual member of the public likely to receive the highest dose will not be expected to receive a total effective dose equivalent in excess of ten (10) mrem (0.1 mSv) per year from these emissions. If a licensee subject to this requirement exceeds this dose constraint, the licensee shall report the exceedance as provided in .03(15)(c) and promptly take appropriate corrective action to ensure against recurrence.

(5) **Occupational Dose Limits and Dose Limits for Individual Members of the Public.**

(a) Occupational Dose Limits for Adults.

1. The licensee shall control the occupational dose to individual adults, except for planned special exposures pursuant to (5)(f) of this Rule, in accordance with the following dose limits:

(i) An annual limit, which is the more limiting of:

(I) The total effective dose equivalent being equal to five (5) rem (0.05 Sv); or

(II) The sum of the deep dose equivalent and the committed dose equivalent to any individual organ or tissue other than the lens of the eye being equal to 50 rem (0.50 Sv).

(ii) The annual limits to the lens of the eye, to the skin of the whole body, and to the skin of the extremities, which are:

(I) A lens dose equivalent of 15 rem (0.15 Sv); and

(II) A shallow dose equivalent of 50 rem (0.50 Sv) to the skin of the whole body or to the skin of any extremity.

2. Doses received in excess of the annual limits, including doses received during accidents, emergencies, and planned special exposures, shall be subtracted from the limits for planned special exposures that the individual may receive during the current year and during the individual's lifetime, listed in (5)(f)5.(i) and (ii) of this Rule.

3. When the external exposure is determined by measurement with an external personal monitoring device, the deep-dose equivalent must be used in place of the effective dose equivalent, unless the effective dose equivalent is determined by a dosimetry method approved by the NRC. The assigned deep dose equivalent shall be for the portion of the body receiving the highest exposure. The assigned shallow dose equivalent shall be the dose averaged over the contiguous ten (10) square centimeters of skin receiving the highest exposure.

4. The deep dose equivalent, lens dose equivalent, and shallow dose equivalent may be assessed from surveys or other radiation measurements for the purpose of demonstrating compliance with the occupational dose limits, if the individual monitoring device was not in the region of highest potential exposure or the results of individual monitoring are unavailable.

5. Derived air concentration (DAC) and annual limit on intake (ALI) values are specified in Table I of Appendix B to 10 CFR 20 and may be used to determine the individual's dose and to demonstrate compliance with the occupational dose limits. See (14)(g) of this Rule for maintaining records of these exposures.

6. Notwithstanding the annual dose limits, the licensee shall limit the soluble uranium intake by an individual to ten milligrams in a week in consideration of chemical toxicity. See footnote 3 of Appendix B 10 CFR 20.

7. The licensee shall reduce the dose that an individual may be allowed to receive in the current year by the amount of occupational dose received while employed by any other person during the current year. See (5)(e) of this Rule.

(b) Compliance with Requirements for Summation of External and Internal Doses.

1. General Requirements. If the licensee is required to monitor pursuant to both (8)(b)1. and 2. of this Rule, the licensee shall demonstrate compliance with the dose limits by summing external and internal doses. If the licensee is required to monitor only pursuant to (8)(b)1. of this Rule or only pursuant to (8)(b)2. of this Rule, then summation is not required to demonstrate compliance with the dose limits. The licensee must demonstrate compliance with the requirements for summation of external and internal doses pursuant to (5)(b)2., 3., and 4. of this Rule. The dose equivalents for the lens of the eye, the skin, and the extremities are not included in the summation, but are subject to separate limits.

2. Intake by Inhalation. If the only intake of radionuclides is by inhalation, the total effective dose equivalent limit is not exceeded if the sum of the deep dose equivalent divided by the total effective dose equivalent limit and one of the following does not exceed unity:

(i) The sum of the fractions of the inhalation ALI for each radionuclide;

(ii) The total number of derived air concentration-hours (DAC-hours) for all radionuclides divided by 2,000; or

(iii) The sum of the calculated committed effective dose equivalents to all significantly irradiated organs or tissues (T) calculated from bioassay data using appropriate biological models and expressed as a fraction of the annual limit. For purposes of this requirement, an organ or tissue is deemed to be significantly irradiated if, for that organ or tissue, the product of the weighting factors, w_T, and the committed dose equivalent, $H_{T,50}$, per unit intake is greater than ten percent of the maximum weighted value of H_{50} (i.e., $w_T H_{T,50}$), per unit intake for any organ or tissue.

3. Intake by Oral Ingestion. If the occupationally-exposed individual receives an intake of radionuclides by oral ingestion greater than ten percent of the applicable oral ALI, the licensee shall account for this intake and include it in demonstrating compliance with the limits.

4. Intake through Wounds or Absorption through Skin. The licensee shall evaluate and, to the extent practical, account for intakes through wounds or skin absorption. The intake through intact skin has been included in the calculation of DAC for hydrogen-3 and does not need to be evaluated or accounted for pursuant to (5)(b)4. of this Rule.

(c) Determination of External Dose from Airborne Radioactive Material.

1. Licensees shall, when determining the dose from airborne radioactive material, include the contribution to the deep dose equivalent, lens dose equivalent, and shallow dose equivalent from external exposure to the radioactive cloud. See Appendix B, footnotes 1 and 2, of 10 CFR 20.

2. Airborne radioactivity measurements and DAC values shall not be used as the primary means to assess the deep dose equivalent when the airborne radioactive material includes radionuclides other than noble gases or if the cloud of airborne radioactive material is not relatively uniform. The determination of the deep dose equivalent to an individual shall be based upon measurements using instruments or individual monitoring devices.

(d) Determination of Internal Exposure.

1. For purposes of assessing the dose used to determine compliance with occupational dose equivalent limits, the licensee shall, when required under (8)(b) of this Rule, take suitable and timely measurements of:

(i) Concentrations of radioactive materials in air in work areas during operations;

(ii) Quantities of radionuclides in the body;

(iii) Quantities of radionuclides excreted from the body; or

(iv) Combinations of these measurements.

2. Unless respiratory protective equipment is used, as provided in (10)(d) of this Rule, or the assessment of intake is based on bioassays, the licensee shall assume that an individual inhales radioactive material at the airborne concentration in which the individual is present.

3. When specific information on the physical and biochemical properties of the radionuclides taken into the body or the behavior of the material in an individual is known, the licensee may:

(i) Use that information to calculate the committed effective dose equivalent, and, if used, the licensee shall document that information in the individual's record;

(ii) Upon prior approval of the Division, adjust the DAC or ALI values to reflect the actual physical and chemical characteristics of airborne radioactive material, for example, aerosol size distribution or density; and

(iii) Separately assess the contribution of fractional intakes of Class D, W, or Y compounds of a given radionuclide to the committed effective dose equivalent. See Appendix B of 10 CFR 20.

4. If the licensee chooses to assess intakes of Class Y material using the measurements given in (5)(d)1.(ii) or (iii) of this Rule, the licensee may delay the recording and reporting of the assessments for periods up to seven months, unless otherwise required by (15)(b) or (15)(c) of this Rule. This delay permits the licensee to make additional measurements basic to the assessments.

5. If the identity and concentration of each radionuclide in a mixture are known, the fraction of the DAC applicable to the mixture for use in calculating DAC-hours shall be either:

(i) The sum of the ratios of the concentration to the appropriate DAC value (i.e. D, W, or Y) from Appendix B of 10 CFR 20, for each radionuclide in the mixture; or

(ii) The ratio of the total concentration for all radionuclides in the mixture to the most restrictive DAC value for any radionuclide in the mixture.

6. If the identity of each radionuclide in a mixture is known, but the concentration of one or more of the radionuclides in the mixture is not known, the DAC for the mixture shall be the most restrictive DAC of any radionuclide in the mixture.

7. When a mixture of radionuclides in the air exists, a licensee may disregard certain radionuclides in the mixture if:

(i) The licensee uses the total activity of the mixture in demonstrating compliance with the dose limits in (5)(a) of this Rule and in complying with the monitoring requirements in (8)(b)2. of this Rule;

(ii) The concentration of any radionuclide disregarded is less than ten percent of its DAC; and

(iii) The sum of these percentages for all of the radionuclides disregarded in the mixture does not exceed 30 percent.

8. When determining the committed effective dose equivalent, the following information may be considered:

(i) In order to calculate the committed effective dose equivalent, the licensee may assume that the inhalation of one ALI, or an exposure of 2,000 DAC-hours, results in a committed effective dose equivalent of five rem (0.05Sv) for radionuclides that have their ALIs or DACs based on the committed effective dose equivalent;

(ii) When the ALI (and the associated DAC) is determined by the non-stochastic organ dose limit of 50 rem (0.50 Sv), the intake of radionuclides that would result in a committed effective dose equivalent of five rem (0.05 Sv), (i.e., the stochastic ALI) is listed in parentheses in Table I of Appendix B of 10 CFR 20. In this case, the licensee may, as a simplifying assumption, use the stochastic ALIs to determine the committed effective dose equivalent. However, if the licensee uses the stochastic ALIs, the licensee shall also demonstrate that the limit in (5)(a)1.(i)(II) of this Rule is not exceeded.

(e) Determination of Prior Occupational Dose.

1. For each individual who is likely to receive, in a year, an occupational dose requiring monitoring pursuant to (8)(b) of this Rule, the licensee shall:

(i) Determine the occupational radiation dose received during the current year; and

(ii) Attempt to obtain the records of lifetime cumulative occupational radiation dose.

2. Prior to permitting an individual to participate in a planned special exposure, the licensee shall determine:

(i) The internal and external doses from all previous planned special exposures; and

(ii) All doses in excess of the limits, including doses received during accidents and emergencies, received during the lifetime of the individual.

3. In complying with the requirements of (5)(e)1. of this Rule, a licensee may:

(i) Accept, as a record of the occupational dose that the individual received during the current year, a written signed statement from the individual, or from the individual's most recent employer for work involving radiation exposure, that discloses the nature and the amount of any occupational dose that the individual may have received during the current year;

(ii) Accept, as the record of lifetime cumulative radiation dose, an up-to-date Division Form "Occupational Radiation Exposure History" or equivalent, signed by the individual and countersigned by an appropriate official of the most recent employer for work involving radiation exposure, or the individual's current employer if the individual is not employed by the licensee; and

(iii) Obtain the individual's dose equivalent from the most recent employer for work involving radiation exposure, or the individual's current employer if the individual is not employed by the licensee, by telephone, telegram, electronic media, facsimile, or letter. The licensee shall request a written verification of the dose data if the authenticity of the transmitted report cannot be established.

4. The licensee shall record the exposure history, as required by (5)(e)1. of this Rule, on Division Form "Occupational Radiation Exposure History" or other clear and legible record, and all of the information required on that form. The form or record shall show each period in which the individual received occupational exposure to radiation or radioactive material and shall be signed by the individual who received the exposure. For each period for which the licensee obtains, the licensee shall use the dose shown in the report in preparing the Division Form "Occupational Radiation Exposure History" or equivalent form. For any period in which the licensee does not obtain a report, the licensee shall place a notation on the "Occupational Radiation Exposure History" or equivalent form indicating the periods of time for which data are not available.

5. Licensees are not required to partition historical dose between external dose equivalents and internal committed dose equivalents of radionuclides assessed under the Regulations in effect before January 1, 1994. Further, occupational exposure histories obtained and recorded on Division Form "Occupational Radiation Exposure

History" or equivalent before January 1, 1994, might not have included effective dose equivalent but may be used in the absence of specific information on the intake of radionuclides by the individual.

6. If the licensee is unable to obtain a complete record of an individual's current and previously accumulated occupational dose, the licensee shall assume:

(i) In establishing administrative controls under (5)(a)7. of this Rule, for the current year, that the allowable dose limit for the individual is reduced by 1.25 rem (12.5 mSv) for each quarter for which records were unavailable and the individual was engaged in activities that could have resulted in occupational radiation exposure; and

(ii) That the individual is not available for planned special exposures.

7. The licensee shall retain the records on Division Form "Occupational Radiation Exposure History" or equivalent until the Director terminates each pertinent license requiring this record. The licensee shall retain records used in preparing Division Form "Occupational Radiation Exposure History" or equivalent for three years after the record is made.

(f) Planned Special Exposures. A licensee may authorize an adult worker to receive doses in addition to and accounted for separately from the doses received under the limits specified in (5)(a) of this Rule provided that each of the following conditions is satisfied:

1. The licensee authorizes a planned special exposure only in an exceptional situation when alternatives that might avoid the higher exposure estimated to result from the planned special exposure are unavailable or impractical (i.e., industrial radiography source retrieval for an area that cannot be evacuated).

2. The management official of the licensee (and employer if the employer is not the licensee) specifically authorizes the planned special exposure, in writing, before the exposure occurs.

3. Before a planned special exposure, the licensee ensures that each individual involved is:

(i) Informed of the purpose of the planned operation;

(ii) Informed of the estimated doses and associated potential risks and specific radiation levels or other conditions that might be involved in performing the task; and

(iii) Instructed in the measures to be taken to keep the dose ALARA considering other risks that may be present.

4. Prior to permitting an individual to participate in a planned special exposure, the licensee ascertains prior doses as required by (5)(e)2. of this Rule during the lifetime for each individual involved.

5. Subject to (5)(a)2. of this Rule, the licensee shall not authorize a planned special exposure that would cause an individual to receive a dose from all planned special exposures and all doses in excess of the limits to exceed:

(i) The numerical values of any of the dose limits in (5)(a)1. of this Rule in any year; and

(ii) Five times the annual dose limits in (5)(a)1. of this Rule during the individual's lifetime.

6. The licensee maintains records of the conduct of a planned special exposure in accordance with (14)(f) of this Rule and submits a written report in accordance with (15)(d) of this Rule.

7. The licensee records the best estimate of the dose resulting from the planned special exposure in the individual's record and informs the individual, in writing, of the dose within 30 days after the date of the planned special exposure. The dose from planned special exposures shall not be considered in controlling the future occupational dose of the individual pursuant to (5)(a)1. of this Rule but shall be included in evaluations required by (5)(f)1. and (5)(f)5. of this Rule.

(g) Occupational Dose Limits for Minors. The annual occupational dose limits for minors are ten percent of the annual occupational dose limits specified for adult workers in (5)(a) of this Rule.

(h) Dose to an Embryo/Fetus.

1. The licensee shall ensure that the dose equivalent to an embryo/fetus during the entire pregnancy, due to occupational exposure of a declared pregnant woman, does not exceed 0.5 rem (5 mSv). For record-keeping requirements, see (14)(g) of this Rule.

2. The licensee shall make efforts to avoid substantial variation[2] above a uniform monthly exposure rate to a declared pregnant woman so as to satisfy the limit in (5)(h)1. of this Rule.

3. The dose equivalent to an embryo/fetus shall be taken as the sum of:

(i) The deep-dose equivalent to the declared pregnant woman; and

(ii) The dose equivalent to the embryo/fetus from radionuclides in the embryo/fetus and radionuclides in the declared pregnant woman.

4. If by the time the woman declares pregnancy to the licensee the dose equivalent to the embryo/fetus is found to have exceeded 0.50 rem (5.0 mSv), or is within 0.05 rem (0.5 mSv) of this dose equivalent, the licensee shall be deemed to be in compliance with (5)(h)1. of this Rule if the additional dose equivalent to the embryo/fetus does not exceed 0.05 rem (0.5 mSv) during the remainder of the pregnancy.

(i) Radiation Dose Limits for Individual Members of the Public.

1. Each licensee shall conduct operations so that:

(i) Except as provided in (5)(i)1.(iii) the total effective dose equivalent to individual members of the public from the licensed operation does not exceed 0.1 rem (1 mSv) in a year, exclusive of the dose contributions from background radiation, from any medical administration the individual has received, from exposure to individuals administered radioactive material and released in accordance with Rule .05(37), from voluntary participation in medical research programs, and from the licensee's disposal of radioactive material into sanitary sewerage in accordance with (13)(c) of this Rule; and

(ii) The dose in any unrestricted area from external sources, exclusive of the dose contributions from individuals administered radioactive material and released in accordance with Rule .05(37), does not exceed 0.002 rem (0.02 mSv) in any one hour.

(iii) The total effective dose equivalent to individual members of the public from infrequent exposure to radiation from radiation machines does not exceed 0.5 rem (5 mSv).

2. A licensee or license applicant may apply for prior Division authorization to operate up to an annual dose limit for an individual member of the public of 0.5 rem (5 mSv). The licensee or license applicant shall include the following information in this application:

(ii) The licensee's program to assess and control dose within the 0.5 rem (5 mSv) annual limit; and

(iii) The procedure to be followed to maintain the dose as low as is reasonably achievable (ALARA).

3. In addition to the requirements of this Rule, a licensee subject to the provisions of the U.S. Environmental Protection Agency's (EPA) generally applicable environmental radiation standards in 40 CFR Part 190 shall comply with those standards.

4. The Division may impose additional restrictions on radiation levels in unrestricted areas and on the total quantity of radionuclides that a licensee may release in effluents in order to restrict the collective dose.

(j) Compliance with Dose Limits for Individual Members of the Public.

1. The licensee shall make or cause to be made, as appropriate, surveys of radiation levels in unrestricted areas and radioactive materials in effluents released to unrestricted areas to demonstrate compliance with the dose limits for individual members of the public in (5)(i) of this Rule.

2. A licensee shall show compliance with the annual dose limit in (5)(i) of this Rule by:

(i) Demonstrating by measurement or calculation that the total effective dose equivalent to the individual likely to receive the highest dose from the licensed operation does not exceed the annual dose limit; or

(ii) Demonstrating that:

(I) The annual average concentrations of radioactive material released in gaseous and liquid effluents at the boundary of the unrestricted area do not exceed the values specified in Table II of Appendix B of 10 CFR 20.

(II) If an individual were continually present in an unrestricted area, the dose from external sources would not exceed 0.002 rem (0.02 mSv) in one hour and 0.05 rem (0.50 mSv) in one year.

3. Upon approval from the Division, the licensee may adjust the effluent concentration values in Appendix B, Table II of 10 CFR 20, for members of the public, to take into account the actual physical and chemical characteristics of the effluents (e.g., aerosol size distribution, solubility, density, radioactive decay equilibrium, and chemical form).

(6) **Testing for Leakage or Contamination of Sealed Sources.**

(a) The licensee in possession of any sealed source shall assure that:

1. Each sealed source, other than hydrogen-3, with a half-life greater than 30 days and in any form other than gas, shall be tested for leakage or contamination as follows:

(i) Prior to initial use;

(ii) Unless otherwise authorized by the Division, at intervals not to exceed six months, except that each source designed for the purpose of emitting alpha particles shall be tested at intervals not to exceed three months;

(iii) At any other time there is reason to suspect that a sealed source might have been damaged or might be leaking, it shall be tested for leakage before further use; and

(iv) In the absence of a certificate from a transferor indicating that a test for leakage has been made within six months prior to the transfer, the sealed source shall not be put into use until tested and the results received.

2. Tests for leakage for all sealed sources, except those manufactured to contain radium, shall be capable of detecting the presence of 0.005 µCi (185 Bq) of radioactive material on a test sample. Test samples shall be taken from the sealed source or from the surfaces of the container in which the sealed source is stored or mounted on which one might expect contamination to accumulate. For sealed sources contained in a device, test samples are obtained when the source is in the "off" position.

3. Tests for leakage for sources manufactured to contain radium shall be capable of detecting an absolute leakage rate of 0.001 µCi (37 Bq) of radon-222 in a 24-hour period when the collection efficiency for radon-222 and its daughters has been determined with respect to collection method, volume, and time.

4. Test samples shall also be taken from the interior surfaces of the container in which sealed sources of radium are stored. This test shall be capable of detecting the presence of 0.005 µCi (185 Bq) of a radium daughter that has a half-life greater than four days.

5. Notwithstanding the periodic test for leakage required, any sealed source is exempt from such tests for leakage when the sealed source contains 100 µCi (3.7 MBq) or less of beta- or gamma-emitting material or ten µCi (370 kBq) or less of alpha-emitting material.

(b) Tests for leakage or contamination shall be performed by persons specifically authorized by the Director or Division, an Agreement State, or the U.S. Nuclear Regulatory Commission to perform such services.

(c) The following shall be considered evidence that the sealed source is leaking:

1. The presence of 0.005 µCi (185 Bq) or more of removable contamination on any test sample. If the test of a sealed source, other than radium, reveals the presence of 0.005 µCi (185 Bq) or more of removable contamination, the licensee shall immediately withdraw the sealed source from use, take action to prevent the spread of contamination, and cause the sealed source to be decontaminated and repaired or to be disposed of in accordance with this Rule.

2. Leakage of 0.001 µCi (37 Bq) of radon-222 per 24 hours for sealed sources manufactured to contain radium. If the test of a sealed source manufactured to contain radium reveals the presence of removable contamination resulting from the decay of 0.005 µCi (185 Bq) or more of radium-226, the licensee shall immediately withdraw the sealed source from use, take action to prevent the spread of contamination, and cause the sealed source to be decontaminated and repaired or to be disposed of in accordance with this Rule.

(d) Records of test results for sealed sources shall be made pursuant to (14)(d).

(e) Reports of test results for leaking or contaminated sealed sources shall be made pursuant to (15)(g) of this Rule.

(7) **Radiological Requirements for License Termination.**

(a) General provisions and scope.

1. The requirements in this section apply to the decommissioning of facilities licensed under Rule .02(8)(g), (Licensing of Radioactive Materials. Amended);

2. The requirements in this section do not apply to sites which:

(i) Have been decommissioned prior to April 18, 2002 in accordance with requirements identified in .03(7) and Rule .02 of this Chapter; or

(ii) Have previously submitted and received Division approval on a decommissioning plan by April 18, 2002.

3. After a site has been decommissioned and the license terminated in accordance with the requirements in this section, the Division will require additional cleanup only if, based on new information, it determines that the requirements of this section were not met and residual radioactivity remaining at the site could result in significant threat to public health and safety.

4. When calculating TEDE to the average member of the critical group the licensee shall determine the peak annual TEDE dose expected within the first 1,000 years after decommissioning.

(b) Radiological requirements for unrestricted use. A site will be considered acceptable for unrestricted use if the residual radioactivity that is distinguishable from background radiation results in a TEDE to an average member of the critical group that does not exceed 25 mrem (0.25 mSv) per year, including that from groundwater sources of drinking water, and the residual radioactivity has been reduced to levels that are as low as reasonably achievable (ALARA). Determination of the levels which are ALARA must take into account consideration of any detriments, such as deaths from transportation accidents, expected to potentially result from decontamination and waste disposal.

(c) Alternate requirements for license termination.

1. The Director may terminate a license using alternate requirements greater than the dose requirements of .03(7)(b) if the licensee:

(i) Provides assurance that public health and safety would continue to be protected, and that it is unlikely that the dose from all man-made sources combined, other than medical, would be more than the 100 mrem/year (1 mSv/year) limit of .03(5)(i), by submitting an analysis of possible sources of exposure;

(ii) Reduces doses to ALARA levels, taking into consideration any detriments such as traffic accidents expected to potentially result from decontamination and waste disposal;

(iii) Has provided sufficient financial assurance in the form of a trust fund to enable an independent third party, including a governmental custodian of a site, to assume and carry out responsibilities for any necessary control and maintenance of the site; and

(iv) Has submitted a decommissioning plan to the Division indicating the licensee's intent to decommission in accordance with requirements of Rule .02(18)(d), and specifying that the licensee proposes to decommission by use of alternate requirements. The licensee shall document in the decommissioning plan how the advice of individuals and institutions in the community who may be affected by the decommissioning has been sought and addressed, as appropriate, following analysis of that advice. In seeking such advice, the licensee shall provide for:

(I) Participation by representatives of a broad cross section of community interests who may be affected by the decommissioning;

(II) An opportunity for a comprehensive, collective discussion on the issues by the participants represented; and

(III) A publicly available summary of the results of all such discussions, including a description of the individual viewpoints of the participants on the issues and the extent of agreement and disagreement among the participants on the issues.

2. The use of alternate requirements to terminate a license requires the approval of the Director after consideration of the Division's recommendations that will address any comments provided by the U.S. Environmental Protection Agency (EPA) and any public comments submitted in accordance with (7)(d) of this rule.

(d) Public notification and public participation. Upon the receipt of a decommissioning plan from the licensee, or a proposal by the licensee for release of a site in accordance with (7)(c) of this Rule, or whenever the Division deems such notice to be in the public interest, the Division will:

1. Notify and solicit comments from:

(i) Local and State governments in the vicinity of the site and any Indian Nation or other indigenous people that have treaty or statutory rights that could be affected by the decommissioning; and

(ii) The EPA for cases where the licensee proposes to release a site in accordance with (7)(c).

2. Publish a notice in the local newspaper(s), letters to State or local organizations, or other appropriate forum, that is readily accessible to individuals in the vicinity of the site, and solicit comments from affected parties.

(e) Minimization of contamination.

1. Applicants for licenses, other than renewals, after April 18, 2002, shall describe in the application how facility design and procedures for operation will minimize, to the extent practical, contamination of the facility and the environment, facilitate eventual decommissioning, and minimize, to the extent practical, the generation of radioactive waste.

2. Licensees shall, to the extent practical, conduct operations to minimize the introduction of residual radioactivity into the site, including the subsurface, in accordance with the existing radiation protection requirements in .03(4) and radiological criteria for license termination in .03(7) of this Rule.

(8) **Surveys and Monitoring.**

(a) General.

1. Each licensee shall make, or cause to be made, surveys of areas, including the subsurface, that:

(i) May be necessary for the licensee to demonstrate compliance with this Rule; and

(ii) Are reasonable under the circumstances to evaluate:

(I) The magnitude and extent of radiation levels;

(II) Concentrations or quantities of residual radioactivity; and

(III) The potential radiological hazards of the radiation levels and residual radioactivity detected.

2. Notwithstanding .03(14)(c)1, records from surveys describing the location and amount of subsurface residual radioactivity identified at the site must be kept with records important for decommissioning, and such records must be retained in accordance with .02(8)(g)8, as applicable.

3. The licensee shall ensure that instruments and equipment used for quantitative radiation measurements (e.g., dose rate and effluent monitoring) are calibrated periodically, at least annually, for the radiation measured except when a more frequent interval is specified in other applicable parts of these Rules or a license condition.

4. All personnel dosimeters, except for direct and indirect reading pocket ionization chambers and those dosimeters used to measure the dose to any extremity, that require processing to determine the radiation dose and that are used by licensees to comply with (5)(a) of this Rule, with other applicable provisions of this Chapter, or with conditions specified in a license shall be processed and evaluated by a qualified dosimetry processor. A dosimetry processor is qualified if it:

(i) Holds current personnel dosimetry accreditation from the National Voluntary Laboratory Accreditation Program (NVLAP) of the National Institute of Standards and Technology; and

(ii) Is approved in this accreditation process for the type of radiation or radiations included in the NVLAP program that most closely approximates the type of radiation or radiations for which the individual wearing the dosimeter is monitored.

5. The licensee shall ensure that adequate precautions are taken to prevent a deceptive exposure of an individual monitoring device.

(b) Conditions Requiring Individual Monitoring of External and Internal Occupational Dose. Each licensee shall monitor exposures to sources of radiation and radioactive material at levels sufficient to demonstrate compliance with the occupational dose limits of this Rule. As a minimum:

1. Each licensee shall monitor occupational exposure to radiation and shall supply and require the use of individual monitoring devices by:

(i) Adults likely to receive, in one year from sources external to the body, a dose in excess of ten percent of the limits in (5)(a)1. of this Rule;

(ii) Minors likely to receive, in one year from radiation sources external to the body, a deep dose equivalent in excess of 0.1 rem (1mSv), a lens dose equivalent in excess of 0.15 rem (1.5 mSv), or a shallow dose equivalent to the skin or to extremities in excess of 0.5 rem (5mSv);

(iii) Declared pregnant women likely to receive during the entire pregnancy, from radiation sources external to the body, a deep dose equivalent in excess of 0.1 rem (1 mSv);[3] and

(iv) Individuals entering a high or very high radiation area.

2. Each licensee shall monitor, to determine compliance with (5)(d) of this Rule, the occupational intake of radioactive material by, and assess the committed effective dose equivalent to:

(i) Adults likely to receive, in one year, an intake in excess of ten percent (10%) of the applicable ALI in Table I, Columns 1 and 2, of Appendix B of 10 CFR 20; and

(ii) Minors likely to receive, in one year, a committed effective dose equivalent in excess of 0.05 rem (0.50 mSv).

(iii) Declared pregnant women likely to receive, during the entire pregnancy, a committed effective dose equivalent in excess of 0.1 rem (1 mSv).

(9) **Control Of Exposure From External Sources In Restricted Areas.**

(a) Control of Access to High Radiation Areas.

1. The licensee shall ensure that each entrance or access point to a high radiation area has one or more of the following features:

(i) A control device that, upon entry into the area, causes the level of radiation to be reduced below that level at which an individual might receive a deep dose equivalent of 0.1 rem (1 mSv) in one hour at 30 centimeters from the source of radiation or from any surface that the radiation penetrates;

(ii) A control device that energizes a conspicuous visible or audible alarm signal so that the individual entering the high radiation area and the supervisor of the activity are made aware of the entry; or

(iii) Entryways that are locked, except during periods when access to the areas is required, with positive control over each individual entry.

2. In place of the controls required by (9)(a)1. of this Rule, the licensee may substitute continuous direct or electronic surveillance that is capable of preventing unauthorized entry.

3. The licensee may apply to the Division for approval of alternative methods for controlling access to high radiation areas.

4. The licensee shall establish the controls required by (9)(a)1. and (9)(a)3. of this Rule in a way that does not prevent individuals from leaving a high radiation area.

5. The licensee is not required to control each entrance or access point to a room or other area that is a high radiation area solely because of the presence of radioactive materials prepared for transport and packaged and labeled in accordance with the regulations of the U.S. Department of Transportation provided that:

(i) The packages do not remain in the area longer than three days; and

(ii) The dose rate at one meter from the external surface of any package does not exceed 0.01 rem (0.1 mSv) per hour.

6. The licensee is not required to control entrance or access to rooms or other areas in hospitals solely because of the presence of patients containing radioactive material, provided that there are personnel in attendance who will take the necessary precautions to prevent the exposure of individuals to radiation or radioactive material in excess of the established limits in this Rule and to ensure operation within the ALARA provisions of the licensee's Radiation Protection Program.

7. The licensee is not required to control entrance or access to rooms or other areas containing sources of radiation capable of producing a high radiation area if the licensee has met all the specific requirements for access and control specified in other applicable Rules, such as 391-3-17-.04 for industrial radiography.

(b) Control of Access to Very High Radiation Areas.

1. In addition to the requirements in (9)(a) of this Rule, the licensee shall institute additional measures to ensure that an individual is not able to gain unauthorized or inadvertent access to areas in which radiation levels could be encountered at 500 rads (5 Gy) or more in one hour at one meter from a source of radiation or any surface through which the radiation penetrates. This requirement does not apply to rooms or areas in which diagnostic x-ray systems are the only source of radiation, or to non-self-shielded irradiators.

2. The licensee is not required to control entrance or access to rooms or other areas containing sources of radiation capable of producing a very high radiation area as defined in this Rule if the licensee has met all the specific requirements for access and control specified in other applicable Rules, such as 391-3-17-.04 for industrial radiography.

(10) **Respiratory Protection and Controls to Restrict Internal Exposure in Restricted Areas.**

(a) Use of Process or Other Engineering Controls. The licensee shall use, to the extent practicable, process or other engineering controls (e.g., containment, decontamination, or ventilation) to control the concentrations of radioactive material in air.

(b) Use of Other Controls. When it is not practical to apply process or other engineering controls to control the concentrations of radioactive material in air to values below those that define an airborne radioactivity area, the licensee shall, consistent with maintaining the total effective dose equivalent ALARA, increase monitoring and limit intakes by one or more of the following means:

1. Control of access;

2. Limitation of exposure times;

3. Use of respiratory protection equipment; or

4. Other controls.

(c) If the licensee performs an ALARA analysis to determine whether or not respirators should be used, the licensee may consider safety factors other than radiological factors. The licensee should also consider the impact of respirator use on workers' industrial health and safety.

(d) Use of Individual Respiratory Protection Equipment.

1. If the licensee uses respiratory protection equipment to limit intakes pursuant to (10)(b) of this Rule:

(i) Except as provided in (10)(d)1.(ii) of this Rule, the licensee shall use only respiratory protection equipment that is tested and certified by or had certification extended by the National Institute for Occupational Safety and Health and the Mine Safety and Health Administration (NIOSH/MSHA).

(ii) The licensee may use equipment that has not been tested or certified by the National Institute for Occupational Safety and Health and the Mine Safety and Health Administration or had certification extended by NIOSH/MSHA

or for which there is no schedule for testing or certification, provided the licensee has submitted to the Division and the Division has approved an application for authorized use of that equipment, including a demonstration by testing, or a demonstration on the basis of reliable test information, that the material and performance characteristics of the equipment are capable of providing the proposed degree of protection under anticipated conditions of use.

(iii) The licensee shall implement and maintain a respiratory protection program that includes:

(I) Air sampling sufficient to identify the potential hazard, permit proper equipment selection, and estimate exposures;

(II) Surveys and bioassays, as appropriate, to evaluate actual intakes;

(III) Testing of respirators for operability (user seal check for face sealing devices and functional check for others) immediately prior to each use;

(IV) Written procedures regarding: respirator selection; fit testing; breathing air quality; inventory control; storage, issuance, maintenance, repair, and quality assurance of respiratory protection equipment, including testing for operability immediately prior to each use; supervision and training of personnel; monitoring, including air sampling and bioassays; and record-keeping; and

(V) Determination by a physician prior to initial fitting of face sealing respirators; before the first use of non-face sealing respirators; and either every 12 months thereafter or periodically at a frequency determined by a physician, that the individual user is medically fit to use the respiratory protection equipment.

(VI) Fit testing, with fit factor "ten times the APF for negative pressure devices", and a fit factor "500 for any positive pressure, continuous flow, and pressure-demand devices", before the first field use of tight fitting, face-sealing respirators and periodically thereafter at a frequency not to exceed one year. Fit testing must be performed with the facepiece operating in the negative pressure mode.

(iv) The licensee shall advise each respirator user that the user may leave the area at any time for relief from respirator use in the event of equipment malfunction, physical or psychological distress, procedural or communication failure, significant deterioration of operating conditions, or any other conditions that might require such relief.

(v) The licensee shall also consider limitations appropriate to the type and mode of use. When selecting respiratory devices the licensee shall provide for vision correction, adequate communication, low temperature work environments, and the concurrent use of other safety or radiological protection equipment. The licensee shall use equipment in such a way as not to interfere with the proper operation of the respirator.

(vi) Standby rescue persons are required whenever one-piece atmosphere-supplying suits, or any combination of supplied air respiratory protection device and personnel protective equipment are used from which an unaided individual would have difficulty extricating himself. The standby persons must be equipped with respiratory protection devices or other apparatus appropriate for the potential hazards. The standby rescue persons shall observe or otherwise maintain continuous communication with the workers (visual, voice, signal line, telephone, radio, or other suitable means), and be immediately available to assist them in case of a failure of the air supply or for any other reason that requires relief from distress. A sufficient number of standby rescue persons must be immediately available to assist all users of this type of equipment and to provide effective emergency rescue if needed.

(vii) Atmosphere-supplying respirators must be supplied with respirable air of grade D quality or better as defined by the Compressed Gas Association in publication G-7.1, "Commodity Specification for Air," 1997 and included in the regulations of the Occupational Safety and Health Administration (29 CFR 1910.134(i)(1)(ii)(A) through (E).) Grade D quality air criteria include:

(I) Oxygen content (v/v) of 19.5-23.5%;

(II) Hydrocarbon (condensed) content of five (5) milligrams per cubic meter of air or less;

(III) Carbon monoxide (CO) content of ten (10) ppm or less;

(IV) Carbon dioxide content of 1,000 ppm or less; and

(V) Lack of noticeable odor.

(viii) The licensee shall ensure that no objects, materials or substances, such as facial hair, or any conditions that interfere with the face to facepiece seal or valve function, and that are under the control of the respirator wearer, are present between the skin of the wearer's face and the sealing surface of a tight-fitting respirator facepiece.

(ix) In estimating the dose to individuals from intake of airborne radioactive materials, the concentration of radioactive material in the air that is inhaled when respirators are worn is initially assumed to be the ambient concentration in air without respiratory protection, divided by the assigned protection factor. If the dose is later found to be greater than the estimated dose, the corrected value must be used. If the dose is later found to be less than the estimated dose, the corrected value may be used.

(e) Further Restrictions on the Use of Respiratory Protection Equipment. The Division may impose restrictions in addition to those in (10)(b) and (10)(c) of this Rule and Appendix A to 10 CFR 20, in order to:

1. Ensure that the respiratory protection program of the licensee is adequate to limit doses to individuals from intakes of airborne radioactive materials consistent with maintaining total effective dose equivalent ALARA; and

2. Limit the extent to which a licensee may use respiratory protection equipment instead of process or other engineering controls.

(f) Application for use of higher assigned protection factors. The licensee shall obtain authorization from the Division before using assigned protection factors in excess of those specified in Appendix A to 10 CFR Part 20. The Division may authorize a licensee to use higher assigned protection factors on receipt of an application that:

1. Describes the situation for which a need exists for higher protection factors; and

2. Demonstrates that the respiratory protection equipment provides these higher protection factors under the proposed conditions of use.

(11) **Storage and Control of Licensed Material.**

(a) Security and Control of Licensed Radioactive Material. The licensee shall secure licensed materials from unauthorized removal or access.

(b) Control of material sources of radiation not in storage. The licensee shall maintain constant surveillance and use devices or administrative procedures to prevent unauthorized use of licensed radioactive material that is in an unrestricted area and that is not in storage or in a patient.

(12) **Precautionary Procedures.**

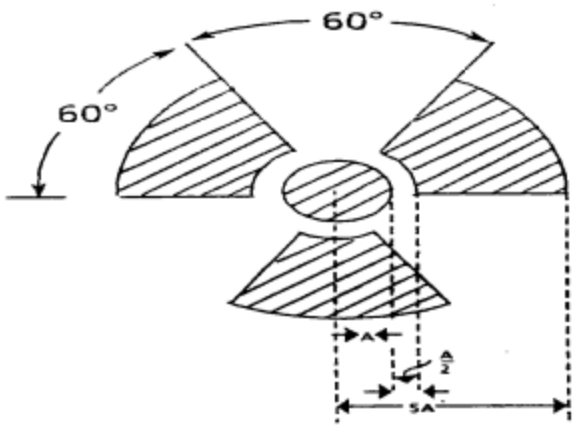
(a) Caution Signs.

1. Standard Radiation Symbol. Unless otherwise authorized by the Division, the symbol prescribed by (12)(a) of this Rule uses the colors magenta (or purple or black) on yellow background. The symbol prescribed is the three-bladed design as follows:

(i) Cross-hatched area is to be magenta, purple, or black; and

(ii) The background is to be yellow.

2. Exception to Color Requirements for Standard Radiation Symbol. Notwithstanding the requirements of (12)(a)1. of this Rule, licensees are authorized to label sources, source holders, or device components containing sources of radiation that are subjected to high temperatures with conspicuously etched or stamped radiation caution symbols without a color requirement.



3. In addition to the contents of signs and labels prescribed in this Rule, the licensee shall provide, on or near the required signs and labels, additional information, as appropriate, to make individuals aware of potential radiation exposures and to minimize the exposures.

(b) Posting Requirements.

1. Posting of Radiation Areas. The licensee shall post each radiation area with a conspicuous sign or signs bearing the radiation symbol and the words "CAUTION, RADIATION AREA."

2. Posting of High Radiation Areas. The licensee shall post each high radiation area with a conspicuous sign or signs bearing the radiation symbol and the words "CAUTION, HIGH RADIATION AREA" or "DANGER, HIGH RADIATION AREA." The licensee may satisfy this requirement by posting the sign at the boundary of the high radiation area.

3. Posting of Very High Radiation Areas. The licensee shall post each very high radiation area with a conspicuous sign or signs bearing the radiation symbol and words "GRAVE DANGER, VERY HIGH RADIATION AREA."

4. Posting of Airborne Radioactivity Areas. The licensee shall post each airborne radioactivity area with a conspicuous sign or signs bearing the radiation symbol and the words "CAUTION, AIRBORNE RADIOACTIVITY AREA" or "DANGER, AIRBORNE RADIOACTIVITY AREA."

5. Posting of Areas or Rooms in which Licensed Material is Used or Stored. The licensee shall post each area or room in which there is used or stored an amount of licensed material exceeding ten times the quantity of such material specified in Appendix C of 10 CFR Part 20 with a conspicuous sign or signs bearing the radiation symbol and the words "CAUTION, RADIOACTIVE MATERIAL(S)" or "DANGER, RADIOACTIVE MATERIAL(S)".

(c) Exceptions to Posting Requirements.

1. A licensee is not required to post caution signs in areas or rooms containing sources of radiation for periods of less than eight hours, if all of the following conditions are met:

(i) The sources of radiation are constantly attended during these periods by an individual who takes the precautions necessary to prevent the exposure of individuals to sources of radiation in excess of the limits established in this Rule; and

(ii) The area or room is subject to the licensee's control.

2. Rooms or other areas in hospitals that are occupied by patients are not required to be posted with caution signs pursuant to (12)(b) of this Rule provided that the patient could be released from licensee control pursuant to Rule 391-3-17-.05.

3. A room or area is not required to be posted with a caution sign pursuant to (12)(b) of this Rule because of the presence of a sealed source provided that the radiation level at 30 centimeters from the surface of the source container or housing does not exceed 0.005 rem (0.05 mSv) per hour.

(d) Labeling Containers and Radiation Machines.

1. The licensee shall ensure that each container of licensed material bears a durable, clearly visible label bearing the radiation symbol and the words "CAUTION, RADIOACTIVE MATERIAL" or "DANGER, RADIOACTIVE MATERIAL." The label shall also provide information such as the radionuclides present, an estimate of the quantity of radioactivity, the date for which the activity is estimated, radiation levels, kinds of materials, and mass enrichment, to permit individuals handling or using the containers, or working in the vicinity of the containers, to take precautions to avoid or minimize exposures.

2. Each licensee shall, prior to removal or disposal of empty uncontaminated containers to unrestricted areas, remove or deface the radioactive material label or otherwise clearly indicate that the container no longer contains radioactive materials.

(e) Exemptions to Labeling Requirements. A licensee is not required to label:

1. Containers holding licensed material in quantities less than the quantities listed in Appendix C of 10 CFR 20;

2. Containers holding licensed material in concentrations less than those specified in Table III of Appendix B of 10 CFR 20;

3. Containers attended by an individual who takes the precautions necessary to prevent the exposure of individuals in excess of the limits established by this Rule;

4. Containers when they are in transport and packaged and labeled in accordance with the regulations of the U.S. Department of Transportation[4];

5. Containers that are accessible only to individuals authorized to handle or use them or to work in the vicinity of the containers, if the contents are identified to these individuals by a readily available written record. Examples of containers of this type are containers in locations such as water-filled canals, storage vaults, or hot cells. The record shall be retained as long as the containers are in use for the purpose indicated on the record; or

6. Installed manufacturing or process equipment, such as chemical process equipment, piping, and tanks.

(f) Procedures for Receiving and Opening Packages.

1. Each licensee who is authorized to receive a package containing quantities of radioactive material in excess of a Type A quantity, as defined in Rule 391-3-17-.06(3), shall make arrangements to receive:

(i) The package when the carrier offers it for delivery; or

(ii) The notification of the arrival of the package at the carrier's terminal and to take possession of the package expeditiously.

2. Each licensee shall:

(i) Monitor the external surfaces of a labeled[5] package for radioactive contamination unless the package contains only radioactive material in the form of gas or in "special form" as defined in Rule 391-3-17-.01(2);

(ii) Monitor the external surfaces of a labeled package for radiation levels unless the package contains quantities of radioactive material that are less than or equal to the Type A quantity, as defined in Rule 391-3-17-.06(3), and the radioactive material is in the form of a gas or in special form as defined in Rule 391-3-17-.01(2); and

(iii) Monitor all packages known to contain radioactive material for radioactive contamination and radiation levels if the package has evidence of potential contamination, such as packages that are crushed, wet, or damaged.

3. The licensee shall perform the monitoring required by (12)(f)2. of this Rule as soon as practicable after receipt of the package, but not later than three hours after the package is received at the licensee's facility if it is received during the licensee's normal working hours, or not later than three hours from the beginning of the next working day if it is received after working hours.

4. The licensee shall immediately notify the final delivery carrier and the Division by telephone, telegram, mailgram, or facsimile, when:

(i) Removable radioactive surface contamination exceeds the limits of Rule 391-3-17-.06(16)(i); or

(ii) External radiation levels exceed the limits of Rule 391-3-17-.06(16)(j).

5. Each licensee shall:

(i) Establish, maintain, and retain written procedures for safely opening packages in which radioactive material is received; and

(ii) Ensure that the procedures are followed and that special instructions for the type of package being opened are followed.

6. Licensees transferring special form sources in vehicles owned or operated by the licensee to and from a work site are exempt from the contamination monitoring requirements of (12)(f)2. of this Rule, but are not exempt from the monitoring requirement in (12)(f)2. of this Rule for measuring radiation levels to ensure that the source is still properly lodged in its shield.

(13) **Waste Disposal.**

(a) General Requirements.

1. A licensee shall dispose of licensed material only:

(i) By transfer to an authorized recipient as provided in (13)(i) of this Rule and in Rule 391-3-17-.02(19), or to the U.S. Department of Energy;

(ii) By decay in storage;

(iii) By release in effluents within the limits in (5)(i) of this Rule; or

(iv) As authorized pursuant to (13)(b), (13)(c), (13)(d), (13)(e), or (13)(k) of this Rule.

2. A person shall be specifically licensed by the Director, the U.S. Nuclear Regulatory Commission or an Agreement State to receive waste containing licensed material from other persons for:

(i) Treatment prior to disposal;

(ii) Treatment or disposal by incineration;

(iii) Decay in storage;

(iv) Disposal at a land disposal facility licensed pursuant to 10 CFR Part 61, or equivalent regulations of an Agreement State; or

(v) Storage until transferred to a disposal facility authorized to receive the waste.

(b) Method for Obtaining Approval of Proposed Disposal Procedures. A licensee or applicant for a license may apply to the Division for approval of proposed procedures not otherwise authorized in this Chapter to dispose of licensed material generated in the licensee's operations. Each application shall include:

1. A description of the waste containing licensed material to be disposed of, including the physical and chemical properties that have an impact on risk evaluation, and the proposed manner and conditions of waste disposal;

2. An analysis and evaluation of pertinent information on the nature of the environment;

3. The nature and location of other potentially affected facilities; and

4. Analyses and procedures to ensure that doses are maintained ALARA and within the dose limits in this Rule.

(c) Disposal by Release into Sanitary Sewerage.

1. A licensee may discharge licensed material into sanitary sewerage if each of the following conditions is satisfied:

(i) The material is readily soluble, or is readily dispersible biological material, in water;

(ii) The quantity of licensed radioactive material that the licensee releases into the sewer in one month divided by the average monthly volume of water released into the sewer by the licensee does not exceed the concentration listed in Table III of Appendix B of 10 CFR 20;

(iii) If more than one radionuclide is released, the following conditions must also be satisfied:

(I) The licensee shall determine the fraction of the limit in Table III of Appendix B of 10 CFR 20, represented by discharges into sanitary sewerage by dividing the actual monthly average concentration of each radionuclide released by the licensee into the sewer by the concentration of that radionuclide listed in Table III of Appendix B of 10 CFR 20; and

(II) The sum of the fractions for each radionuclide required by (13)(c)1.(iii)(I) of this Rule does not exceed unity; and

(iv) The total quantity of licensed radioactive material that the licensee releases into the sanitary sewerage system in a year does not exceed five Ci (185 GBq) of hydrogen-3, one Ci (37 GBq) of carbon-14, and one Ci (37 GBq) of all other radioactive materials combined.

2. Excreta from individuals undergoing medical diagnosis or therapy with radioactive material are not subject to the limitations contained in (13)(c)1. of this Rule.

(d) Treatment or Disposal by Incineration. A licensee may treat or dispose of licensed material by incineration only in the forms and concentrations specified in (13)(e) of this Rule or as specifically approved by the Division pursuant to (13)(b) of this Rule.

(e) Disposal of Specific Wastes.

1. A licensee may dispose of the following licensed material as if it were not radioactive:

(i) 0.05 µCi (1.85 kBq) or less of hydrogen-3, carbon-14, or iodine-125 per gram of medium used for liquid scintillation counting; and

(ii) 0.05 µCi (1.85 kBq) or less of hydrogen-3, carbon-14, or iodine-125 per gram of animal tissue, averaged over the weight of the entire animal.

2. A licensee shall not dispose of tissue under (13)(e)1.(ii) of this Rule in a manner that would permit its use either as food for humans or as animal feed.

3. The licensee shall maintain records in accordance with (14)(i) of this Rule.

(f) Classification of Radioactive Waste for Near-Surface Disposal.

1. Considerations. Determination of the classification of radioactive waste involves two considerations. First, consideration must be given to the concentration of long-lived radionuclides (and their shorter-lived precursors) whose potential hazard will persist long after such precautions as institutional controls, improved waste form, and deeper disposal have ceased to be effective. These precautions delay the time when long-lived radionuclides could cause exposures. In addition, the magnitude of the potential dose is limited by the concentration and availability of the radionuclide at the time of exposure. Second, consideration must be given to the concentration of shorter-lived radionuclides for which requirements on institutional controls, waste form, and disposal methods are effective.

2. Classes of waste.

(i) Class A waste is waste that is usually segregated from other waste classes at the disposal site. The physical form and characteristics of Class A waste must meet the minimum requirements set forth in (13)(g)1. of this Rule. If Class A waste also meets the stability requirements set forth in (13)(g)2. of this Rule, it is not necessary to segregate the waste for disposal.

(ii) Class B waste is waste that must meet more rigorous requirements on waste form to ensure stability after disposal. The physical form and characteristics of Class B waste must meet both the minimum and stability requirements set forth in (13)(g) of this Rule.

(iii) Class C waste is waste that not only must meet more rigorous requirements on waste form to ensure stability but also requires additional measures at the disposal facility to protect against inadvertent intrusion. The physical form and characteristics of Class C waste must meet both the minimum and stability requirements set forth in (13)(g) of this Rule.

3. Classification determined by long-lived radionuclides. If the waste contains only radionuclides listed in Table 1, classification shall be determined as follows:

(i) If the concentration does not exceed 0.1 times the value in Table 1, the waste is Class A.

(ii) If the concentration exceeds 0.1 times the value in Table 1, the waste is Class C.

(iii) If the concentration exceeds the value in Table 1, the waste is not generally acceptable for near-surface disposal.

(iv) For wastes containing mixtures of radionuclides listed in Table 1, the total concentration shall be determined by the sum of fractions rule described in (13)(f)7. of this Rule.

Table 1

Radionuclide	Concentration (Curies/cubic meter)
C-14	8
C-14 in activated metal	80

Radionuclide	Concentration (Curies/cubic meter)
Ni-59 in activated metal	220
Nb-94 in activated metal	0.2
Tc-99	3
I-129	0.08
Alpha-emitting transuranic radionuclides with half-life greater than five years.	100 [(a)]
Pu-241	3,500 [(a)]
Cm-242	20,000 [(a)]
Ra-226	100 [(a)]

[(a)] Units are in nanocuries per gram.

4. Classification determined by short-lived radionuclides. If the waste does not contain any of the radionuclides listed in Table 1, classification shall be determined based on the concentrations shown in Table 2. If a nuclide is not listed in Table 2, it does not need to be considered in determining the waste class.

(i) If the concentration does not exceed the value in Column 1, the waste is Class A.

(ii) If the concentration exceeds the value in Column 1, but does not exceed the value in Column 2, the waste is Class B.

(iii) If the concentration exceeds the value in Column 2, but does not exceed the value in Column 3, the waste is Class C.

(iv) If the concentration exceeds the value in Column 3, the waste is not generally acceptable for near-surface disposal.

(v) For wastes containing mixtures of the radionuclides listed in Table 2, the total concentration shall be determined by the sum of fractions rule described in (13)(f)7. of this Rule.

Table 2

	Concentration (Curies/ cubic meter)		
Radionuclide	Column 1	Column 2	Column 3
Total of all radionuclides with less than five year half-life	700	[(b)]	[(b)]
H-3	40	[(b)]	[(b)]
Co-60	700	[(b)]	[(b)]
Ni-63	3.5	70	700
Ni-63 in activated metal	35	700	7000
Sr-90	0.04	150	7000
Cs-137	1	44	4600

[(b)] There are no limits established for these radionuclides in Class B or C wastes. Practical considerations such as the effects of external radiation and internal heat generation on transportation, handling, and disposal will limit the concentrations for these wastes. These wastes shall be Class B unless the concentrations of other radionuclides in Table 2 determine the waste to be Class C independent of these radionuclides.

5. Classification determined by both long- and short-lived radionuclides. If the waste contains a mixture of radionuclides, some of which are listed in Table 1 and some of which are listed in Table 2, classification shall be determined as follows:

(i) If the concentration of a radionuclide listed in Table 1 is less than 0.1 times the value listed in Table 1, the class shall be that determined by the concentration of radionuclides listed in Table 2.

(ii) If the concentration of a radionuclide listed in Table 1 exceeds 0.1 times the value listed in Table 1, the waste shall be Class C, provided the concentration of radionuclides listed in Table 2 does not exceed the value shown in Column 3 of Table 2.

6. Classification of wastes with radionuclides other than those listed in Tables 1 and 2. If the waste does not contain any radionuclides listed in either Table 1 or 2, it is Class A.

7. The sum of the fractions rule for mixtures of radionuclides. For determining classification for waste that contains a mixture of radionuclides, it is necessary to determine the sum of fractions by dividing each radionuclide's concentration by the appropriate limit and adding the resulting values. The appropriate limits must all be taken from the same column of the same table. The sum of the fractions for the column must be less than 1.0 if the waste class is to be determined by that column. Example: A waste contains Sr-90 in a concentration of 50 Ci/m^3 and Cs-137 in a concentration of 22 Ci/m^3. Since the concentrations both exceed the values in Column 1, Table 2, they must be compared to Column 2 values. For Sr-90 fraction, 50/150 = 0.33; for Cs-137 fraction, 22/44 = 0.5; the sum of the fractions = 0.83. Since the sum is less than 1.0, the waste is Class B.

8. Determination of concentrations in wastes. The concentration of a radionuclide may be determined by indirect methods such as the use of scaling factors, which relate the inferred concentration of one radionuclide to another that is measured, or radionuclide material accountability, if there is reasonable assurance that the indirect methods can be correlated with actual measurements. The concentration of a radionuclide may be averaged over the volume of the waste or weight of the waste if the units are expressed as nanocuries per gram.

(g) Radioactive Waste Characteristics.

1. The following are minimum requirements for all classes of waste and are intended to facilitate handling and provide protection of health and safety of personnel at the disposal site:

(i) Wastes shall be packaged in conformance with the conditions of the license issued to the site operator to which the waste will be shipped. Where the conditions of the site license are more restrictive than the provisions of this Chapter, the site license conditions shall govern.

(ii) Wastes shall not be packaged for disposal in cardboard or fiberboard boxes.

(iii) Liquid waste shall be packaged in sufficient absorbent material to absorb twice the volume of the liquid.

(iv) Solid wastes containing liquid shall contain as little free-standing and non-corrosive liquid as is reasonably achievable, but in no case shall the liquid exceed one percent of the volume.

(v) Wastes shall not be readily capable of detonation or of explosive decomposition or reaction at normal pressures and temperatures or of explosive reaction with water.

(vi) Wastes shall not contain, or be capable of generating, quantities of toxic gases, vapors, or fumes harmful to persons transporting, handling, or disposing of the waste. This does not apply to radioactive gaseous wastes packaged in accordance with (13)(g)1.(viii) of this Rule.

(vii) Pyrophoric materials contained in wastes shall be treated, prepared, and packaged to be nonflammable.

(viii) Wastes in a gaseous form shall be packaged at an absolute pressure that does not exceed 1.5 atmospheres at 20 degrees Celsius. Total activity shall not exceed 100 Curies (3.7 TBq) per container.

(ix) Wastes containing hazardous, biological, pathogenic, or infectious material shall be treated to reduce to the maximum extent practicable the potential hazard from the non-radiological materials.

2. The following requirements are intended to provide stability of the waste. Stability is intended to ensure that the waste does not degrade and affect overall stability of the site through slumping, collapse, or other failure of the disposal unit and thereby lead to water infiltration. Stability is also a factor in limiting exposure to an inadvertent intruder, since it provides a recognizable and nondispersible waste.

(i) Waste shall have structural stability. A structurally stable waste form will generally maintain its physical dimensions and its form under the expected disposal conditions such as the weight of overburden and compaction equipment, the presence of moisture and microbial activity, and internal factors such as radiation effects and chemical changes. Structural stability can be provided by the waste form itself, processing the waste to a stable form, or placing the waste in a disposal container or structure that provides stability after disposal.

(ii) Notwithstanding the provisions in (13)(g)1.(iii) and (iv) of this Rule, liquid wastes, or wastes containing liquid, shall be converted into a form that contains as little freestanding and noncorrosive liquid as is reasonably achievable, but in no case shall the liquid exceed one percent of the volume of the waste when the waste is in a disposal container designed to ensure stability, or 0.5 percent of the volume of the waste for waste processed to a stable form.

(iii) Void spaces within the waste and between the waste and its package shall be reduced to the extent practicable.

(h) Labeling. Each package of waste shall be clearly labeled to identify whether it is Class A, Class B, or Class C waste in accordance with (13)(f) of this Rule.

(i) Transfer for Disposal and Manifest.

1. A waste generator, collector, or processor who transports, or offers for transportation, low-level radioactive waste intended for ultimate disposal at a licensed low-level radioactive waste land disposal facility must prepare a Manifest reflecting information requested on applicable NRC Forms 540 or equivalent forms (Uniform Low-Level Radioactive Waste Manifest (Shipping Paper)) and 541 (Uniform Low-Level Radioactive Waste Manifest (Container and Waste Description)) and if necessary, on an applicable NRC Form 542 or equivalent form (Uniform Low-Level Radioactive Waste Manifest (Manifest Index and Regional Compact Tabulation)). NRC Forms 540 and 540A or equivalent forms must be completed and must physically accompany the pertinent low-level radioactive waste shipment. Upon agreement between shipper and consignee, NRC Forms 541 and 541A and 542 and 542A or equivalent forms may be completed, transmitted, and stored in electronic media with the capability for producing legible, accurate, and complete records on the respective forms. Licensees are not required by the Division to comply with the manifesting requirements of this Chapter when they ship:

(i) LLW for processing and expect its return (i.e., for storage under their license) prior to disposal at a licensed land disposal facility;

(ii) LLW that is being returned to the licensee who is the "waste generator" or "generator," as defined in this Rule; or

(iii) Radioactively contaminated material to a "waste processor" that becomes the processor's residual waste.

For guidance in completing these forms, refer to the instructions that accompany the forms. Copies of manifests required by this Rule may be legible carbon copies, photocopies, or computer printouts that reproduce the data in the format of the uniform manifest. NRC Forms 541 and 541A and 542 and 542A or equivalent forms and the accompanying instructions, in hard copy, may be obtained from Radioactive Materials Program, 4244 International Parkway, Suite 120, Atlanta, Georgia 30354, or current address.

This Rule includes information requirements of the Department of Transportation, as codified in 49 CFR Part 172. Information on hazardous, medical, or other waste, required to meet EPA regulations, as codified in 40 CFR Parts 259, 261 or elsewhere, is not addressed in this Rule, and must be provided on the required EPA forms. However, the required EPA forms must accompany the Uniform Low-Level Radioactive Waste Manifest required by this Rule.

2. General Information. The shipper of the low-level radioactive waste shall provide the following information on the uniform manifest:

(i) The name, facility address, and telephone number of the licensee shipping the waste;

(ii) An explicit declaration indicting whether the shipper is acting as a waste generator, collector, processor, or a combination of these identifiers for purposes of the manifested shipment; and

(iii) The name, address, and telephone number, or the name and EPA identification number for the carrier transporting the waste.

3. Shipment Information. The shipper of the radioactive waste shall provide the following information regarding the waste shipment on the uniform manifest:

(i) The date of the waste shipment;

(ii) The total number of packages/disposal containers;

(iii) The total disposal volume and disposal weight in the shipment;

(iv) The total radionuclide activity in the shipment;

(v) The activity of each of the radionuclides H-3, C-14, Tc-99, and I-129 contained in the shipment; and

(vi) The total masses of U-233, U-235, and plutonium in the form of special nuclear material, and the total mass of uranium and thorium in the form of source material.

4. Disposal Container and Waste Information. The shipper of the radioactive waste shall provide the following information on the uniform manifest regarding the waste and each disposal container of waste in the shipment:

(i) An alphabetic or numeric identification that uniquely identifies each disposal container in the shipment;

(ii) A physical description of the disposal container, including the manufacturer and model of any high integrity container;

(iii) The volume displaced by the disposal container;

(iv) The gross weight of the disposal container, including the waste;

(v) For waste consigned to a disposal facility, the maximum radiation level at the surface of each disposal container;

(vi) A physical and chemical description of the waste;

(vii) The total weight percentage of chelating agent for any waste containing more than 0.1 percent chelating agent by weight, plus the identity of the principal chelating agent;

(viii) The approximate volume of waste within a container;

(ix) The sorbing or solidification media, if any, and the identity of the solidification media vendor and brand name;

(x) The identities and activities of individual radionuclides contained in each container, the masses of U-233, U-235, and plutonium in the form of special nuclear material, and the masses of uranium and thorium in the form of source material. For discrete waste types (i.e., activated materials, contaminated equipment, mechanical filters, sealed source/devices, and wastes in solidification/stabilization media), the identities and activities of individual radionuclides associated with a disposal container shall be reported;

(xi) The total radioactivity within each container; and

(xii) For wastes consigned to a disposal facility, the classification of the waste pursuant to (13)(f). Waste not meeting the structural stability requirements of (13)(g)2. must be identified.

5. Uncontainerized Waste Information. The shipper of the radioactive waste shall provide the following information on the uniform manifest regarding a waste shipment delivered without a disposal container:

(i) The approximate volume and weight of the waste;

(ii) A physical and chemical description of the waste;

(iii) The total weight percentage of chelating agent if the chelating agent exceeds 0.1 percent by weight, plus the identity of the principal chelating agent;

(iv) For waste consigned to a disposal facility, the classification of the waste pursuant to (13)(f) of this Rule. Waste not meeting the structural stability requirements of (13)(g)2. of this Rule must be identified;

(v) The identities and activities of individual radionuclides contained in the waste, the masses of U-233, U-235, and plutonium in the form of special nuclear material, and the masses of uranium and thorium in the form of source material; and

(vi) For wastes consigned to a disposal facility, the maximum radiation levels at the surface of the waste.

6. Multi-Generator Disposal Container Information. This section applies to disposal containers enclosing mixtures of waste originating from different generators. (Note: The origin of the LLW resulting from a processor's activities may be attributable to one or more "generators" (including "waste generators") as defined in this Chapter). It also applies to mixtures of wastes shipped in an uncontainerized form, for which portions of the mixture within the shipment originate from different generators.

(i) For homogeneous mixtures of waste, such as incinerator ash, provide the waste description applicable to the mixture and the volume of the waste attributed to each generator.

(ii) For heterogeneous mixtures of waste, such as the combined products from a large compactor, identify each generator contributing waste to the disposal container, and, for discrete waste types (i.e., activated materials, contaminated equipment, mechanical filters, sealed source/devices, and wastes in solidification/stabilization media), the identities and activities of individual radionuclides contained on these waste types within the disposal container. For each generator, provide the following:

(I) The volume of waste within the disposal container;

(II) A physical and chemical description of the waste, including the solidification agent, if any;

(III) The total weight percentage of chelating agents for any disposal container containing more than 0.1 percent chelating agent by weight, plus the identity of the principal chelating agent;

(IV) The sorbing or solidification media, if any, and the identity of the solidification media vendor and brand name if the media is claimed to meet stability requirements of (13)(g)2. of this Rule; and

(V) Radionuclide identities and activities contained in the waste, the masses of U-233, U-235, and plutonium in the form of special nuclear material, and the masses of uranium and thorium in the form of source material if contained in the waste.

7. An authorized representative of the waste generator, processor, or collector shall certify by signing and dating the shipment manifest that the transported materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation and the Division. A collector in signing the certification is certifying that nothing has been done to the collected waste which would invalidate the waste generator's certification.

8. Control and Tracking. Any licensee who transfers radioactive waste to a land disposal facility or a licensed waste collector shall comply with all of the following requirements. Any licensee who transfers waste to a licensed waste processor for waste treatment or repackaging shall comply with the requirements of (13)(i)8.(iv) through (ix). A licensee shall:

(i) Prepare all wastes so that the waste is classified according to (13)(f) and meets waste characteristics requirements in (13)(g);

(ii) Label each disposal container (or transport package if potential radiation hazards preclude labeling of the individual disposal container) of waste to identify whether it is Class A waste, Class B waste, Class C waste, or greater than Class C waste, in accordance with (13)(f);

(iii) Conduct a quality assurance program to assure compliance with (13)(f) and (13)(g) (the program must include management evaluation of audits);

(iv) Prepare the NRC Forms 540 and 540A or Equivalent Forms, "Uniform Low-Level Radioactive Waste Manifest" as required by this Section;

(v) Forward a copy or electronically transfer the Uniform Low-Level Radioactive Waste Manifest to the intended consignee so that either:

(I) Receipt of the manifest precedes the LLW shipment, or

(II) The manifest is delivered to the consignee with the waste at the time the waste is transferred to the consignee, or

(III) Both (I) and (II) is also acceptable.

(vi) Include NRC Form 540 (and NRC 540A, if required) or Equivalent Forms with the shipment regardless of the option in (13)(i)8.(v);

(vii) Receive acknowledgment of the receipt of the shipment in the form of a signed copy of NRC Form 540 or Equivalent Form;

(viii) Retain a copy of or electronically store the Uniform Low-Level Radioactive Waste Manifest and documentation of acknowledgment of receipt as the record of transfer of licensed material as required by Rule 391-3-17-.02; and

(ix) For any shipments or any part of a shipment for which acknowledgment of receipt has not been received within the times set forth in this section, conduct an investigation in accordance with (13)(i)12.

9. Any waste collector licensee who handles only prepackaged waste shall:

(i) Acknowledge receipt of the waste from the shipper within one week of receipt by returning a signed copy of NRC Form 540 or Equivalent Form.

(ii) Prepare a new manifest to reflect consolidated shipments that meet the requirements of this section. The waste collector shall ensure that, for each container of waste in the shipment, the manifest identifies the generator of that container of waste;

(iii) Forward a copy or electronically transfer the Uniform Low-Level Radioactive Waste Manifest to the intended consignee so that either:

(I) Receipt of the manifest precedes the LLW shipment, or

(II) The manifest is delivered to the consignee with the waste at the time the waste is transferred to the consignee, or

(III) Both (I) and (II) is also acceptable;

(iv) Include NRC Form 540 (and NRC From 540A, if required) or Equivalent Forms, with the shipment regardless of the option chosen in (13)(i)9.(iii);

(v) Receive acknowledgment of the receipt of the shipment in the form of a signed copy of NRC Form 540 or Equivalent Form;

(vi) Retain a copy of or electronically store the Uniform Low-Level Radioactive Waste Manifest and documentation of acknowledgment of receipt;

(vii) For any shipments or any part of a shipment for which acknowledgment of receipt has not been received within the times set forth in this section, conduct an investigation in accordance with (13)(i)12.; and

(viii) Notify the shipper and the Division when any shipment, or part of a shipment, has not arrived within 60 days after receipt of an advance manifest, unless notified by the shipper that the shipment has been canceled.

10. Any licensed waste processor who treats or repackages waste shall:

(i) Acknowledge receipt of the waste from the shipper within one week of receipt by returning a signed copy of NRC Form 540 or Equivalent Form;

(ii) Prepare a new manifest that meets the requirements of this section. Preparation of the new manifest reflects that the processor is responsible for meeting these requirements. For each container of waste in the shipment, the manifest shall identify the waste generators, the preprocessed waste volume, and other information as required in (13)(i)6.;

(iii) Prepare all wastes so that the waste is classified according to (13)(f) and meets the waste characteristics requirements in (13)(g);

(iv) Label each package of waste to identify whether it is Class A waste, Class B waste, or Class C waste, in accordance with (13)(f) and (13)(h);

(v) Conduct a quality assurance program to assure compliance with (13)(f) and (13)(g) (the program shall include management evaluation of audits);

(vi) Forward a copy or electronically transfer the Uniform Low-Level Radioactive Waste Manifest to the intended consignee so that either:

(I) Receipt of the manifest precedes the LLW shipment, or

(II) The manifest is delivered to the consignee with the waste at the time the waste is transferred to the consignee, or

(III) Both (I) and (II) is also acceptable;

(vii) Include NRC Form 540 (and NRC Form 540A if required) or Equivalent Forms, with the shipment regardless of the option chosen in (13)(i)10.(vi);

(viii) Receive acknowledgment of the receipt of the shipment in the form of a signed copy of NRC Form 540 or Equivalent Form;

(ix) Retain a copy of or electronically store the Uniform Low-Level Radioactive Waste Manifest and documentation of acknowledgment of receipt as the record of transfer of licensed material as required by Rule 391-3-17-.02;

(x) For any shipment or any part of a shipment for which acknowledgment of receipt has not been received within the times set forth in this section, conduct an investigation in accordance with (13)(i)12.; and

(xi) Notify the shipper and the Division when any shipment, or any part of a shipment, has not arrived within 60 days after receipt of an advance manifest, unless notified by the shipper that the shipment has been canceled.

11. The land disposal facility operator shall:

(i) Acknowledge receipt of the waste within one week of receipt by returning, as a minimum, a signed copy of NRC Form 540 or Equivalent Form to the shipper. The shipper to be notified is the licensee who last possessed the waste and transferred the waste to the operator. If any discrepancy exists between materials listed on the Uniform Low-Level Radioactive Waste Manifest and materials received, copies or electronic transfer of the affected forms must be returned indicating that discrepancy.

(ii) Maintain copies of all completed manifests and electronically store the information until the Director terminates the license; and

(iii) Notify the shipper and the Division when any shipment, or part of a shipment, has not arrived within 60 days after receipt of an advance manifest, unless notified by the shipper that the shipment has been canceled.

12. Any shipments or part of a shipment for which acknowledgment is not received within the times set forth in this section must:

(i) Be investigated by the shipper if the shipper has not received notification or receipt within 20 days after transfer; and

(ii) Be traced and reported. The investigation shall include tracing the shipment and filing a report with the Division. Each licensee who conducts a trace investigation shall file a written report with the Division within two weeks of completion of the investigation.

13. The requirements of this section are to:

(i) Control transfers of low-level radioactive waste by any waste generator, waste collector, or waste processor licensee, as defined in this section, who ships low-level waste either directly, or indirectly through a waste collector or waste processor, to a licensed low-level waste land disposal facility (as defined in 10 CFR 61);

(ii) Establish a manifest tracking system; and

(iii) Supplement existing requirements concerning transfers and recordkeeping for those wastes.

14. Any licensee shipping radioactive waste intended for ultimate disposal at a licensed land disposal facility must document the information required on NRC's Uniform Low-Level Radioactive Waste Manifest and transfer this recorded manifest information to the intended consignee in accordance with (13)(i)1. through 12. of this Rule.

15. Each shipment manifest must include a certification by the waste generator as specified in (13)(i)7. of this Rule.

16. Each person involved in the transfer for disposal and disposal of waste, including the waste generator, waste collector, waste processor, and disposal facility operator, shall comply with the requirements specified in (13)(i)8. of this Rule.

17. Any licensee shipping byproduct material as defined in paragraphs (3) and (4) of the definition of *Byproduct material* set forth in Rule .01(2)(o), intended for ultimate disposal at a land disposal facility licensed under 10 CFR 61 must document the information required on the NRC's Uniform Low-Level Radioactive Waste Manifest and transfer this recorded manifest information to the intended consignee in accordance with (13)(i)1. through 12. of this Rule.

(j) Compliance with Environmental and Health Protection Regulations. Nothing in this Rule relieves the licensee from complying with other applicable Federal, State, and local regulations governing other toxic or hazardous properties of materials that may be disposed of pursuant to this Rule.

(k) Disposal of Certain Byproduct Material.

1. Licensed material as defined in Rule .01(2)(o)3. and 4. of the definition of Byproduct material may be disposed of in accordance with .03(13) of this chapter, even though it is not defined as low-level radioactive waste. Therefore, any licensed byproduct material being disposed of at a facility, or transferred for ultimate disposal at a facility licensed under .03(13) of this chapter, must meet the requirements of Rule .03(13)(i).

2. A licensee may dispose of byproduct material, as defined in Rule .01(2)(o)3. and 4. of the definition of Byproduct, at a disposal facility authorized to dispose of such material in accordance with any Federal or State solid or hazardous waste law, including the Solid Waste Disposal Act, as authorized under the Energy Policy Act of 2005.

(14) **Records.**

(a) General Provisions.

1. Each licensee shall use the units of Curie, rad, rem, and dpm, including multiples and subdivisions and shall clearly indicate the units of all quantities on records required by this Rule.

2. In the records required by this rule, the licensee may record quantities in SI units in parentheses following each of the units specified in (14)(a)1. However, all quantities must be recorded as stated in (14)(a)1.

3. The licensee shall make a clear distinction among the quantities entered on the records required by this Rule, such as total effective dose equivalent, shallow dose equivalent, lens dose equivalent, deep dose equivalent, total organ dose equivalent, or committed effective dose equivalent.

(b) Records of Radiation Protection Programs.

1. Each licensee shall maintain records of the Radiation Protection Program required pursuant to (4) of this Rule, including:

(i) The provisions of the Program; and

(ii) Audits and other reviews of Program content and implementation.

2. The licensee shall retain the records required by (14)(b)1.(i) of this Rule until the Director terminates each pertinent license requiring the record. The licensee shall retain each of the records required by (14)(b)1.(ii) of this Rule for three years after the record is made.

(c) Records of Surveys.

1. Each licensee shall maintain records showing the results of surveys and calibrations required by (8)(a) and (12)(f)2. of this Rule. The licensee shall retain each of these records for three years after the record is made.

2. The licensee shall retain each of the following records until the Director terminates each pertinent license requiring the record:

(i) Records of the results of surveys to determine the dose from external sources of radiation used, in the absence of or in combination with individual monitoring data, in the assessment of individual dose equivalents;

(ii) Records of the results of measurements and calculations used to determine individual intakes of radioactive material and used in the assessment of internal dose;

(iii) Records showing the results of air sampling, surveys, and bioassays required pursuant to (10)(d)1.(iii)(I) and (II) of this Rule; and

(iv) Records of the results of measurements and calculations used to evaluate the release of radioactive effluents to the environment.

3. Upon termination of the license, the licensee shall permanently store records on Division Form "Occupational Radiation Exposure History" or equivalent or shall make provision with the Division for their transfer to the Division.

(d) Records of Tests for Leakage or Contamination of Sealed Sources. Records of tests for leakage or contamination of sealed sources required by (6) of this Rule shall be kept in units of microcuries or becquerels and maintained for inspection by the Division for three years after the record is made.

(e) Records of Prior Occupational Dose.

1. The licensee shall retain the records of prior occupational dose and of exposure history as specified in (5)(e) of this Rule on Division Form "Occupational Radiation Exposure History" or equivalent until the Director terminates each pertinent license requiring this record. The licensee shall retain records used in preparing Division Form "Occupational Radiation Exposure History" for three years after the record is made.

2. Upon termination of the license, the licensee shall permanently store records on Division Form "Occupational Radiation Exposure History" or equivalent or shall make provision with the Division for their transfer to the Division.

(f) Records of Planned Special Exposures.

1. For each use of the provisions of (5)(e) of this Rule for planned special exposures, the licensee shall maintain records that describe:

(i) The exceptional circumstances requiring the use of a planned special exposure;

(ii) The name of the management official who authorized the planned special exposure and a copy of the signed authorization;

(iii) What actions were necessary;

(iv) Why the actions were necessary;

(v) What precautions were taken to assure that doses were maintained ALARA;

(vi) What individual and collective doses were expected to result; and

(vii) The doses actually received in the planned special exposure.

2. The licensee shall retain the records until the Director terminates each pertinent license requiring these records.

3. Upon termination of the license, the licensee shall permanently store records on Division Form "Occupational Radiation Exposure History" or equivalent or shall make provision with the Division for their transfer to the Division.

(g) Records of Individual Monitoring Results.

1. Record-keeping Requirement. Each licensee shall maintain records of doses received by all individuals for whom monitoring was required pursuant to (8)(b) of this Rule and records of doses received during planned special

exposures, accidents, and emergency conditions. Assessments of dose equivalent and records made using units in effect before January 1, 1994, need not be changed. These records shall include when applicable:

(i) The deep dose equivalent to the whole body, lens dose equivalent, shallow dose equivalent to the skin, and shallow dose equivalent to the extremities;

(ii) The estimated intake of radionuclides (see (5)(b) of this Rule);

(iii) The committed effective dose equivalent assigned to the intake of radionuclides;

(iv) The specific information used to calculate the committed effective dose equivalent pursuant to (5)(d)3. of this Rule;

(v) The total effective dose equivalent when required by (5)(b) of this Rule; and

(vi) The total of the deep dose equivalent and the committed dose to the organ receiving the highest total dose.

2. Record-keeping Frequency. The licensee shall make entries of the records specified in (14)(g)1. of this Rule at intervals not to exceed one year.

3. Record-keeping Format. The licensee shall maintain the records specified in (14)(g)1. of this Rule on Division Form "Occupational Radiation Exposure History" in accordance with the instructions or in clear and legible records containing all the information required by the Division Form.

4. The licensee shall maintain the records of dose to an embryo/fetus with the records of dose to the declared pregnant woman. The declaration of pregnancy, including the estimated date of conception, shall also be kept on file, but may be maintained separately from the dose records.

5. The licensee shall retain each required form or record until the Director terminates each pertinent license requiring the record.

6. Upon termination of the license, the licensee shall permanently store records on Division Form "Occupational Radiation Exposure History" or equivalent or shall make provisions with the Division for their transfer to the Division.

7. Privacy Protection. The records required pursuant to (14)(g) should be protected from public disclosure because of their personal privacy nature.

(h) Records of Dose to Individual Members of the Public.

1. Each licensee shall maintain records sufficient to demonstrate compliance with the dose limit for individual members of the public. See (5)(i) of this Rule.

2. The licensee shall retain the records required by (14)(h)1. of this Rule until the Director terminates each pertinent license requiring the record.

(i) Records of Waste Disposal.

1. Each licensee shall maintain records of the disposal of licensed materials made pursuant to (13)(b), (13)(c), (13)(d), (13)(e), and (13)(k) of this Rule and of disposal of licensed materials by burial in soil, including burials authorized before July 12, 1982.[6]

2. The licensee shall retain the records required by (14)(i) of this Rule until the Director terminates each pertinent license requiring the record.

(j) Records of Testing Entry Control Devices for Very High Radiation Areas.

1. Each licensee shall maintain records of tests made on entry control devices for very high radiation areas. These records must include the date, time, and results of each such test of function.

2. The licensee shall retain the records required by (14)(j)1. of this Rule for three years after the record is made.

(k) Form of Records. Each record required by this Rule shall be legible throughout the specified retention period. The record shall be the original or a reproduced copy or a microform, provided that the copy or microform is authenticated by authorized personnel and that the microform is capable of producing a clear copy throughout the required retention period; or the record may also be stored in electronic media with the capability for producing legible, accurate, and complete records during the required retention period. Records, such as letters, drawings, and specifications, shall include all pertinent information, such as stamps, initials, and signatures. The licensee shall maintain adequate safeguards against tampering with and loss of records.

(15) **Reports.**

(a) Reports of Stolen, Lost, or Missing Licensed Sources of Radiation.

1. Telephone. Each licensee shall report to the Division by telephone as follows:

(i) Immediately after its occurrence becomes known to the licensee, stolen, lost, or missing licensed radioactive material in an aggregate quantity equal to or greater than 1,000 times the quantity specified in Appendix C of 10 CFR 20, under such circumstances that it appears to the licensee that an exposure could result to individuals in unrestricted areas; or

(ii) Within 30 days after its occurrence becomes known to the licensee, lost, stolen or missing licensed radioactive material in an aggregate quantity greater than ten times the quantity specified in Appendix C of 10 CFR 20 that is still missing.

2. Written. Each licensee who is required to make a report pursuant to (15)(a)1. of this Rule shall, within 30 days after making the telephone report, make a written report to the Division setting forth the following information:

(i) A description of the licensed source of radiation involved, including, for radioactive material, the kind, quantity, and chemical and physical form;

(ii) A description of the circumstances under which the loss or theft occurred;

(iii) A statement of disposition, or probable disposition, of the licensed material or source of radiation involved;

(iv) Exposures of individuals to radiation, the circumstances under which the exposures occurred, and the possible total effective dose equivalent to persons in unrestricted areas;

(v) Actions that have been taken, or will be taken, to recover the source of radiation; and

(vi) Procedures or measures that have been, or will be, adopted to ensure against a recurrence of the loss or theft of licensed sources of radiation.

3. Subsequent to filing the written report, the licensee shall also report additional substantive information on the loss or theft within 30 days after the licensee learns of such information.

4. The licensee shall prepare any report filed with the Division pursuant to (15)(a) of this Rule so that names of individuals who may have received exposure to radiation are stated in a separate and detachable portion of the report.

(b) Notification of Incidents.

1. Immediate notification. Each licensee shall:

(i) Notify the Division as soon as possible but not later than four hours after the discovery of an event that prevents immediate protective actions necessary to avoid exposures to radiation or radioactive materials that could exceed regulatory limits or releases of licensed material that could exceed regulatory limits (events may include fires, explosions, toxic gas releases, etc.).

(ii) Notwithstanding any other requirements for notification, immediately report, to the Division, any event involving radioactive material or sources of radiation possessed by the licensee that may have caused or threatens to cause any of the following conditions:

(I) An individual to receive:

I. A total effective dose equivalent of 25 rem (0.25 Sv) or more; or

II. An lens dose equivalent of 75 rem (0.75 Sv) or more; or

III. A shallow-dose equivalent to the skin or extremities of 250 rad (2.5 Gy) or more; or

(II) The release of radioactive material, inside or outside a restricted area, so that had an individual been present for 24 hours, the individual could have received an intake five times the annual limit on intake (the provisions of this paragraph do not apply to locations where personnel are not normally stationed during routine operations, such as hot cells or process enclosures).

2. Twenty-four hour report. Each licensee shall notify the Division within 24 hours after the discovery of any of the following events involving licensed material:

(i) An unplanned contamination event that:

(I) Requires access to the contaminated area, by workers or the public, to be restricted for more than 24 hours by imposing additional radiological controls or by prohibiting entry into the area;

(II) Involves a quantity of material greater than five times the lowest annual limit on intake specified in Appendix B of 10 CFR Part 20 for the material; and

(III) Has access to the area restricted for a reason other than to allow isotopes with a half-life of less than 24 hours to decay prior to decontamination.

(ii) An event in which equipment is disabled or fails to function as designed when:

(I) The equipment is required by regulation or license condition to prevent releases exceeding regulatory limits, to prevent exposures to radiation and radioactive materials exceeding regulatory limits, or to mitigate the consequences of an accident;

(II) The equipment is required to be available and operable when it is disabled or fails to function; and

(III) No redundant equipment is available and operable to perform the required safety function.

(iii) An event that requires unplanned medical treatment at a medical facility of an individual with spreadable radioactive contamination on the individual's clothing or body;

(iv) An unplanned fire or explosion damaging any licensed material or any device, container, or equipment containing licensed material when:

(I) The quantity of material involved is greater than five times the lowest annual limit on intake specified in Appendix B of 10 CFR Part 20 for the material; and

(II) The damage affects the integrity of the licensed material or its container.

(v) Notwithstanding any other requirements for notification, within 24 hours report, to the Division any event involving radioactive material or sources of radiation possessed by the licensee that may have caused or threatens to cause any of the following conditions:

(I) An individual to receive, in a period of 24 hours:

I. A total effective dose equivalent exceeding 5 rems (0.05 Sv); or

II. A lens dose equivalent exceeding 15 rems (0.15 Sv); or

III. A shallow-dose equivalent to the skin or extremities exceeding 50 rems (0.5 Sv); or

(II) The release of radioactive material, inside or outside of a restricted area, so that, had an individual been present for 24 hours, the individual could have received an intake in excess of one occupational annual limit on intake (the provisions of this paragraph do not apply to locations where personnel are not normally stationed during routine operations, such as hot-cells or process enclosures).

3. Preparation and submission of reports. Reports made by licensees in response to the requirements of this section must be made as follows:

(i) Licensees shall make reports required by (15)(b)(1.) and (2.) by telephone to the Division. To the extent that the information is available at the time of notification, the information provided in these must include:

(I) The caller's name, position title, and call back telephone number;

(II) Date, time, and the exact location of the event;

(III) Description of the event, including:

I. Radiological or chemical hazards involved, including isotopes, quantities, and chemical and physical form of any material released;

II. Actual or potential health and safety consequences to the workers, the public, and the environment, including relevant chemical and radiation data for actual personnel exposures to radiation or radioactive materials or hazardous chemicals produced from licensed materials (e.g., level of radiation exposure, concentration of chemicals, and duration of exposure);

III. The sequence of occurrences leading to the event, including degradation or failure of structures, systems, equipment, components, and activities of personnel relied on to prevent potential accidents or mitigate their consequences; and

IV. Whether the remaining structures, systems, equipment, components, and activities of personnel relied on to prevent potential accidents or mitigate their consequences are available and reliable to perform their function;

(IV) External conditions affecting the event;

(V) Additional actions taken by the licensee in response to the event;

(VI) Status of the event (e.g., whether the event is on-going or was terminated);

(VII) Current and planned site status, including any declared emergency class;

(VIII) Notifications, related to the event, that were made or are planned to any local, State, or other Federal agencies;

(IX) Status of any press releases, related to the event, that were made or are planned.

(ii) Written report. Each licensee who makes a report required by (15)(b)(1) and (2) shall submit a written follow-up report within 30 days of the initial report. Written reports prepared pursuant to other regulations may be submitted to fulfill this requirement if the reports contain all of the necessary information and the appropriate distribution is made. These written reports must be sent to the Radioactive Materials Program, 4244 International Parkway, Suite 120, Atlanta, Georgia 30354 or current mailing address. The written report must include the following:

(I) Complete applicable information required by (b)(3)(i);

(II) A description of the event, including the probable cause, all factors that contributed to the event, and the manufacturer and model number (if applicable) of any equipment that failed or malfunctioned; and

(III) Corrective actions taken or planned to prevent occurrence of similar or identical events in the future and the results of any evaluations or assessments.

4. The licensee shall prepare each report filed with the Division pursuant to (15)(b) of this Rule so that names of individuals who have received exposure to sources of radiation are stated in a separate and detachable portion of the report.

5. Licensees shall make the required by (15)(b)1. and 2. of this Rule by telephone to the Division, and shall confirm the initial contact by telegram, mailgram, or facsimile to the Division.

6. The provisions of (15)(b) of this Rule do not apply to doses that result from planned special exposures, provided such doses are within the limits for planned special exposures and are reported pursuant to (15)(d) of this Rule.

(c) Reports of Exposures, Radiation Levels, and Concentrations of Radioactive Material Exceeding the Limits.

1. Reportable Events. In addition to the notification required by (15)(b) of this Rule, each licensee shall submit a written report to the Division within 30 days after learning of any of the following occurrences:

(i) Incidents for which notification is required by (15)(b) of this Rule;

(ii) Doses in excess of any of the following:

(I) The occupational dose limits for adults in (5)(a) of this Rule;

(II) The occupational dose limits for a minor in (5)(g) of this Rule;

(III) The limits for an embryo/fetus of a declared pregnant woman in (5)(h) of this Rule;

(IV) The limits for an individual member of the public in (5)(i) of this Rule;

(V) Any applicable limit in the license; or

(VI) The ALARA constraints for air emissions established under .03(4)(d).

(iii) Levels of radiation or concentrations of radioactive material in:

(I) A restricted area in excess of applicable limits in the license; or

(II) An unrestricted area in excess of ten times the applicable limit set forth in this Rule or in the license, whether or not the exposure of any individual in excess of the limits in (5)(i) of this Rule is involved; or

(iv) For licensees subject to the provisions of U.S. Environmental Protection Agency's generally applicable environmental radiation standards in 40 CFR 190, levels of radiation or releases of radioactive material in excess of those standards, or of license conditions related to those standards.[7]

2. Contents of Reports.

(i) Each report required by (15)(c)1. of this Rule shall describe the extent of exposure of individuals to radiation and radioactive material, including, as appropriate:

(I) Estimates of each individual's dose;

(II) The levels of radiation and concentrations of radioactive material involved;

(III) The cause of the elevated exposures, dose rates, or concentrations; and

(IV) Corrective steps taken or planned to ensure against a recurrence, including the schedule for achieving conformance with applicable limits, ALARA constraints, generally applicable environmental standards, and associated license conditions.

(ii) Each report filed pursuant to (14)(c)1. of this Rule shall include for each occupationally exposed individual: the name, Social Security account number, and date of birth. With respect to the limit for the embryo/fetus in (5)(h) of this Rule, the identification should be that of the declared pregnant woman. The report shall be prepared so that this information is stated in a separate and detachable portion of the report.

3. All licensees who make pursuant to (15)(c)1. of this Rule shall submit the report in writing to the Division.

(d) Reports of Planned Special Exposures. The licensee shall submit a written report to the Division within 30 days following any planned special exposure conducted in accordance with (5)(f) of this Rule, informing the Division that a planned special exposure was conducted and indicating the date that the planned special exposure occurred and the information required by (14)(g) of this Rule.

(e) Reports to Individuals of Exceeding Dose Limits. When a licensee is required, pursuant to the provisions of (15)(c), (15)(d), or (15)(f), to report to the Division any exposure of an identified occupationally exposed individual, or an identified member of the public to radiation or radioactive material, the licensee shall also provide a copy of the report submitted to the Division to the individual. This report must be transmitted at a time no later than the transmittal to the Division.

(f) Notifications and Reports to Individuals.

1. Requirements for notification and to individuals of exposure to radiation or radioactive material are specified in Rule 391-3-17-.07(4).

2. When a licensee is required pursuant to (15)(c) of this Rule to report to the Division any exposure of an identified occupationally exposed individual or identified member of the public to radiation or radioactive material, the licensee shall also provide the individual a report on his or her exposure data included in the report to the Division. This report shall be transmitted at a time not later than the transmittal to the Division, and shall comply with the provisions of Rule 391-3-17-.07(4)(a).

(g) Reports of Leaking or Contaminated Sealed Sources. If the test for leakage or contamination required pursuant to Rule .03(6) indicates that the sealed source is leaking or contaminated, a report of the test shall be filed within five days with the Division describing the equipment involved, the test results, and the corrective action taken.

(h) [Reserved]

(i) Serialization of Nationally Tracked Sources.

1. Each licensee who manufactures a nationally tracked source after February 6, 2007 shall assign a unique serial number to each nationally tracked source. Serial numbers must be composed only of alpha-numeric characters.

(j) Reports of Transactions Involving Nationally Tracked Sources.

1. Each licensee who manufactures, transfers, receives, disassembles, or disposes of a nationally-tracked source shall complete and submit a National Source Tracking Transaction Report as specified below for each type of transaction.

2. Each licensee who manufactures a nationally tracked source shall complete and submit a National Source Tracking Transaction Report. The report must include the following information:

(i) The name, address, and license number of the reporting licensee;

(ii) The name of the individual preparing the report;

(iii) The manufacturer, model, and serial number of the source;

(iv) The radioactive material in the source;

(v) The initial source strength in becquerels (curies) at the time of manufacture; and

(vi) The manufacture date of the source.

3. Each licensee that transfers a nationally tracked source to another person shall complete and submit a National Source Tracking Transaction Report. The report must include the following information:

(i) The name, address, and license number of the reporting licensee;

(ii) The name of the individual preparing the report;

(iii) The name and license number of the recipient facility and shipping address;

(iv) The manufacturer, model, and serial number of the source or, if not available, other information to uniquely identify the source;

(v) The radioactive material in the source;

(vi) The initial or current source strength in becquerels (curies);

(vii) The date for which the source strength is reported;

(viii) The shipping date;

(ix) The estimated arrival date; and

(x) For nationally tracked sources transferred as waste under a Uniform Low-Level Radioactive Waste Manifest, the waste manifest number and the container identification of the container with the nationally tracked source.

4. Each licensee that receives a nationally tracked source shall complete and submit a National Source Tracking Transaction Report. The report must include the following information:

(i) The name, address, and license number of the reporting licensee;

(ii) The name of the individual preparing the report;

(iii) The name, address and license number of the person that provided the source;

(iv) The manufacturer, model, and serial number of the source or, if not available, other information to uniquely identify the source;

(v) The radioactive material in the source;

(vi) The initial or current source strength in becquerels (curies);

(vii) The date for which the source strength is reported;

(viii) The date of receipt; and

(ix) For material received under a Uniform Low-Level Radioactive Waste Manifest, the waste manifest number and the container identification with the nationally tracked source.

5. Each licensee that disassembles a nationally tracked source shall complete and submit a National Source Tracking Transaction Report. The report must include the following information:

(i) The name, address, and license number of the reporting licensee;

(ii) The name of the individual preparing the report;

(iii) The manufacturer, model, and serial number of the source or, if not available, other information to uniquely identify the source;

(iv) The radioactive material in the source;

(v) The initial or current source strength in becquerels (curies);

(vi) The date for which the source strength is reported; and

(vii) The disassemble date of the source.

6. Each licensee who disposes a nationally tracked source shall complete and submit a National Source Tracking Transaction Report. The report must include the following information:

(i) The name, address, and license number of the reporting licensee;

(ii) The name of the individual preparing the report;

(iii) The waste manifest number;

(iv) The container identification with the nationally tracked source;

(v) The date of disposal; and

(vi) The method of disposal.

7. The reports discussed in (15)(j)2.-6. above must be submitted by the close of the next business day after the transaction. A single report may be submitted for multiple sources and transactions. The reports must be submitted to the National Source Tracking System by using:

(i) The on-line National Source Tracking System;

(ii) Electronically using a computer-readable format;

(iii) By facsimile;

(iv) By mail to the address on the National Sources Tracking Transaction Report Form (NRC Form 748); or

(v) By telephone with follow-up by facsimile or mail.

8. Each licensee shall correct any error in previously filed reports or file a new report for any missed transaction within five (5) business days of the discovery of the error or missed transaction. Such errors may be detected by a variety of methods such as administrative reviews or by physical inventories required by regulation. In addition, each licensee shall reconcile the inventory of nationally tracked sources possessed by the licensee against that licensee's data in the National Source Tracking System. The reconciliation must be conducted during the month of January in each year. The reconciliation process must include resolving any discrepancies between the National Source Tracking System and the actual inventory by filing the reports identified in (15)(j)2-6 of this section. By January 31 of each year, each licensee must submit to the National Source Tracking System confirmation that the data in the National Source Tracking System is correct.

9. Each licensee that possesses Category 1 nationally tracked sources shall report its initial inventory of Category 1 nationally tracked sources to the National Source Tracking System by January 31, 2009. Each licensee that possesses Category 2 nationally tracked sources shall report its initial inventory of Category 2 nationally tracked sources to the National Source Tracking System by January 31, 2009. Nationally Tracked Source Thresholds are presented in Table 3 of 391-3-17-.03(15). The information may be submitted by using any of the methods identified in (15)(j)7. The initial inventory report must include the following information:

(i) The name, address, and license number of the reporting licensee;

(ii) The name of the individual preparing the report;

(iii) The manufacturer, model, and serial number of each nationally tracked source or, if not available, other information to uniquely identify the source;

(iv) The radioactive material in the source;

(v) The initial or current source strength in becquerels (curies); and

(vi) The date for which the source strength is reported.

Table 3: Nationally Tracked Source Thresholds

Radioactive Material	**Category 1 (TBq)**	**Category 1 (Ci)**	**Category 2 (TBq)**	**Category 2 (Ci)**
Actinium-227	20	540	0.2	5.4
Americium-241	60	1,600	0.6	16
Americium-241/Beryllium	60	1,600	0.6	16
Californium-252	20	540	0.2	5.4
Cobalt-60	30	810	0.3	8.1
Curium-244	50	1,400	0.5	14
Cesium-137	100	2,700	1	27
Gadolinium-153	1,000	27,000	10	270
Iridium-192	80	2,200	0.8	22
Plutonium-238	60	1,600	0.6	16
Plutonium-238/Beryllium	60	1,600	0.6	16

Radioactive Material	Category 1 (TBq)	Category 1 (Ci)	Category 2 (TBq)	Category 2 (Ci)
Polonium-210	60	1,600	0.6	16
Promethium-147	40,000	1,100,000	400	11,000
Radium-226	40	1,100	0.4	11
Selenium-75	200	5,400	2	54
Strontium-90	1,000	27,000	10	270
Thorium-228	20	540	0.2	5.4
Thorium-229	20	540	0.2	5.4
Thulium-170	20,000	540,000	200	5,400
Ytterbium-169	300	8,100	3	81

The Terabecquerel (TBq) values are the regulatory standard. The Curie (Ci) values specified are obtained by converting from the TBq value. The Curie values are provided for practical usefulness only and are rounded after conversion.

(16) **Exemptions and Additional Requirements.**

(a) Vacating Premises. Each specific licensee shall, no less than 30 days before vacating or relinquishing possession or control of premises which may have been contaminated with radioactive material as a result of his activities, notify the Division in writing of his intent to vacate. When deemed necessary by the Division, the licensee shall decontaminate the premises in such a manner as the Division may specify.

(b) Orders. The Director may, by order, impose upon any licensee such requirements, issued in furtherance of this rule, as it deems appropriate or necessary to protect health or minimize danger to life or property.

[1] For very high doses received at high dose rates, units of absorbed dose, Gray and rad, are appropriate, rather than units of dose equivalent, Sievert and rem.

[2] The National Council on Radiation Protection and Measurements recommended in NCRP Report No. 91 (June 1, 1987) that no more than 0.05 rem (0.5 mSv) to the embryo/fetus be received in any one month.

[3] All of the occupational doses in .03(5)(a) continue to be applicable to the declared pregnant worker as long as the embryo/fetus dose limit is not exceeded.

[4] Labeled with a Radioactive White I, Yellow II, or Yellow III label as specified in U.S. Department of Transportation (DOT) regulations, 49 CFR 172.403-172.440.

[5] Labeling of packages containing radioactive materials is required by the U.S. Department of Transportation (DOT) if the amount and type of radioactive material exceeds the limits for an excepted quantity or article as defined and limited by U.S. Department of Transportation (DOT) regulations 49 CFR 173.403(m) and (w) and 173.421-.424.

[6] A previous Rule, .03(5)(d), permitted burial of small quantities of licensed materials in soil before July 12, 1982, without specific Division authorization.

[7] For purposes of these Regulations, the U.S. Environmental Protection Agency Standards apply only to source material mills and nuclear power plants.

Cite as Ga. Comp. R. & Regs. R. 391-3-17-.03

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Amended: F. Mar. 24, 2021; eff. Apr. 13, 2021.

391-3-17-.04 Special Radiation Safety Requirements for Industrial Radiographic Operations

(1) **Purpose.**

The provisions of this Rule establish radiation safety requirements and certification procedures for persons utilizing radioactive materials for industrial radiography. Each licensee and certificate holder is responsible for ensuring compliance with these Rules, his license conditions, and Orders of the Director. Each licensee and certificate holder is also responsible for ensuring that persons performing activities under a license comply with the Rules, license conditions, and Orders of the Director.

(2) **Scope.**

(a) The provisions of this Rule are in addition to and not a substitution for the other requirements of this Chapter. The provisions of this Rule apply to all licensees who use radioactive materials for industrial radiography; provided, however, that nothing in this Rule shall apply to the use of radioactive materials in the healing arts.

(b) The licensee shall inform the Division within three days of work to be performed at temporary job sites within the State of Georgia. If the licensee was not given three days notice for a particular job site the licensee shall provide notification to the Division prior to starting work at the site. The following information is required in the notification: the location of the job site; the employing company; a point of contact for the employing company; the dates of the job; and the starting and ending times on the job site.

(3) **Definitions.** The definitions set forth for certain terms in Rule 391-3-17-.01 are applicable to those terms as used in this Rule. The following additional definitions also apply:

(a) "Annual refresher safety training" means a review conducted or provided by the licensee for its employees on radiation safety aspects of industrial radiography. The review shall include, as a minimum, any results of internal

inspections, new procedures or equipment, new or revised regulations, and accidents or errors that have been observed. The review shall also provide opportunities for employees to ask safety questions.

(b) "ANSI" means American National Standards Institute.

(c) "Associated equipment" means equipment that is used in conjunction with a radiographic exposure device to make radiographic exposures that drives, guides, or comes in contact with the source. (e.g., guide tube, control tube, control (drive) cable, removable source stop, "J" tube and collimator when used as an exposure head.).

(d) "Cabinet radiography" means industrial radiography conducted in an enclosure or cabinet so shielded that radiation levels at every location on the exterior meet the conditions specified in Rule 391-3-17-.03(5)(i).

(e) "Certifying entity" means an independent certifying organization meeting the requirements in Appendix A of this Rule or an Agreement State regulatory program meeting the requirements in Appendix A, Parts II and III of this Rule.

(f) "Collimator" means a device used to limit the size, shape, and direction of the primary beam of radiation.

(g) "Control cable" means the cable that is connected to the source assembly and used to drive the source to and from the exposure location.

(h) "Control drive mechanism" means a device that enables the source assembly to be moved into and out of the exposure device.

(i) "Control tube" means a protective sheath for guiding the control cable. The control tube connects the control drive mechanism to the radiographic exposure device.

(j) "Enclosed radiography" means industrial radiography conducted in an enclosed cabinet or room and includes cabinet radiography and shielded room radiography.

(k) "Exposure head" means a device that locates the gamma radiography sealed source in the selected working position. An exposure head is also known as a source stop.

(l) "Field station" means a facility from which sources of radiation may be stored or used and from which equipment is dispatched.

(m) "Guide tube" means a flexible or rigid tube, or "J" tube, for guiding the source assembly and the attached control cable from the exposure device to the exposure head. The guide tube may also include the connections necessary for attachment to the exposure device and to the exposure head.

(n) "Hands-on experience" means experience in all of those areas considered to be directly involved in the radiography process.

(o) "Independent certifying organization" means an independent organization that meets all of the criteria of Appendix A of this Rule.

(p) "Industrial radiography" means the examination of the macroscopic structure of materials by nondestructive methods using sources of ionizing radiation to produce radiographic images.

(q) "Lay-barge radiography" means industrial radiography performed on any water vessel used for laying pipe.

(r) "Offshore platform radiography" means industrial radiography conducted from a platform over a body of water.

(s) "Permanent radiographic installation" means a shielded installation or structure designed or intended for radiography and in which radiography is regularly performed.

(t) "Personal supervision" means guidance and instruction provided to a radiographer's assistant by a radiographer who is present at the site, in visual contact with the radiographer's assistant while the radiographer's assistant is using radioactive material, and in such proximity that immediate assistance can be given if required.

(u) "Pigtail" see "Source assembly".

(v) "Pill" see "Sealed source".

(w) "Practical examination" means a demonstration through application of the safety rules and principles in industrial radiography including use of all procedures and equipment to be used by radiographic personnel.

(x) "Radiation Safety Officer" means an individual named by the licensee who has a knowledge of, responsibility for, and authority to impose appropriate radiation protection rules, standards, and practices on behalf of the licensee and who meets the requirements of (15) of this Rule.

(y) "Radiographer" means any individual who performs or who, in attendance at the site where radioactive materials are being used, personally supervises industrial radiographic operations and who is responsible to the licensee for assuring compliance with the requirements of this Chapter and all license conditions.

(z) "Radiographer certification" means written approval received from a certifying entity stating that an individual has satisfactorily met the radiation safety, testing, and experience criteria in (16) of this rule.

(aa) "Radiographer's assistant" means any individual who under the direct supervision of a radiographer, uses radiographic exposure devices, radioactive materials, related handling tools, or radiation survey instruments in industrial radiography.

(bb) "Radiographic exposure device" means any instrument containing a sealed source fastened or contained therein, in which the sealed source or shielding thereof may be moved, or otherwise changed, from a shielded to an unshielded position for purposes of making a radiographic exposure (e.g. camera).

(cc) "Radiographic operations" means all activities performed with a radiographic exposure device. Activities include using, transporting except by common or contract carriers, or storing at a temporary job site, performing surveys to confirm the adequacy of boundaries, setting up equipment, and any activity inside restricted area boundaries.

(dd) "Residential location" means any area where structures in which people live or lodge are located, and the grounds on which such structures are located including, but not limited to, houses, apartments, condominiums, and garages.

(ee) "S-tube" means a tube through which the radioactive source travels when inside a radiographic exposure device.

(ff) "Sealed source" means any radioactive material that is encased in a capsule designed to prevent leakage or escape of the radioactive material.

(gg) "Shielded position" means the location within the radiographic exposure device or storage container which, by manufacturer's design, is the proper location for storage of the sealed source.

(hh) "Shielded-room radiography" means industrial radiography conducted in a room shielded so that radiation levels at every location on the exterior meet the limitations specified in Rule 391-3-17-.03(5)(i) of this Chapter.

(ii) "Source assembly" means an assembly that consists of the sealed source and a connector that attaches the source to the control cable. The source assembly may include a ball stop to secure the source in the shielded position.

(jj) "Source changer" means a device designed and used for replacement of sealed sources in radiographic exposure devices, including those source changers also used for transporting and storage of sealed sources.

(kk) "Storage area" means any location, facility, or vehicle which is used to store, to transport, or to secure a radiographic exposure device, a storage container, or a sealed source when it is not in use and which is locked or has a physical barrier to prevent accidental exposure, tampering with, or unauthorized removal of the device, container, or source.

(ll) "Storage container" means a shielded device in which sealed sources are secured and stored.

(mm) "Temporary job site" means any location where radiographic operations are performed and where sources of radiation may be stored other than the location(s) listed specifically on the license.

(nn) "Transport container" means a package that is designed to provide radiation safety and security when sealed sources are transported and meets all applicable requirements of the U.S. Department of Transportation.

(oo) "Underwater radiography" means radiographic operations performed when the radiographic exposure device or radiation machine and/or related equipment are beneath the surface of the water.

(4) **Licensing Requirements for Industrial Radiography Operations.** The Director will approve an application for a specific license for the use of licensed material if the applicant meets the following requirements:

(a) The applicant satisfies the general requirements specified in Rule 391-3-17-.02(8), as applicable, and any special requirements contained in this Rule;

(b) The applicant submits an adequate program for training radiographers and radiographer's assistants that meets the requirements of .04(16):

1. After April 18, 2004, the applicant need not describe the initial training and examination program for radiographers in the subjects outlined in .04(16)(g).

2. The applicant may affirm that all individuals acting as industrial radiographers will be certified in radiation safety by a certifying entity before commencing duty as radiographers. This affirmation substitutes for a description of its initial training and examination program for radiographers in the subjects outlined in .04(16)(g).

(c) The applicant submits procedures for verifying and documenting the certification status of radiographers and for ensuring that the certification of individuals acting as radiographers remains valid;

(d) The applicant submits written operating and emergency procedures as described in .04(17);

(e) The applicant submits a description of a program for inspections of the job performance of each radiographer and radiographer's assistant at intervals not to exceed six months as described in .04(16)(e);

(f) The applicant submits a description of the applicant's overall organizational structure as it applies to the radiation safety responsibilities in industrial radiography, including specified delegation of authority and responsibility;

(g) The applicant submits the qualifications of the individual(s) designated as the radiation safety officer as described in .04(15)(a);

(h) If an applicant intends to perform leak testing of sealed sources or exposure devices containing depleted uranium (DU) shielding, the applicant must describe the procedures for performing the test. The description must include the:

1. Methods of collecting the samples;

2. Instruments to be used;

3. Methods of analyzing the samples; and

4. Qualifications of the individual who analyzes the samples.

(i) If the applicant intends to perform calibrations of survey instruments and alarming ratemeters, the applicant must describe methods to be used and the experience of the person(s) who will perform the calibrations. All calibrations must be performed according to the procedures described and at the intervals prescribed in .04(8)(b) and .04(19)(g)4.;

(j) The applicant identifies and describes the location(s) of all field stations and permanent radiographic installations;

(k) The applicant identifies the location(s) where all records required by this and other Rules in this Chapter will be maintained;

(l) If a license application includes underwater radiography the applicant must submit a description of:

1. Radiation safety procedures and radiographer responsibilities unique to the performance of underwater radiography;

2. Radiographic equipment and radiation safety equipment unique to underwater radiography; and

3. Methods for gas-tight encapsulation of equipment; and

(m) If an application includes offshore platform and/or lay-barge radiography the applicant must submit a description of:

1. Transport procedures for radioactive material to be used in industrial radiographic operations;

2. Storage facilities for radioactive material; and

3. Methods for restricting access to radiation areas.

(5) **Performance Requirements for Radiography Equipment.** Equipment used in industrial radiographic operations must meet the following minimum criteria:

(a) Each radiographic exposure device, source assembly or sealed source and all associated equipment must meet the requirements specified in American National Standards Institute (ANSI) N432-1980 "Radiological Safety for the Design and Construction of Apparatus for Gamma Radiography," (published as NBS Handbook 136, issued January 1981). (This publication may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402 and from the American National Standards Institute, Inc., 25 West 43rd Street, New York, New York 10036, Telephone (212) 642-4900. Copies of the document are available for inspection at the Department of Natural Resources, Environmental Protection Division, Radioactive Materials Program, 4244 International Parkway, Suite 120, Atlanta, Georgia 30354 or current address.).

(b) In addition to the requirements specified in (5)(a) of this Rule, the following requirements apply to radiographic exposure devices, source changers, source assemblies or sealed sources:

1. Each radiographic exposure device must have attached to it by the user, a durable, legible, clearly visible label bearing the:

(i) Chemical symbol and mass number of the radionuclide in the device;

(ii) Activity and the date on which this activity was last measured;

(iii) Model number (or product code) and serial number of the sealed source;

(iv) Manufacturer of the sealed source; and

(v) Licensee's name, address, and telephone number.

2. Radiographic exposure devices intended for use as Type B transport containers must meet the applicable requirements of 10 CFR Part 71.

3. Modification of any radiographic exposure devices, source changers, source assemblies and associated equipment is prohibited, unless the design of any replacement component, including source holder, source assembly, controls or guide tubes would not compromise the design safety features of the system.

(c) In addition to the requirements specified in .04(5)(a) and (5)(b) the following requirements apply to radiographic exposure devices, source assemblies and associated equipment that allow the source to be moved out of the device for routine operation or to source changers:

1. The coupling between the source assembly and the control cable must be designed in such a manner that the source assembly will not become disconnected if cranked outside the guide tube. The coupling must be such that it cannot be unintentionally disconnected under normal and reasonably foreseeable abnormal conditions.

2. The device must automatically secure the source assembly when it is cranked back into the fully shielded position within the device. This securing system may only be released by means of a deliberate operation on the exposure device.

3. The outlet fittings, lock box, and drive cable fittings on each radiographic exposure device must be equipped with safety plugs or covers which must be installed during storage and transportation to protect the source assembly from water, mud, sand or other foreign matter.

4. Each sealed source or source assembly must have attached to it or engraved in it, a durable, legible, visible label with the words: "DANGER - RADIOACTIVE." The label must not interfere with the safe operation of the exposure device or associated equipment.

5. The guide tube must be able to withstand a crushing test that closely approximates the crushing forces that are likely to be encountered during use, and be able to withstand a kinking resistance test that closely approximates the kinking forces likely to be encountered during use.

6. Guide tubes must be used when moving the source out of the device.

7. An exposure head or similar device designed to prevent the source assembly from passing out of the end of the guide tube must be attached to the outermost end of the guide tube during radiographic operations.

8. The guide tube exposure head connection must be able to withstand the tensile test for control units specified in ANSI N432-1980.

9. Source changers must provide a system for ensuring that the source will not be accidentally withdrawn from the changer when connecting or disconnecting the drive cable to or from a source assembly.

(d) All radiographic exposure devices and associated equipment in use after January 10, 1996 must comply with the requirements of .04(5).

(e) Notwithstanding (5)(a) equipment used in industrial radiographic operations need not comply with section 8.9.2(c) of the Endurance Test in ANSI N432-1980 if the prototype equipment has been tested using a torque value representative of the torque that an individual using the radiography equipment can realistically exert on the lever or crankshaft of the drive mechanism.

(6) **Equipment Control. Limits on External Radiation Levels From Storage Containers and Source Changers.** The maximum exposure rate limits for storage containers and source changers are 2 millisieverts (200 mrem) per hour at any exterior surface, and 0.1 millisieverts (10 mrem) per hour at one meter from any exterior surface with the sealed source in the shielded position.

(7) **Locking and Storage of Radiographic Devices, Storage Containers, and Source Changers.**

(a) Each radiographic exposure device shall be provided with a lock or outer locked container designed to prevent unauthorized or accidental removal of a sealed source from its shielded position. The exposure device and/or its container shall be kept locked[1] at all times except when not under the direct surveillance of a radiographer or a radiographer's assistant except at a permanent radiographic installations as stated in .04(21).

(b) Each sealed source storage container and source changer shall be provided with a lock or outer locked container designed to prevent unauthorized or accidental removal of the sealed source from its shielded position. Storage containers and source changers must be and kept locked when containing sealed sources except when the container is under the direct surveillance of a radiographer of radiographer's assistant.

(c) Radiographic exposure devices, source changers, and storage containers, prior to being moved from one location to another and also prior to being secured at a given location, shall be locked and surveyed to assure that the sealed source is in the shielded position.

(d) During radiographic operations the sealed source shall be secured in its shielded position by locking the exposure device or securing the remote control each time the sealed source is returned to its shielded position. A survey shall be performed to determine that the sealed source is in the shielded position.

(e) Storage Precautions.

1. Locked radiographic exposure devices and storage containers shall be physically secured to prevent tampering or removal by unauthorized personnel.

2. Radiographic exposure devices, source changers, or transport containers that contain radioactive material may not be stored in residential locations. This Rule does not apply to storage of radioactive material in a vehicle in transit for use at temporary job sites, if the licensee complies with (7)(e)3. of this Rule and if the vehicle does not constitute a permanent storage location as described in (7)(e)4. of this Rule.

3. If a vehicle is to be used for storage of radioactive material, a vehicle survey shall be performed after securing the radioactive material in the vehicle and before transport to ensure that radiation levels do not exceed the limits specified in Rule .03(5)(i) of this Chapter at the exterior surface of the vehicle.

(i) If this vehicle is parked in a residential location a 360° survey of the vehicle must be performed before leaving the vehicle unattended to ensure that radiation levels do not exceed the limits specified in Rule .03(5)(i) of this Chapter.

(ii) An unattended vehicle shall have the name, local address, and local telephone number of the person responsible for the vehicle, posted on it in a conspicuous place on the vehicle.

4. A storage or use location is considered permanent if radioactive material is stored at the location for more than 90 days and any one or more of the following applies to the location:

(i) Telephone service is established by the licensee;

(ii) Industrial radiographic services are advertised for or from the location;

(iii) Industrial radiographic operations are conducted at other sites due to arrangements made from the location.

(8) **Radiation Survey Instruments.**

(a) The licensee shall maintain sufficient calibrated and operable radiation survey instruments to make physical radiation surveys as required by this Rule and Rule 391-3-17-.03(7)(a)1. and 2. Instrumentation required herein shall have a range such that two milliroentgens per hour through one Roentgen per hour can be measured.

(b) The licensee shall have each radiation survey instrument required under .04(4)(d) calibrated:

1. By a person licensed or certified by the Director, another Agreement State, or the U.S. Nuclear Regulatory Commission to perform such service;

2. At energies appropriate for the licensee's use;

3. At intervals not to exceed six months and after each instrument servicing, except for battery changes;

4. To demonstrate an accuracy within ±20 percent; and

5. At two points located approximately 1/3 and 2/3 of full-scale on each scale for linear scale instruments; at midrange of each decade, and at two points of at least one decade for logarithmic scale instruments; and at approximate points for digital instruments.

(c) The licensee shall maintained records of the results of the instrument calibrations in accordance with .04(25).

(9) **Leak Testing and Replacement of Sealed Sources.**

(a) The replacement of any sealed source fastened to or contained in a radiographic exposure device and leak testing of any sealed source shall be performed only by persons specially authorized to do so by the Division, the U.S. Nuclear Regulatory Commission, or an Agreement State.

(b) The opening, repair, or modification of any sealed source shall be performed only by persons specially authorized to do so by the Division, the U.S. Nuclear Regulatory Commission, or an Agreement State.

(c) Testing and Record keeping Requirements.

1. Each licensee who uses a sealed source shall have the source tested for leakage at intervals not to exceed six months. The leak testing of the source must be performed using a method approved by the Division, the U.S. Nuclear Regulatory Commission, or by another Agreement State. The wipe sample should be taken from the nearest accessible point to the sealed source where contamination might accumulate. The wipe sample must be analyzed for radioactive contamination. The analysis must be capable of detecting the presence of 0.005 microcuries (185 becquerel) of radioactive material on the test sample and must be performed by a person specifically authorized by the Division, the U.S. Nuclear Regulatory Commission, or another Agreement State to perform the analysis.

2. The licensee shall maintain records of the leak test in accordance with .04(26).

3. Unless a sealed source is accompanied by a certificate from a transferor that shows that it has been leak tested within the six months before the transfer, it shall not be used by the licensee until tested for leakage. Sealed sources authorized for storage and not in use do not require leak testing, but must be tested before use or transfer to another person if the interval of storage exceeds six months.

4. Any test conducted pursuant to the requirements of (9)(c)1. and 3. of this Rule which reveals the presence of 0.005 microcuries (185 becquerel) or more of removable radioactive material shall be considered evidence that the sealed source is leaking. The licensee shall immediately withdraw the equipment involved from use and shall cause it to be decontaminated and repaired or to be disposed of in accordance with Division Rules. A report shall be filed, within five (5) days after obtaining results of the test, with the Division, describing the equipment involved, the test results, and the corrective action taken.

5. Each exposure device using depleted uranium (DU) shielding and an "S" tube configuration must be tested for DU contamination at intervals not to exceed 12 months. The analysis must be capable of detecting the presence of 0.005 microcuries (185 becquerel) of radioactive material on the test sample and must be performed by a person specifically authorized by the Division, the U.S. Nuclear Regulatory Commission, or another Agreement State to perform the analysis. Should such testing reveal the presence of DU contamination, the exposure device must be

removed from use until an evaluation of the wear of the S-tube has been made. Should the evaluation reveal that the S-tube is worn through, the device may not be used again. DU shielded devices do not have to be tested for DU contamination while not in use and in storage. Before using or transferring such a device, however, the device must be tested for DU contamination, if the interval of storage exceeds 12 months. A record of the DU leak-test must be made in accordance with .04(26).

(10) **Quarterly Inventory.**

(a) Each licensee shall conduct a quarterly physical inventory to account for all sealed sources and devices containing depleted uranium received or possessed under the license.

(b) The licensee shall maintain records of the quarterly inventories in accordance with .04(27).

(11) **Inspection and Maintenance of Radiographic Exposure Devices, Transport and Storage Containers, Associated Equipment, Source Changers, and Survey Instruments.**

(a) The licensee shall perform visual and operability checks on survey meters radiographic exposure devices, transport and storage containers, associated equipment and source changers before each day's use, or work shift, to ensure that:

1. The equipment is in good working condition;

2. The sources are adequately shielded; and

3. Required labeling is present.

(b) Survey instrument operability must be performed using check sources or other appropriate means.

(c) If equipment problems are found, the equipment must be removed from service until repaired.

(d) Each licensee shall have written procedures for and perform inspection and routine maintenance of radiographic exposure devices, source changers, associated equipment, transport and storage containers, and survey instruments at intervals not to exceed three months or before the first use thereafter to ensure the proper functioning of components important to safety. If equipment problems are found, the equipment must be removed from service until repaired.

(e) The licensee's inspection and maintenance program must include procedures to assure that Type B packages are shipped and maintained in accordance with the certificate of compliance or other approval.

(f) Records of equipment problems and of any maintenance performed under .04(11)(c) and (d) shall be maintained in accordance with .04(29).

(12) **Permanent Radiographic Installations.**

(a) Each entrance that is used for personnel access to the high radiation area in a permanent radiographic installation shall have either:

1. An entrance control of the types described in Rule 391-3-17-.03(9)(a)1., or .03(9)(a)2. that causes the radiation level upon entry into the area to be reduced; or

2. Both visible and audible warning signals to warn of the presence of radiation. The visible signal shall be activated by radiation whenever the source is exposed. The audible signal shall be actuated when an attempt is made to enter the installation while the source is exposed.

(b) The alarm system shall be tested for proper operation with a radiation source each day before the installation is used for radiographic operations. The test must include a check of both the visible and audible signals. Entrance

control devices that reduce the radiation level upon entry as designated in .04(12)(a) must be tested monthly. If an entrance control device or alarm system is operating improperly, it shall be immediately labeled as defective and repaired within seven calendar days. The facility may continue to be used during this seven day period, provided the licensee implements the continuous surveillance requirements of .04(21) and uses an alarming ratemeter. Test records for entrance controls and audible and visual alarms and records of repairs must be maintained in accordance with .04(30).

(13) **Labeling, Storage, and Transportation.**

(a) The licensee may not use a source changer or a container to store radioactive material unless the source changer or the storage container has securely attached to it a durable, legible, and clearly visible label bearing the standard trefoil radiation caution symbol conventional colors, i.e., magenta, purple or black on a yellow background, having a minimum diameter of 25 mm, and the wording:

CAUTION *

RADIOACTIVE MATERIAL

NOTIFY CIVIL AUTHORITIES [or " NAME OF COMPANY"]

* -- or "DANGER"

(b) The licensee may not transport radioactive material unless the material is packaged, and the package is labeled, marked, and accompanied with appropriate shipping papers in accordance with regulations set out in Rule 391-3-17-.06.

(c) Radiographic exposure devices, source changers, and storage containers, must be physically secured to prevent tampering or removal by unauthorized personnel. The licensee shall store radioactive material in a manner that will minimize danger from explosion or fire.

(d) The licensee shall lock and physically secure the transport package containing radioactive material in the transporting vehicle to prevent accidental loss, tampering, or unauthorized removal.

(e) The licensee's name and city or town where the main business office is located shall be prominently displayed with a durable, clearly visible label(s) on both sides of all vehicles used to transport radioactive material for temporary job site use.

(14) **Conducting Industrial Radiographic Operations.**

(a) Whenever radiography is performed at a location other than a permanent radiographic installation, the radiographer must be accompanied by at least one other qualified radiographer or an individual who has at a minimum met the requirements of .04(16)(c). The additional qualified individual shall observe the operations and be capable of providing immediate assistance to prevent unauthorized entry. Radiography may not be performed if only one qualified individual is present.

(b) All radiographic operations conducted at locations of use authorized on the license must be conducted in a permanent radiographic installation, unless otherwise specifically authorized by the Division.

(c) Except when physically impossible, collimators shall be used in industrial radiographic operations that use radiographic exposure devices that allow the source to be moved out of the device.

(d) A licensee may conduct lay-barge, offshore platform, or underwater radiography only if procedures have been approved by the Division.

(15) **Radiation Safety Officer.** A Radiation Safety Officer (RSO) shall be designated on every industrial radiography license issued by the Director. The Radiation Safety Officer shall ensure that radiation safety activities

are being performed in accordance with approved procedures and regulatory requirements in the daily operation of the licensee's program.

(a) The minimum qualifications, training, and experience for radiation safety officers for industrial radiography are as follows:

1. Completion of the training and testing requirements of .04(16);

2. 2,000 hours of hands-on experience as a qualified radiographer in industrial radiographic operations; and

3. Formal training in the establishment and maintenance of a radiation protection program.

(b) The Division will consider alternatives when the radiation safety officer has appropriate training and experience in the field of ionizing radiation, and in addition, has adequate formal training with respect to the establishment and maintenance of a radiation safety protection program.

(c) The specified duties of the RSO include, but are not limited to, the following:

1. Establishing and overseeing all operating, emergency, and ALARA procedures, and to review them regularly to ensure that the procedures are current and conform with these Rules;

2. Overseeing and approving all phases of the training program for radiographic personnel so that appropriate and effective radiation protection practices are taught;

3. Ensuring that required radiation surveys and leak tests are performed and documented in accordance with these Rules, including any corrective measures when levels of radiation exceed established limits;

4. Ensuring that personnel monitoring devices are calibrated and used properly by occupationally-exposed personnel, that records are kept of the monitoring results, and that timely notifications are made as required by this Chapter;

5. Ensuring that any required interlock switches and warning signals are functioning and that radiation signs, ropes, and barriers are properly posted and positioned;

6. Investigating and reporting to the Division each known or suspected case of radiation exposure to an individual, or radiation level detected, in excess of limits established by this Chapter and each theft or loss of source(s) of radiation, to determine the cause and to take steps to prevent its recurrence;

7. Having a thorough knowledge of management policies and administrative procedures of the licensee;

8. Assuming control and having the authority to institute corrective actions including shutdown of operations when necessary in emergency situations or unsafe conditions;

9. Maintaining records as required by this Chapter;

10. Ensuring the proper storing, labeling, transport, and use of exposure devices and sources of radiation;

11. Ensuring that inventory and inspection and maintenance programs are performed in accordance with (10) and (11) of this Rule;

12. Ensuring that personnel are complying with this Chapter, the conditions of the license, and the operating and emergency procedures of the licensee.

(16) **Training.**

(a) The licensee shall not permit any individual to act as a radiographer until such individual has received at least 40 hours of training in the subjects outlined in .04(16)g, in addition to on the job training consisting of hands-on experience under the supervision of a radiographer and is certified through a radiographer certification program by a certifying entity in accordance with the criteria specified in Appendix A of this Rule. The on the job training shall include a minimum of 2 months (320 hours) of active participation in the performance of industrial radiography utilizing radioactive material.

(b) In addition, the licensee may not permit any individual to act as a radiographer until the individual:

1. Has received copies of and instruction in the requirements described in the regulations contained in this Rule, and applicable sections of Rules 391-1-7-.03, .06, and .07, in the license under which the radiographer will perform industrial radiography, and the licensee's operating and emergency procedures;

2. Has demonstrated an understanding of items in .04(16)(b)1. by successful completion of a written or oral examination;

3. Has received training in the use of the licensee's radiographic exposure devices, sealed sources, in the daily inspection of devices and associated equipment, and in the use of radiation survey instruments; and

4. Has demonstrated understanding of the use of the equipment described in .04(16)(b)3. by successful completion of a practical examination.

(c) The licensee may not permit any individual to act as a radiographer's assistant until the individual:

1. Has received copies of and instruction in the requirements described in these regulations contained in this Rule, and applicable sections of Rules 391-3-17-.03, .06, and .07, in the license under which the radiographer's assistant will perform industrial radiography, and the licensee's operating and emergency procedures;

2. Has demonstrated an understanding of items in .04(16)(c)1. by successful completion of a written or oral examination;

3. Under the personal supervision of a radiographer, has received training in the use of the licensee's radiographic exposure devices and sealed sources, in the daily inspection of devices and associated equipment, and in the use of radiation survey instruments; and

4. Has demonstrated understanding of the use of the equipment described in .04(16)(c)3. by successful completion of a practical examination.

(d) The licensee shall provide annual refresher safety training for each radiographer and radiographer's assistant at intervals not to exceed 12 months.

(e) Except as provided in .04(16)(e)4., the radiation safety officer or designee shall conduct an inspection program of the job performance of each radiographer and radiographer's assistant to ensure that the Division's Rules, the license, and operating and emergency procedures are followed. The inspection program must:

1. Include observation of the performance of each radiographer and radiographer's assistant during an actual industrial radiographic operation, at intervals not to exceed six months; and

2. Provide that, if a radiographer or a radiographer's assistant has not participated in an industrial radiographic operation for more than six months since the last inspection, the radiographer must demonstrate knowledge of the training requirements of .04(16)(b)3. and the radiographer's assistant must demonstrate knowledge of the training requirements of .04(16)(c)3. by a practical examination before these individuals can next participate in a radiographic operation.

3. The Division may consider alternative in those situations where the individual serves as both radiographer and radiation safety officer.

4. In those operations where a single individual serves as both radiographer and radiation safety officer, and performs all radiography operations, an inspection program is not required.

(f) The licensee shall maintain records of the above training to include certification documents, written, oral and practical examinations, refresher safety training and inspections of job performance in accordance with .04(31).

(g) The licensee shall include the following subjects required in .04(16)(a):

1. Fundamentals of Radiation Safety including:

(i) Characteristics of gamma and x-radiation.

(ii) Units of radiation dose (rem or Sievert) and quantity of radioactivity (Curie or becquerel).

(iii) Significance of radiation dose:

(I) Radiation protection standards;

(II) Biological effects of radiation dose; and

(III) Case histories of radiography accidents.

(iv) Levels of radiation from sources of radiation.

(v) Methods of controlling radiation dose:

(I) Working time;

(II) Working distances; and

(III) Shielding.

2. Radiation Detection Instrumentation including.

(i) Use of radiation survey instruments:

(I) Operation;

(II) Calibration; and

(III) Limitations.

(ii) Survey techniques.

(iii) Use of personnel monitoring equipment including but not limited to:

(I) Film badges;

(II) Thermoluminescent dosimeters (TLDs);

(III) Pocket dosimeters;

(IV) Alarm ratemeters; and

(V) Optically stimulated luminescent devices.

3. Radiographic Equipment to be Used including:

(i) Remote handling equipment.

(ii) Operation and control of radiographic exposure equipment, remote handling equipment, storage containers, and sealed sources, including pictures or models of source assemblies (pigtails).

(iii) Storage control, and disposal of sources of radiation; and transport containers and source changers.

(iv) Collimators.

4. Inspection and maintenance of equipment.

5. The Requirements of Pertinent Federal and State Regulations.

6. The Licensee's Written Operating and Emergency Procedures.

7. Case histories of accidents in radiography.

(h) Licensees will have one year from the effective date of this rule to comply with the additional training requirements specified in .04(16)(b)1. and .04(16)(c)1.

(17) **Operating and Emergency Procedures.**

(a) The operating and emergency procedures of the licensee shall include, as a minimum, instruction in the following:

1. Appropriate handling and use of sources of radiation so that no individual is likely to be exposed to radiation doses in excess of the limits established in Rule 391-3-17-.03, "Standards for Protection Against Radiation";

2. Methods and occasions for conducting radiation surveys;

3. Methods for posting and controlling access to radiographic areas;

4. Methods and occasions for locking and securing sealed sources;

5. Personnel monitoring and the use of personnel monitoring equipment;

6. Transporting equipment to field locations, including packing of radiographic exposure devices and storage containers in the vehicles, placarding of vehicles when required, and control of the equipment during transportation as described in Rule .06 of this Chapter;

7. The inspection, maintenance and operability checks of radiographic exposure devices, survey instruments, alarming ratemeters, transport containers, and storage containers.

8. Steps that must be taken immediately by radiography personnel in the event a pocket dosimeter is found to be off-scale or an alarming ratemeter alarms unexpectedly;

9. The procedure(s) for identifying and reporting defects and noncompliance, as required by .04(37);

10. The procedure for notifying proper persons in the event of an accident or incident;

11. Minimizing exposure of individuals in the event of an accident or incident, including a source disconnect, a transport accident, or loss of a source of radiation;

12. Source recovery procedure if licensee will perform source recoveries; and

13. Maintenance of records.

(b) The licensee shall maintain copies of current operating and emergency procedures in accordance with .04(32) and .04(36).

(18) **Supervision of Radiographer's Assistants.**

(a) Whenever a radiographer's assistant uses radiographic exposure devices, associated equipment, or a sealed source, or conducts radiation surveys required by (20)(b) and (c) of this Rule to determine that the sealed source has returned to the shielded position after an exposure, he shall be under the personal supervision of a radiographer. The personal supervision shall include:

1. The radiographer's physical presence at the site where the sealed sources are being used;

2. The ability of the radiographer to give immediate assistance if required; and

3. The radiographer's direct observation of the assistant's performance of the operations referred to in .04(18) of this Rule.

(19) **Personnel Monitoring Control.**

(a) The licensee shall not permit any individual to act as a radiographer or a radiographer's assistant unless, at all times during radiographic operations, each individual wears, on the trunk of the body, a combination of direct-reading dosimeter, an alarming ratemeter, and a personal monitoring device. At permanent radiographic installations where other appropriate alarming or warning devices are in routine use the use of an alarming ratemeter is not required.

1. Pocket dosimeters shall have a range from zero to 200 milliroentgens (2 millisieverts) and shall be recharged daily or at the start of each shift. Electronic personal dosimeters may only be used in place of ion-chamber pocket dosimeters.

2. Each personal monitoring device shall be assigned to and worn by only one individual.

3. Personal monitoring devices must be exchanged at periods not to exceed one month. After replacement each personal monitoring device must be returned to the supplier for processing within 14 calendar days of the end of the monitoring period, or as soon as practicable. If circumstances exist which make it impossible to return each personal monitoring device within 14 calendar days, such circumstances must be documented and available for review by the Division.

(b) Direct reading dosimeters such as pocket dosimeters or electronic personal dosimeters shall be read and exposures recorded at the beginning and end of each shift, and records must be maintained in accordance with .04(33).

(c) Pocket dosimeters or electronic personal dosimeters shall be checked at periods not to exceed one year for correct response to radiation, and records must be maintained in accordance with .04(33). Acceptable dosimeters shall read within plus or minus 20 percent of the true radiation exposure.

(d) If an individual's pocket dosimeter is found to be off-scale, or the electronic personal dosimeter reads greater than 200 mrem (2 millisieverts), the personal monitoring device must be sent for processing within 24 hours. In addition, the individual may not resume work associated with the use of sources of radiation until a determination of the individual's radiation exposure has been made. This determination must be made by the radiation safety officer or the radiation safety officer's designee. The results of this determination must be included in the records maintained in accordance with .04(33).

(e) If a personal monitoring device is lost or damaged, the worker shall cease work immediately until a replacement personal monitoring device is provided and the exposure is calculated for the time period from issuance to loss or damage of the personal monitoring device. The results of the calculated exposure and the time period for which the personal monitoring device was lost or damaged must be included in the records maintained in accordance with .04(33).

(f) Reports received from personal monitoring devices shall be retained in accordance with .04(33).

(g) Each alarm ratemeter must:

1. Be checked to ensure that the alarm functions properly prior to use at the start of each shift;

2. Emit an alarm signal at a preset dose-rate of 500 mr (5 mSv) per hour; with an accuracy of plus or minus 20 percent of the true radiation dose rate.

3. Require special means to change the preset alarm function; and

4. Be calibrated at periods not to exceed one year for correct response to radiation. The licensee shall maintain records of alarming ratemeter calibrations in accordance with .04(33).

(20) **Radiation Surveys.** The license shall:

(a) Conduct all surveys with a calibrated and operable radiation survey instrument that meets the requirements of .04(8);

(b) Conduct a survey of the radiographic exposure device and the guide tube after each exposure when approaching the device or the guide tube. The survey shall be to determine that the sealed source has been returned to its shielded position before exchanging films, repositioning the exposure head, or dismantling equipment.

(c) Conduct a survey of the radiographic exposure device whenever the source is exchanged and whenever a radiographic exposure device is placed in a storage area as defined in .04(3), to ensure that the sealed source is in its shielded position; and

(d) Maintain records in accordance with .04(34).

(21) **Surveillance.** During each radiographic operation, the radiographer shall ensure continuous direct visual surveillance of the operation to protect against unauthorized entry into a radiation area or a high radiation area, as defined in Rule .01 of this Chapter, except at permanent radiographic installations where all entryways are locked and the requirements of .04(12) are met.

(22) **Posting.** Notwithstanding any provisions of Rule 391-3-17-.03(12)(c) all areas in which industrial radiography is being performed shall be conspicuously posted as required by Rule 391-3-17-.03(12)(b)1. and 2.

(23) **Records for Industrial Radiography.** Each licensee shall maintain a copy of its license, documents incorporated by reference, and amendments to each of these items until superseded by new documents approved by the Division, or until the Director terminates the license.

(24) **Records of Receipt and Transfer of Sources of Radiation.**

(a) Each licensee shall maintain records showing the receipts and transfers of sealed sources, devices using DU for shielding, and radiation machines, and retain each record for three years after it is made.

(b) These records must include the date, the name of the individual making the record, radionuclide, number of curies (becquerels) or mass (for DU), and manufacturer, model, and serial number of each source of radiation and/or device, as appropriate.

(25) **Records of Radiation Survey Instruments.** Each licensee shall maintain records of the calibrations of its radiation survey instruments that are required under .04(8) and retain each record for three years after it is made.

(26) **Records of Leak Testing of Sealed Sources and Devices Containing DU.** Each licensee shall maintain records of leak test results for sealed sources and for devices containing DU. The results must be stated in units of microcuries (becquerels). The licensee shall retain each record for three years after it is made or until the source in storage is removed.

(27) **Records of Quarterly Inventory.**

(a) Each licensee shall maintain records of the quarterly inventory of sources of radiation, including devices containing depleted uranium as required by .04(10), and retain each record for three years.

(b) The record must include the date of the inventory, name of the individual conducting the inventory, radionuclide, number of curies (becquerels) or mass (for DU) in each device, location of sources of radiation and/or devices, and manufacturer, model, and serial number of each source of radiation and/or device, as appropriate.

(28) **Utilization Logs.**

(a) Each licensee shall maintain utilization logs showing for each source of radiation the following information:

1. A description, including the make, model, and serial number the radiographic exposure device, transport, or storage container in which the sealed source is located;

2. The identity and signature of the radiographer to whom assigned;

3. The location and dates of use, including the dates removed and returned to storage; and

4. For permanent radiographic installations, the dates each radiographic exposure device is used.

(b) The licensee shall retain the logs required by .04(28)(a) for three years.

(29) **Records of Inspection and Maintenance of Radiographic Exposure Devices, Transport and Storage Containers, Associated Equipment, Source Changers, and Survey Instruments.**

(a) Each licensee shall maintain records specified in .04(11) of equipment problems found in daily checks and quarterly inspections of radiation machines, radiographic exposure devices, transport and storage containers, associated equipment, source changers, and survey instruments; and retain each record for three years after it is made.

(b) The record must include the date of check or inspection, name of inspector, equipment involved, any problems found, and what repair and/or maintenance, if any, was performed.

(30) **Records of Alarm System and Entrance Control Checks at Permanent Radiographic Installations.** Each licensee shall maintain records of alarm system and entrance control device tests required by .04(12) and retain each record for three years after it is made.

(31) **Records of Training and Certification.** Each licensee shall maintain the following records for three years:

(a) Records of training of each radiographer and each radiographer's assistant. The record must include radiographer certification documents and verification of certification status, copies of written tests, dates of oral and practical examinations, the names of individuals conducting and receiving the oral and practical examinations, and a list of items tested and the results of the oral and practical examinations; and

(b) Records of annual refresher safety training and semi-annual inspections of job performance for each radiographer and each radiographer's assistant. The records must list the topics discussed during the refresher safety

training, the dates the annual refresher safety training was conducted, and names of the instructors and attendees. For inspections of job performance, the records must also include a list showing the items checked and any non-compliance observed by the radiation safety officer or designee.

(32) **Copies of Operating and Emergency Procedures.** Each licensee shall maintain a copy of current operating and emergency procedures until the Director terminates the license. Superseded material must be retained for three years after the change is made.

(33) **Records of Personnel Monitoring.** Each licensee shall maintain the following exposure records specified in .04(19):

(a) Direct reading dosimeter readings and yearly operability checks required by .04(19)(b) and .04(19)(c) for three years after the record is made;

(b) Records of alarming ratemeter calibrations for three years after the record is made;

(c) Reports received from the personal dosimeter processor until the Director terminates the license; and

(d) Records of estimates of exposures as a result of off-scale personal direct reading dosimeters, or lost or damaged personnel monitoring device, until the Director terminates the license.

(34) **Records of Radiation Surveys.** Each licensee shall maintain a record of each exposure device survey conducted before the device is placed in storage as specified in .04(20)(c). Each record must be maintained for three years after it is made.

(35) **Form of Records.** Each record required by these rules must be legible throughout the specified retention period. The record may be the original or a reproduced copy or a microform provided that the copy or microform is authenticated by authorized personnel and that the microform is capable of reproducing a clear copy throughout the required retention period. The record may also be stored in electronic media with the capability for producing legible, accurate, and complete records during the required retention period. Records, such as letters, drawings, and specifications, must include all pertinent information, such as stamps, initials, and signatures. The licensee shall maintain adequate safeguards against tampering with and loss of records.

(36) **Location of Documents and Records.**

(a) Each licensee shall maintain copies of records required by this Rule and other applicable Rules of this Chapter at the location specified in .04(4)(k).

(b) Each licensee shall also maintain current copies of the following documents and records sufficient to demonstrate compliance at each applicable field station and each temporary job site:

1. The license authorizing the use of sources of radiation;

2. Operating and emergency procedures as required by .04(32);

3. A copy of Rules .02, .03, .04 of this Chapter;

4. Survey records required by .04(34) and Rule .03(8) of this Chapter as applicable for the period of operation at the site;

5. Records of dosimeter readings as required by .04(33);

6. Valid radiographer's identification cards issued by a certifying entity for each radiographer working at the temporary job site or field location;

7. Evidence of the latest instrument calibration of the radiation survey instruments in use at the site as required by .04(25);

8. Utilization logs for each source of radiation dispatched from that location as required by .04(28);

9. Records of equipment problems identified in daily checks of equipment as required by .04(29)(a);

10. Records of alarm system and entrance control checks required by .04(30), if applicable;

11. Evidence of the latest calibrations of alarming ratemeters and operability checks of dosimeters as required by .04(33);

12. The shipping papers for the transportation of radioactive materials required by Rule .06 of this Chapter; and

13. When operating under reciprocity pursuant to Rule 391-3-17-.02(20) of this Chapter, a copy of the applicable Agreement State license or Nuclear Regulatory Commission license authorizing the use of sources of radiation.

(37) **Notifications.**

(a) In addition to the reporting requirements specified in 10 CFR 30.50 and in Rule 391-3-17-.03 of this Chapter, each licensee shall provide a written report to the Division within 30 days of the occurrence of any of the following incidents involving radiographic equipment:

1. Unintentional disconnection of the source assembly from the control cable.

2. Inability to retract the source assembly to its fully shielded position and secure it in this position.

3. Failure of any component, which is critical to safe operation of the device, to properly perform its intended function.

(b) The licensee shall include the following information in each report submitted under (37)(a)1. of this Rule and in each report of overexposure submitted under Rule 391-3-17-.03(15)(c) which involves failure of safety components of radiography equipment:

1. A description of the equipment problem;

2. Cause of each incident, if known;

3. Name of the manufacturer and model number of equipment involved in the incident;

4. Place, time, and date of the incident;

5. Actions taken to establish normal operations;

6. Corrective actions taken or planned to prevent recurrence; and

7. Qualifications of personnel involved in the incident.

(c) Any licensee conducting radiographic operations or storing sources of radiation at any location not listed on the license for a period in excess of 180 days in a calendar year, shall notify the Division prior to exceeding the 180 days.

(38) **Application and Examinations.**

(a) Application.

1. Candidates for certification must submit to the Division a fully completed "Georgia Certification of Radiographers Application Form" accompanied by two passport-sized photographs and shall submit through the Division all fees required by the testing agency.

2. A non-refundable fee to cover the cost of the examination, training documentation review, and issuance of certification shall be submitted with the application.

3. The application and the non-refundable fee shall be submitted to the Division, and the fees shall be submitted through the Division to the testing agency, on or before the dates specified by the Division.

4. An individual whose certification ID card has been suspended or revoked shall obtain written approval from the Division to apply to retake the examination.

(b) Examination. The examination shall be given for the purpose of determining the qualifications of applicants.

1. A written examination shall be held at times and places determined by the Division. The scope of the examination and the methods of procedure, including determination of the passing score, shall be prescribed by the Division. The examination will assess the applicant's knowledge to safely use sources of radiation and related equipment and the applicant's knowledge of this Chapter.

2. The examination will be administered by the Division to persons authorized by the Division.

3. A candidate failing an examination may apply for re-examination in accordance with (38)(a) of this Rule and will be re-examined. A candidate shall not retake the same version of the Division-administered examination.

4. The examination will be held in Atlanta and other locations designated by the Division. Dates, times, and locations of the examination will be furnished by the Division.

5. The examination will be in the English language.

6. To take the examination, an individual shall have a picture identification card, such as a driver's license, at the time of the examination.

7. Calculators will be permitted during the examination. However, calculators or computers with preprogrammed data or formulas, including exposure calculators, will not be permitted during the examination.

8. The examination will be a "closed-book" examination.

9. Any individual observed by a Division proctor to be compromising the integrity of the examination shall be required to surrender the examination, the answer sheet, and any work paper. Such individual will not be allowed to complete the examination, will forfeit the examination fee, and will leave the examination site to avoid disturbing other examinees. Such individuals may resubmit a new application and an additional examination fee and must wait at least 90 days before taking a new examination.

10. Examination material shall be returned to the Division at the end of the examination. No photographic or other copying of examination questions or materials shall be permitted. Disclosure by an individual of the contents of any examination prior to its administration is prohibited.

11. The names and scores of individuals taking the examination shall be a public record.

(39) **Certification Identification (ID) Card.**

(a) A certification (ID) card shall be issued to each person who successfully completes the requirements of .04(16)(a)1. and the examination prescribed in .04(38)(b).

1. Each person's identification card shall contain his/her photograph. The applicants will provide two passport-sized photographs at the time the examination is administered.

2. The certification ID card remains the property of the State of Georgia and may be revoked or suspended.

3. Any individual who wishes to replace their ID card shall submit to the Division a written request for a replacement certification card, stating the reason a replacement certification card is needed. A non-refundable fee shall be paid through the Division to the issuing agency for each replacement of a certification card. The prescribed fee shall be submitted with the written request for a replacement certification card. The individual shall maintain a copy of the request in their possession while performing industrial radiographic operations until a replacement certification card is received from the Division.

(b) Each certification ID card is valid for a period of five years, unless revoked in accordance with .04(39)(d). Each certification ID card expires at the end of the last day of the month and year stated on the certification ID card.

(c) Renewal of certification ID Card.

1. Applications for examination to renew a certification ID card shall be filed in accordance with .04(38)(a).

2. The examination for renewal of a certification ID card shall be administered in accordance with .04(38)(b).

3. A renewal identification card shall be issued in accordance with .04(39)(a).

(d) Revocation or suspension of a certification ID Card.

1. Any radiographer who violates these regulations, equivalent State or Nuclear Regulatory Commission regulations, or any applicable statutory requirements may be required to show cause at a formal hearing why their certification ID card should not be revoked or suspended in accordance with .04(39)(d)2.

2. When an order has been issued by the Director for an industrial radiographer to cease and desist from the use of sources of radiation or the Director revokes or suspends their certification ID card, the industrial radiographer shall surrender the certification ID card to the Division until the order is changed or the suspension expires.

(40) **Reciprocity.**

(a) All reciprocal recognition of licenses by the Director will be granted in accordance with Rule 391-3-17-.02(20) of this Chapter.

(b) Reciprocal recognition by the Director of an individual radiographer certification will be granted provided that:

1. The individual holds a valid certification in the appropriate category issued by a certifying entity, as defined in .04(3);

2. The requirements and procedures of the certifying entity issuing the certification affords the same or comparable certification standards as those afforded by .04(16)(a);

3. The applicant presents the certification to the Division prior to entry into the state; and

4. No escalated enforcement action is pending with the Nuclear Regulatory Commission or in any other state.

(c) Certified individuals who are granted reciprocity by the Director shall maintain the certification upon which the reciprocal recognition was granted, or prior to the expiration of such certification, shall meet the requirements of .04(16)(a).

(41) **Specific Requirements for Radiographic Personnel Performing Industrial Radiography.**

(a) The licensee shall supply the following at the job site:

1. At least one operable, calibrated survey instrument for each exposure device in use;

2. A current whole body personal dosimeter for each individual;

3. An operable, calibrated pocket dosimeter with a range of zero to 200 milliroentgens for each person performing radiographic operations;

4. An operable, calibrated alarm ratemeter with preset dose-rate of 500 mr (5 mSv) per hour for each person performing radiographic operations using a radiographic exposure device; and

5. The appropriate barrier ropes and signs.

(b) Each radiographer at a job site shall have on their person a valid certification ID card issued by a certifying entity.

(c) Industrial radiographic operations shall not be performed if any of the items in .04(41)(a) or .04(41)(b) are not available at the job site or are inoperable.

(d) Each licensee shall provide as a minimum two-person crews, i.e., two radiographers or a radiographer assistant who is under the personal supervision of a radiographer, when sources of radiation are used at temporary job sites.

(e) No individual other than a radiographer or a radiographer assistant who is under the personal supervision of a radiographer shall manipulate controls or operate equipment used in industrial radiographic operations.

(f) During an inspection by the Division, the Division inspector may terminate an operation if any of the items in .04(41)(a) are not available and operable or if the required number of radiographic personnel are not present. Operations shall not be resumed until such conditions are met.

(g) Special Requirements for Enclosed Radiography. Systems for enclosed radiography designed to allow admittance of individuals shall:

1. Comply with all applicable requirements of this Rule and Rule 391-3-17-.03(5)(i); and

2. Be evaluated at intervals not to exceed one year to assure compliance with the applicable requirements as specified in .04(41)(g)1. Records of these evaluations shall be maintained for inspection by the Division for a period of two years after the evaluation.

(h) Prohibitions. Industrial radiography performed with a sealed source which is not fastened to or contained in a radiographic exposure device (fishpole technique) is prohibited unless specifically authorized in a license issued by the Director.

APPENDIX A

I. **Requirements for an Independent Certifying Organization.**

An independent certifying organization shall:

1. Be an organization such as a society or association, whose members participate in, or have an interest in, the field of industrial radiography;

2. Make its membership available to the general public nationwide. Membership shall not be restricted because of race, color, religion, sex, age, national origin or disability;

3. Have a certification program open to non-members, as well as members;

4. Be an incorporated, nationally-recognized organization that is involved in setting national standards of practice within its fields of expertise;

5. Have an adequate staff, a viable system for financing its operations, and a policy and decision-making review board;

6. Have a set of written organizational by-laws and policies that provide adequate assurance of lack of conflict of interest and a system for monitoring and enforcing those by-laws and policies;

7. Have a committee, whose members can carry out their responsibilities impartially, to review and approve the certification guidelines and procedures, and to advise the organization's staff in implementing the certification program;

8. Have a committee, whose members can carry out their responsibilities impartially, to review complaints against certified individuals and to determine appropriate sanctions;

9. Have written procedures describing all aspects of its certification program, maintain records of the current status of each individual's certification and the administration of its certification program;

10. Have procedures to ensure that certified individuals are provided due process with respect to the administration of its certification program, including the process of becoming certified and any sanctions imposed against certified individuals;

11. Have procedures for proctoring examinations, including qualifications for proctors. These procedures must ensure that the individuals proctoring each examination are not employed by the same company or corporation (or a wholly-owned subsidiary of such company or corporation) as any of the examinees;

12. Exchange information about certified individuals with the Nuclear Regulatory Commission and other independent certifying organizations and/or Agreement States and allow periodic review of its certification program and related records; and

13. Provide a description to the Nuclear Regulatory Commission of its procedures for choosing examination sites and for providing an appropriate examination environment.

II. **Requirements for Certification Programs.**

All certification programs must:

1. Require applicants for certification to (a) receive training in the topics set forth in .04(16)(g) or equivalent State or Nuclear Regulatory Commission regulations, and (b) satisfactorily complete a written examination covering these topics;

2. Require applicants for certification to provide documentation that demonstrates that the applicant has:

(a) Received training in the topics set forth in .04(16)(g) or equivalent State or Nuclear Regulatory Commission regulations;

(b) Satisfactorily completed a minimum period of on-the-job training as specified in .04(16)(a); and

(c) Received verification by a State licensee or a Nuclear Regulatory Commission licensee that the applicant has demonstrated the capability of independently working as a radiographer.

3. Include procedures to ensure that all examination questions are protected from disclosure;

4. Include procedures for denying an application and revoking, suspending, and reinstating a certification;

5. Provide a certification period of not less than three years nor more than five years;

6. Include procedures for renewing certifications and, if the procedures allow renewals without examination, require evidence of recent full-time employment and annual refresher training; and

7. Provide a timely response to inquiries, by telephone or letter, from members of the public, about an individual's certification status.

III. **Requirements for Written Examinations.**

All examinations must be:

1. Designed to test an individual's knowledge and understanding of the topics listed in .04(16)(g) or equivalent State or Nuclear Regulatory Commission requirements;

2. Written in a multiple-choice format;

3. Have test items drawn from a question bank containing psychometrically valid questions based on the material in .04(16)(g).

[1] If a keyed lock, the key must be removed at all times.

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391-3-17-.05 Use of Radionuclides in the Healing Arts

(1) **Purpose and Scope.** This Rule, 391-3-17-.05, establishes requirements and provisions for the production, preparation, compounding and use of radionuclides in the healing arts and for issuance of licenses authorizing these activities. These requirements and provisions provide for the radiation safety of workers, the general public, patients, and human research subjects. The requirements and provisions of this Rule are in addition to, and not in substitution for, others in these regulations unless specifically exempted. All numbered and lettered references within this Rule refer to parts of this Rule, unless stated otherwise.

(2) **Definitions.**

(a) "Accredited institution," means a teaching facility for nuclear medicine technology or radiation therapy technology whose standards are accepted by the United States Department of Education.

(b) "Address of use," means the building or buildings that are identified on the license and where radioactive material may be produced, prepared, received, used, or stored.

(c) "Area of use," means a portion of an address of use that has been set aside for the purpose of receiving, using, or storing radioactive material.

(d) "Authorized medical physicist," means an individual who:

1. Meets the requirements in Rules .05(23)(a) and .05(27); or

2. Is identified as an authorized medical physicist on a license or equivalent permit issued by the Director, Nuclear Regulatory Commission or Agreement State; or

3. Is identified as an authorized medical physicist on a permit issued by the Director, Nuclear Regulatory Commission or Agreement State specific license of broad scope that is authorized to permit the use of radioactive material.

(e) "Authorized nuclear pharmacist," means a pharmacist who:

1. Meets the requirements in Rules .05(24)(a) and .05(27); or

2. Is identified as an authorized nuclear pharmacist on a license or equivalent permit issued by the Director, Nuclear Regulatory Commission or Agreement State; or

3. Is identified as an authorized nuclear pharmacist on a permit issued by the Director, Nuclear Regulatory Commission or Agreement State specific license of broad scope that is authorized to permit the use of radioactive material.

(f) "Authorized user," means a physician, dentist, or podiatrist who:

1. Meets the requirements in Rule .05(27) and .05(43)(a), .05(47)(a), .05(52)(a), .05(53)(a), .05(54)(a), .05(63)(a), .05(66)(a), or .05(84)(a); or

2. Is identified as an authorized user on a license or equivalent permit issued by the Director, Nuclear Regulatory Commission or Agreement State; or

3. Is identified as an authorized user on a permit issued by the Director, Nuclear Regulatory Commission or Agreement State specific license of broad scope that is authorized to permit the use of radioactive material.

(g) "Brachytherapy," means a method of radiation therapy in which plated, embedded, activated, or sealed sources are utilized to deliver a radiation dose at a distance of up to a few centimeters, by surface, intracavitary, intraluminal or interstitial application.

(h) "Brachytherapy source," means a radioactive source or a manufacturer-assembled source train or a combination of these sources that is designed to deliver a therapeutic dose within a distance of a few centimeters.

(i) "Client's address," means the address of use or a temporary jobsite for the purpose of providing mobile medical service in accordance with Rule .05(38).

(j) "Dedicated check source," means a radioactive source that is used to assure the consistent response of a radiation detection or measurement device over several months or years.

(k) "Dentist," means an individual licensed to engage in the practice dentistry under the Authority of O.C.G.A. 43-11-40.

(l) "Diagnostic clinical procedures manual," means a collection of written procedures that describes each method (and other instructions and precautions) by which the licensee performs diagnostic clinical procedures; where each diagnostic clinical procedure has been approved by the authorized user and includes the radiopharmaceutical, dosage, and route of administration, or in the case of sealed sources for diagnosis, the procedure.

(m) "High dose-rate remote afterloader," (HDR) means a device that remotely delivers a dose rate in excess of 12 gray (1200 rad) per hour at the treatment site.

(n) "Low dose-rate remote afterloader," (LDR) means a device that remotely delivers a dose rate of less than or equal to 2 gray (200 rad) per hour at the treatment site.

(o) "Management," means the chief executive officer or other individual having the authority to manage, direct, or administer the licensee's activities, or those persons' delegate or delegates.

(p) "Manual brachytherapy," means a type of therapy in which brachytherapy sources are manually applied or inserted.

(q) "Medical institution," means an organization in which several medical disciplines are practiced.

(r) "Medical use," means the intentional internal or external administration of radioactive material or the radiation from radioactive material to patients or human research subjects under the supervision of an authorized user.

(s) "Medium dose-rate remote afterloader," (MDR) means a device that remotely delivers a dose rate of greater than 2 gray (200 rad), but less than, or equal to, 12 gray (1200 rad) per hour at the treatment site.

(t) "Misadministration," means an event that meets the criteria in Rule .05(115)(a).

(u) "Mobile medical service," means the transportation of radioactive material or its medical use at the client's address.

(v) "Nuclear medicine technologist," means an individual who meets the requirements of Rule .05(25)(a) and, is under the supervision of an authorized user, to prepare or administers radioactive drugs to patients or human research subjects, or perform *in vivo* or *in vitro* measurements for medical purposes.

(w) "Nuclear medicine technology," means the science and art of in vivo and in vitro detection and measurement of radioactivity and the administration of radioactive drugs to patients or human research subjects for diagnostic and therapeutic purposes.

(x) "Output," means the exposure rate, dose rate, or a quantity related in a known manner to these rates from a brachytherapy source, or a teletherapy, remote afterloader, or gamma stereotactic radiosurgery unit for a specified set of exposure conditions.

(y) "Patient intervention," means actions by the patient or human research subject, whether intentional or unintentional, such as dislodging or removing treatment devices or prematurely terminating the administration.

(z) "Pharmacist," means any individual who is licensed to practice Pharmacy in this State by the Georgia State Board of Pharmacy.

(aa) "Physician," means any person who is licensed to engage in the practice of medicine under the Authority of O.C.G.A. 43-34-20 or the limited practice of medicine under O.C.G.A. 43-35-1.

(bb) "Podiatrist," means an individual licensed by the appropriate authority to practice podiatry in the state of Georgia.

(cc) "Positron Emission Tomography (PET) radionuclide production facility" is defined as a facility operating a cyclotron or accelerator for the purpose of producing PET radionuclides.

(dd) "Preceptor," means an individual who provides, directs or verifies training and experience required for an individual to become an authorized user, an authorized medical physicist, an authorized nuclear pharmacist, an Associate Radiation Safety Officer or a Radiation Safety Officer.

(ee) "Prescribed dosage," means the specified activity or range of activity of radioactive drug as documented:

1. In a written directive; or

2. In accordance with the directions of the authorized user for procedures performed pursuant to Rule .05(41), (44) and (48).

(ff) "Prescribed dose," means:

1. For gamma stereotactic radiosurgery, the total dose as documented in the written directive;

2. For teletherapy, the total dose and dose per fraction as documented in the written directive;

3. For brachytherapy, either the total source strength and exposure time or the total dose, as documented in the written directive; or

4. For remote brachytherapy afterloaders, the total dose and dose per fraction as documented in the written directive.

(gg) "Pulsed dose-rate remote afterloader," (PDR) means a special type of remote afterloading device that uses a single source capable of delivering dose rates in the "high dose-rate" range, but:

1. Is approximately one-tenth of the activity of typical high dose-rate remote afterloader sources; and

2. Is used to simulate the radiobiology of a low dose rate treatment by inserting the source for a given fraction of each hour.

(hh) "Radiation Safety Officer," means an individual who:

1. Meets the requirements in Rule .05(22)(a) or .05(22)(c)1. And .05(27); or

2. Is identified as a Radiation Safety Officer on a Nuclear Regulatory Commission or Agreement State license or other equivalent permit or license recognized by the Division for similar types and uses of radioactive material.

(ii) "Radiation therapist," means an individual who meets the requirements of Rule .05(25)(b) and is under the supervision of an authorized user to perform procedures and apply radiation emitted from sealed radioactive sources to human beings for therapeutic purposes.

(jj) "Radiation therapy technology," means the science and art of applying radiation emitted from sealed radioactive sources to patients or human research subjects for therapeutic purposes.

(kk) "Radioactive drug," means any chemical compound containing radioactive material that may be used on or administered to patients or human research subjects as an aid in the diagnosis, treatment, or prevention of disease or other abnormal condition.

(ll) "Sealed source," means any radioactive material that is encased in a capsule designed to prevent leakage or escape of the radioactive material.

(mm) "Sealed Source and Device Registry," means the national registry that contains the registration certificates maintained by the Nuclear Regulatory Commission, that summarize the radiation safety information for the sealed sources and devices and describe the licensing and use conditions approved for the product.

(nn) "Stereotactic radiosurgery," means the use of external radiation in conjunction with a stereotactic guidance device to very precisely deliver a dose to a treatment site.

(oo) "Structured educational program," means an educational program designed to impart particular knowledge and practical education through interrelated studies and supervised training.

(pp) "Teletherapy," as used in this Rule, means a method of radiation therapy in which collimated gamma rays are delivered at a distance from the patient or human research subject.

(qq) "Temporary jobsite," as used in this Rule, means a location where mobile medical services are conducted other than the location(s) of use authorized on the license.

(rr) "Therapeutic dosage," means a dosage of unsealed radioactive material that is intended to deliver a radiation dose to a patient or human research subject for palliative or curative treatment.

(ss) "Therapeutic dose," means a radiation dose delivered from a sealed source containing radioactive material to a patient or human research subject for palliative or curative treatment.

(tt) "Treatment site," means the anatomical description of the tissue intended to receive a radiation dose, as described in a written directive.

(uu) "Type of use," means use of radioactive material as specified under Rule .05(41), (44), (48), (55), (65), (67) or (85).

(vv) "Unit dosage," means a dosage that:

1. Is obtained or prepared in accordance with the regulations for uses described in Rule .05(41), (44), (48); and

2. Is to be administered as a single dosage to a patient or human research subject without any further manipulation of the dosage after it is initially prepared.

(ww) "Written directive," means an authorized user's written order for the administration of radioactive material or radiation from radioactive material to a specific patient or human research subject, as specified in Rule .05(19).

(xx) "Associate Radiation Safety Officer," means an individual who:

1. Meets the requirements in 391-3-17-.05(22) and .05(27); and

2. Is currently identified as an Associate Radiation Safety Officer for the types of use of byproduct material for which the individual has been assigned duties and tasks by the Radiation Safety Officer on:

(i) A specific medical use license issued by the Commission or an Agreement State; or

(ii) A medical use permit issued by a Commission master material licensee.

(yy) "Ophthalmic physicist," means an individual who:

1. Meets the requirements in 391-3-17-.05(27) and 391-3-17-.05(64)(c)2.; and

2. Is identified as an ophthalmic physicist on a:

(i) Specific medical use license issued by the Commission or an Agreement State;

(ii) Permit issued by a Commission or Agreement State broad scope medical use licensee;

(iii) Medical use permit issued by a Commission master material licensee; or

(iv) Permit issued by a Commission master material licensee broad scope medical use permittee.

(3) **Maintenance of Records.** Each record required by Rule .05 must be legible throughout the retention period specified by each Division Rule. The record may be the original, a reproduced copy, or a microform provided that the copy or microform is authenticated by authorized personnel and the microform is capable of producing a clear copy throughout the required retention period. The record may also be stored in electronic media with the capability for producing legible, accurate, and complete records during the required retention period. Records such as letters, drawings, and specifications, must include all pertinent information such as stamps, initials, and signatures. The licensee shall maintain adequate safeguards against tampering with and loss of records.

(4) **Provisions for Research Involving Human Subjects.** A licensee may conduct research involving human subjects using radioactive material provided:

(a) That the research is conducted, funded, supported, or regulated by a Federal agency that has implemented the Federal Policy for the Protection of Human Subjects. Otherwise, a licensee shall apply for and receive approval of a specific amendment to its Division license before conducting such research. Both types of licensees shall, at a minimum, obtain informed consent from the human subjects and obtain prior review and approval of the research activities by an "Institutional Review Board" in accordance with the meaning of these terms as defined and described in the Federal Policy for the Protection of Human Subjects;

(b) The research involving human subjects authorized in .05(4)(a) shall be conducted using radioactive material authorized for medical use in the license; and

(c) Nothing in Rule .05(4) relieves licensees from complying with the other requirements in Rule .05.

(5) **U.S. Food and Drug Administration, Federal, and State Requirements.** Nothing in Rule .05 relieves the licensee from complying with applicable U.S. Food and Drug Administration, other Federal, and State requirements governing radioactive drugs or devices.

(6) **Implementation.**

(a) A licensee shall implement the provisions in Rule .05 on July 1, 2003.

(b) When a requirement in Rule .05 differs from the requirement in an existing license condition, the requirement in Rule .05 shall govern.

(c) Any existing license condition that is not affected by a requirement in Rule .05 remains in effect until there is a license amendment or license renewal.

(d) If a license condition exempted a licensee from a provision of Rule .05 on July 1, 2003, it will continue to exempt a licensee from the corresponding provision in Rule .05.

(e) If a license condition cites provisions in Rule .05 that will be deleted on July 1, 2003, then the license condition remains in effect until there is a license amendment or license renewal that modifies or removes this condition.

(f) Licensees shall continue to comply with any license condition that requires it to implement procedures required by Rule .05(70), (76), (77) and (78) until there is a license amendment or renewal that modifies the license condition.

(7) **License Required.**

(a) A person may manufacture, produce, prepare, acquire, receive, possess, use, or transfer radioactive material for medical use only in accordance with a specific license issued by the Director, the Nuclear Regulatory Commission or an Agreement State, or as allowed in Rule .05(7)(b) or (7)(c).

(b) An individual may receive, possess, use, or transfer radioactive material in accordance with the regulations in Rule .05 under the supervision of an authorized user as provided in Rule .05(18), unless prohibited by license condition.

(c) An individual may prepare unsealed radioactive material for medical use in accordance with the regulations in Rule .05 under the supervision of an authorized nuclear pharmacist or authorized user as provided in Rule .05(18), unless prohibited by license condition.

(8) **Application for License, Amendment, or Renewal.**

(a) An application must be signed by the applicant's or licensee's management.

(b) An application for a license for medical use of radioactive material as described in Rule .05(41), (44), (48), (55), (65), (67) or (85) must be made by:

1. Filing an original Application for Radioactive Materials License, and

2. Submitting procedures required by sections Rule .05(70), (76), (77), and (78), as applicable.

(c) A request for a license amendment or renewal must be made by:

1. Submitting an original in letter format.

2. Submitting procedures required by sections Rule .05(70), (76), (77) and (78), as applicable.

(d) In addition to the requirements in (8)(b) and (8)(c), an application for a license or amendment for medical use of radioactive material as described in (85) of Rule .05 must also include information regarding any radiation safety aspects of the medical use of the material that is not addressed in Rule .05(1) through Rule .05(40), as well as any specific information on:

1. Radiation safety precautions and instructions;

2. Training and experience of proposed users;

3. Methodology for measurement of dosages or doses to be administered to patients or human research subjects; and

4. Calibration, maintenance, and repair of instruments and equipment necessary for radiation safety.

(e) The applicant or licensee shall also provide any other information requested by the Division in its review of the application.

(f) An applicant that satisfies the requirements specified in Rule .02(10)(b) may apply for a Type A specific license of broad scope.

(9) **Mobile Medical Service Administrative Requirements.**

(a) The Director shall license mobile medical services or clients of such services. The mobile medical service shall be licensed if the service receives, uses or possesses radioactive material. The client of the mobile medical service shall be licensed if the client receives or possesses radioactive material to be used by a mobile medical service.

(b) Mobile medical service licensees shall obtain a letter signed by the management of each location where services are rendered that authorizes use of radioactive material at the clinic's address of use. This letter shall clearly

delineate the authority and responsibility of both the client and the mobile medical service. If the client is licensed, the letter shall document procedures for notification, receipt, storage and documentation of transfer of radioactive material delivered to the client's address for use by the mobile medical service.

(c) A mobile medical service shall not have radioactive material delivered directly from the manufacturer or the distributor to the client unless the client has a license allowing possession of the radioactive material. Radioactive material delivered to the client shall be received and handled in conformance with the client's license.

(d) A mobile medical service shall inform the client's management who is on site at each client's address of use at the time that radioactive material is being administered.

(e) A licensee providing mobile medical services shall retain the letter required in (9)(b) in accordance with Rule .05(97).

(f) A mobile medical service licensee shall maintain on each mobile unit:

1. The current operating and emergency procedures;

2. A copy of the license;

3. Copies of the letter required by .05(9)(b);

4. Current calibration records for each survey instrument and diagnostic equipment or dose delivery device in use; and

5. Survey records covering uses associated with the mobile unit during, at a minimum, the preceding 30 calendar days.

(g) A mobile medical service licensee shall maintain records required by Rules .03 and .05 of this Chapter at a location within the Division's jurisdiction that is:

1. A single address of use:

(i) Identified as the records retention location; and

(ii) Staffed at all reasonable hours by individual(s) authorized to provide the Division with access for purposes of inspection; or

2. When no address of use is identified on the license for records retention, the mobile unit:

(i) Identified in the license; and

(ii) Whose current client's address schedule and location schedule is reported to the Division.

(10) **License Amendments.** A licensee shall apply for and must receive a license amendment:

(a) Before it receives, prepares or uses radioactive material for a type of use that is permitted under Rule .05, but that is not authorized on the licensee's current license issued pursuant to Rule .05;

(b) Before it permits anyone to work as an authorized user, authorized nuclear pharmacist, or authorized medical physicist under the license, except an individual who is:

1. For an authorized user, an individual who meets the requirements in Rule .05(27) and (43)(a), Rule .05(47)(a), (52)(a), (53)(a), (54)(a), (63)(a), (64)(a), (66)(a), or (84)(a) or;

2. For an authorized nuclear pharmacist, an individual who meets the requirements in Rule .05(24)(a) and (27);

3. For an authorized medical physicist, an individual who meets the requirements in Rule .05(23)(a) and (27);

4. Identified as an authorized user, an authorized nuclear pharmacist, or authorized medical physicist on a Nuclear Regulatory Commission or Agreement State license or other equivalent permit or license recognized by the Division that authorizes the use of radioactive material in medical use or in the practice of nuclear pharmacy, respectively; or

5. Identified as an authorized user, an authorized nuclear pharmacist, or authorized medical physicist on a permit issued by a Nuclear Regulatory Commission or Agreement State specific licensee of broad scope that is authorized to permit the use of radioactive material in medical use or in the practice of nuclear pharmacy, respectively.

(c) Before it changes Radiation Safety Officers, except as provided in (15)(c);

(d) Before it receives radioactive material in excess of the amount, or in a different physical or chemical form than is authorized on the license;

(e) Before it adds to or changes the areas of use identified in the application or on the license, except as specified in (11)(b)4.;

(f) Before it changes the address(es) of use identified in the application or on the license;

(g) Before it changes statements, representations, and procedures which are incorporated into the license; and

(h) Before it releases licensed facilities for unrestricted use.

(11) **Notifications.**

(a) A licensee shall provide to the Division a copy of the board certification, the Nuclear Regulatory Commission or Agreement State license, or the permit issued by a licensee of broad scope for each individual no later than 30 days after the date that the licensee permits the individual to work as an authorized user, an authorized nuclear pharmacist or an authorized medical physicist, pursuant to (10)(b).

(b) A licensee shall notify the Division by letter no later than 30 days after:

1. A Radiation Safety Officer permanently discontinues performance of duties under the license or has a name change;

2. The licensee's mailing address changes;

3. The licensee's name changes, but the name change does not constitute a transfer of control of the license as described in Rule .02(13)(b) of these regulations; or

4. The licensee has added to or changed the areas where radioactive material is used in accordance with Rule .05(41) and (44).

(12) **Exemptions Regarding Type A Specific Licenses of Broad Scope.** A licensee possessing a Type A specific license of broad scope for medical use is exempt from:

(a) The provisions of (8)(d) of these regulations, regarding the need to file an amendment to the license for medical uses of radioactive material, as described in .05(85);

(b) The provisions of (10)(b) regarding the need to file an amendment before permitting anyone to work as an authorized user, an authorized nuclear pharmacist or an authorized medical physicist under the license;

(c) The provisions of (10)(e) regarding additions to or changes in the areas of use at the addresses specified in the license;

(d) The provisions of .05(11)(a) regarding notification to the Division for new authorized users, new authorized nuclear pharmacists and new authorized medical physicists; and

(e) The provisions of .05(21)(a) regarding suppliers for sealed sources.

(13) **License Issuance.**

(a) The Director shall issue a license for the medical use of radioactive material if:

1. The applicant has filed Application for Radioactive Materials License in accordance with the instructions in .05(8);

2. The applicant has paid any applicable fee;

3. The applicant meets the requirements of Rule .02 of this Chapter; and

4. The Director finds the applicant equipped and committed to observe the safety standards established by the Division in these Rules for the protection of the public health and safety.

(b) The Director shall issue a license for mobile services if the applicant:

1. Meets the requirements in .05(13)(a); and

2. Assures that individuals to whom radioactive drugs or radiation from implants containing radioactive material will be administered, may be released following treatment in accordance with .05(37).

(14) **Specific Exemptions.** The Director may, upon application of any interested person or upon its own initiative, grant such exemptions from the regulations in Rule .05 as it determines are authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest.

General Administrative Requirements.

(15) **Authority and Responsibilities for the Radiation Protection Program.**

(a) In addition to the radiation protection program requirements of Rule .03(4), a licensee's management must approve in writing:

1. Requests for license application, renewal, or amendments before submittal to the Division;

2. Any individual before allowing that individual to work as an authorized user, authorized nuclear pharmacist or authorized medical physicist, and

3. Radiation protection program changes that do not require a license amendment and are permitted under .05(16);

(b) A licensee's management shall appoint a Radiation Safety Officer, who agrees in writing to be responsible for implementing the radiation protection program. The licensee, through the Radiation Safety Officer, shall ensure that radiation safety activities are being performed in accordance with licensee-approved procedures and regulatory requirements. A licensee's management may appoint, in writing, one or more Associate Radiation Safety Officers to support the Radiation Safety Officer. The Radiation Safety Officer, with written agreement of the licensee's management, must assign the specific duties and tasks to each Associate Radiation Safety Officer. These duties and tasks are restricted to the types of use for which the Associate Radiation Safety Officer is listed on a license. The Radiation Safety Officer may delegate duties and tasks to the Associate Radiation Safety Officer but shall not delegate the authority or responsibilities for implementing the radiation protection program.

(c) For up to sixty days each year, a licensee may permit an authorized user or an individual qualified to be a radiation safety officer to function as a temporary Radiation Safety Officer and to perform the functions of a Radiation Safety Officer, as provided in .05(15)(e), provided the licensee takes the actions required in .05(15)(b),(d),(e) and (h) A licensee may simultaneously appoint more than one temporary RSO, if needed, to ensure that the licensee has a temporary RSO that satisfies the requirements to be an RSO for each of the different uses of radioactive material permitted by the license.

(d) A licensee shall establish in writing the authority, duties, and responsibilities of the Radiation Safety Officer.

(e) A licensee shall provide the Radiation Safety Officer sufficient authority, organizational freedom, time, resources, and management prerogative, to:

1. Identify radiation safety problems;

2. Initiate, recommend, or provide corrective actions;

3. Stop unsafe operations; and,

4. Verify implementation of corrective actions.

(f) Licensees that are authorized for two or more different types of radioactive material use under Rule .05(48), (55), (67), and (85), or two or more types of units under Rule .05(67) shall establish a Radiation Safety Committee to oversee all uses of radioactive material permitted by the license. The Committee must include an authorized user of each type of use permitted by the license, the Radiation Safety Officer, a representative of the nursing service, and a representative of management who is neither an authorized user nor a Radiation Safety Officer, and may include other members as the licensee deems appropriate.

(g) A licensee's Radiation Safety Committee shall meet as necessary, but at a minimum shall meet at intervals not to exceed six months. The licensee shall maintain minutes of each required meeting in accordance with Rule .05(86)(c).

(h) A licensee shall retain a record of actions taken pursuant to Rule .05(15)(a), (15)(b) and (15)(d) in accordance with Rule .05(86)(a) and (b).

(16) **Radiation Protection Program Changes.**

(a) A licensee may revise its radiation protection program without Division approval if:

1. The revision does not require an amendment under Rule .05(10);

2. The revision is in compliance with the regulations and the license;

3. The revision has been reviewed and approved by the Radiation Safety Officer, licensee management and licensee's Radiation Safety Committee (if applicable); and

4. The affected individuals are instructed on the revised program before the changes are implemented.

(b) A licensee shall retain a record of each change in accordance with Rule .05(87).

(17) **Duties of Authorized User and Authorized Medical Physicist.**

(a) A licensee shall assure that only authorized users for the type of radioactive material use:

1. Prescribe the radiopharmaceutical dosage and/or dose to be administered through the issuance of a written directive or reference to the diagnostic clinical procedures manual;

2. Direct, as specified in Rule .05(18) and (19), or in license conditions, the administration of radioactive material for medical use to patients or human research subjects; and

3. Prepare and administer, or supervise the preparation and administration of radioactive material for medical use, in accordance with Rule .05(7)(b) and (7)(c) and (18).

(b) A licensee shall assure that only authorized medical physicists perform, as applicable:

1. Full calibration measurements as described in Rule .05(73), (74), and (75);

2. Periodic spot checks as described in Rule .05(76), (77), and (78); and

3. Radiation surveys as described in Rule .05(80).

(18) **Supervision.**

(a) A licensee that permits the receipt, possession, use, or transfer of radioactive material by an individual under the supervision of an authorized user or as allowed by Rule .05(7)(b) shall:

1. In addition to the requirements in Rule .07(3) of this Chapter, instruct the supervised individual in the licensee's written radiation protection procedures, written directive procedures, regulations of Rule .05, and license conditions with respect to the use of radioactive material; and

2. Require the supervised individual to follow the instructions of the supervising authorized user for medical uses of radioactive material, written radiation protection procedures, written directive procedures, regulations of Rule .05, and license conditions with respect to the medical use of radioactive material.

(b) A licensee that permits the preparation of radioactive material for medical use by an individual under the supervision of an authorized nuclear pharmacist or physician who is an authorized user, as allowed by Rule .05(7)(c), shall:

1. Instruct the supervised individual in the preparation of radioactive material for medical use, as appropriate to that individual's involvement with radioactive material; and

2. Require the supervised individual to follow the instructions of the supervising authorized user or authorized nuclear pharmacist regarding the preparation of radioactive material for medical use, the written radiation protection procedures, the regulations of Rule .05, and license conditions.

(c) Unless physical presence is required in other sections of Rule .05, a licensee who permits supervised activities under Rule .05(18)(a) and (18)(b) shall require an authorized user to be immediately available to communicate with the supervised individual, and when a written directive is required, be able to be physically present within one hour of notification; and

(d) A licensee that permits supervised activities under Rule .05(18)(a) and (18)(b) is responsible for the acts and omissions of the supervised individual.

(19) **Written Directives.**

(a) A written directive must be dated and signed by an authorized user prior to administration of I-131 sodium iodide greater than 1.11 megabecquerel (30 µCi), any therapeutic dosage of radioactive material or any therapeutic dose of radiation from radioactive material.

1. If, because of the emergent nature of the patient's condition, a delay in order to provide a written directive would jeopardize the patient's health, an oral directive will be acceptable, provided that the information contained in the oral directive is documented as soon as possible in writing in the patient's record and a written directive is prepared within 48 hours of the oral directive.

2. A written revision to an existing written directive may be made provided that the revision is dated and signed by an authorized user prior to the administration of the dosage of radioactive drug containing radioactive material, the brachytherapy dose, the gamma stereotactic radiosurgery dose, the teletherapy dose, or the next fractional dose.

3. If, because of the patient's condition, a delay in order to provide a written revision to an existing written directive would jeopardize the patient's health, an oral revision to an existing written directive will be acceptable, provided that the oral revision is documented as soon as possible in the patient's record and a revised written directive is signed by the authorized user within 48 hours of the oral revision.

(b) The written directive must contain the patient or human research subject's name and the following:

1. For an administration of a dosage of radioactive drug containing radioactive material, the radioactive drug containing radioactive material, dosage, and route of administration;

2. For gamma stereotactic radiosurgery, the total dose, treatment site, and number of target coordinate settings per treatment for each anatomically distinct treatment site;

3. For teletherapy, the total dose, dose per fraction, number of fractions, and treatment site;

4. For high dose rate remote afterloading brachytherapy, the radionuclide, treatment site, dose per fraction, number of fractions, and total dose;

5. For all other brachytherapy including LDR, MDR, and PDR:

(i) Prior to implantation: treatment site, the radionuclide, and dose; and

(ii) After implantation but prior to completion of the procedure: the radioisotope, treatment site, number of sources, and total source strength and exposure time (or, the total dose), and date; or

6. For permanent implant brachytherapy:

(i) Before implantation: The treatment site, the radionuclide, and the total source strength; and

(ii) After implantation but before the patient leaves the post-treatment recovery area: The treatment site, the number of sources implanted, the total source strength implanted, and the date.

(c) The licensee shall retain the written directive in accordance with Rule .05(88).

(20) **Procedures for Administrations Requiring a Written Directive.**

(a) For any administration requiring a written directive, the licensee shall develop, implement, and maintain written procedures to provide high confidence that:

1. The patient's or human research subject's identity is verified before each administration; and

2. Each administration is in accordance with the written directive.

(b) The procedures required by Rule .05(20)(a) must, at a minimum, address the following items that are applicable for the licensee's use of radioactive material:

1. Verifying the identity of the patient or human research subject;

2. Verifying that the specific details of the administration are in accordance with the treatment plan, if applicable, and the written directive;

3. Checking both manual and computer-generated dose calculations;

4. Verifying that any computer-generated dose calculations are correctly transferred into the consoles of therapeutic medical units authorized by Rule .05(67);

5. Determining if a medical event, as defined in Rule .05(115), has occurred; and

6. Determining, for permanent implant brachytherapy, within 60 calendar days from the date the implant was performed, the total source strength administered outside of the treatment site compared to the total source strength documented in the post-implantation portion of the written directive, unless a written justification of patient unavailability is documented.

(c) A licensee shall retain a copy of the procedures required under subparagraph (a) in accordance with 391-3-17-.05(20) and (88).

(21) **Suppliers for Sealed Sources or Devices for Medical Use.** For medical use, a licensee may only use:

(a) Sealed sources or devices initially manufactured, labeled, packaged, and distributed in accordance with a license issued pursuant to Rule .02 of this Chapter or the equivalent requirements of the Nuclear Regulatory Commission or an Agreement State; or

(b) Sealed sources or devices non-commercially transferred from Rule .05 licensee or a Nuclear Regulatory Commission or an Agreement State medical use licensee.

(22) **Training for Radiation Safety Officer.** Except as provided in Rule .05(26), the licensee shall require an individual fulfilling the responsibilities of the Radiation Safety Officer (RSO) or an individual assigned duties and tasks as an Associate Radiation Safety Officer as provided in Rule .05(15) to be an individual who:

(a) Is certified by a specialty board whose certification process includes all of the requirements in Rule. 05(22)(d), and whose certification has been recognized by the Nuclear Regulatory Commission or an Agreement State. (The names of board certifications that have been recognized by the Nuclear Regulatory Commission or an Agreement State will be posted on the NRC's Web page.) To have its certification process recognized, a specialty board shall require all candidates for certification to:

1. (i) Hold a bachelor's or graduate degree from an accredited college or university in physical science or engineering or biological science with a minimum of 20 college credits in physical science;

(ii) Have 5 or more years of professional experience in health physics (graduate training may be substituted for no more than 2 years of the required experience) including at least 3 years in applied health physics; and

(iii) Pass an examination administered by diplomates of the specialty board, which evaluates knowledge and competence in radiation physics and instrumentation, radiation protection, mathematics pertaining to the use and measurement of radioactivity, radiation biology, and radiation dosimetry; or

2. (i) Hold a master's or doctor's degree in physics, medical physics, other physical science, engineering, or applied mathematics from an accredited college or university;

(ii) Have 2 years of full-time practical training and/or supervised experience in medical physics:

(I) Under the supervision of a medical physicist who is certified in medical physics by a specialty board recognized by the Nuclear Regulatory Commission or an Agreement State; or

(II) In clinical nuclear medicine facilities providing diagnostic and/or therapeutic services under the direction of physicians who meet the requirements for authorized users in Rule .05(26), .05(47) or .05(52); and

(iii) Pass an examination, administered by diplomates of the specialty board, that assesses knowledge and competence in clinical diagnostic radiological or nuclear medicine physics and in radiation safety; or

(b) 1. Has completed a structured educational program consisting of both:

(i) 200 hours of classroom and laboratory training in the following areas:

(I) Radiation physics and instrumentation;

(II) Radiation protection;

(III) Mathematics pertaining to the use and measurement of radioactivity;

(IV) Radiation biology; and

(V) Radiation dosimetry; and

(ii) One year of full-time radiation safety experience under the supervision of the individual identified as the RSO on a Nuclear Regulatory Commission, Agreement State license or permit issued by a Commission master material licensee that authorizes similar type(s) of use(s) of radioactive material. An Associate Radiation Safety Officer may provide supervision for those areas for which the Associate Radiation Safety Officer is authorized on a Nuclear Regulatory Commission, Agreement State license or permit issued by a Commission master material licensee that authorizes similar type(s) of use(s) of radioactive byproduct material. The full-time radiation safety experience must involve the following;

(I) Shipping, receiving, and performing related radiation surveys;

(II) Using and performing checks for proper operation of dose calibrators, survey meters, and instruments used to measure radionuclides;

(III) Securing and controlling radioactive material;

(IV) Using administrative controls to avoid mistakes in the administration of radioactive material;

(V) Using procedures to prevent or minimize radioactive contamination and using proper decontamination procedures;

(VI) Using emergency procedures to control radioactive material; and

(VII) Disposing of radioactive material; or

2. This individual must obtain a written attestation, signed by a preceptor Radiation Safety Officer or Associate Radiation Safety Officer who has experience with the radiation safety aspects of similar types of use of byproduct material for which the individual is seeking approval as a Radiation Safety Officer or an Associate Radiation Safety Officer. The written attestation must state that the individual has satisfactorily completed the requirements in subparagraphs (b)1. and (d) of this section, and is able to independently fulfill the radiation safety-related duties as a Radiation Safety Officer or as an Associate Radiation Safety Officer for a medical use license; or

(c) 1. Is a medical physicist who has been certified by a specialty board whose certification process has been recognized by the Nuclear Regulatory Commission or an Agreement State under Rule .05(23)(a) and has experience in radiation safety for similar types of use of byproduct material for which the licensee is seeking the approval of the individual as Radiation Safety Officer or Associate Radiation Safety Officer and who meets the requirements in .05(22)(d); or

2. Is an authorized user, authorized medical physicist, or authorized nuclear pharmacist identified on a Commission or an Agreement State license, a permit issued by a Commission master material license, a permit issued by a

Commission or an Agreement State license broad scope permittee, has experience with the radiation safety aspects of similar types of use of radioactive byproduct material for which the licensee seeks the approval of the individual as the Radiation Safety Officer or Associate Radiation Safety Officer, and meets the requirements in subparagraph .05(22)(d); or

3. Has experience with the radiation safety aspects of the types of use of byproduct material for which the individual is seeking simultaneous approval both as the Radiation Safety Officer and the authorized user on the same new medical use license or new medical use permit issued by a Commission master material license. The individual must also meet the requirements in subparagraph .05(22)(d).

(d) Has training in the radiation safety, regulatory issues, and emergency procedures for the types of use for which a licensee seeks approval. This training requirement may be satisfied by completing training that is supervised by a Radiation Safety Officer, an Associate Radiation Safety Officer, authorized medical physicist, authorized nuclear pharmacist, or authorized user, as appropriate, who is authorized for the type(s) of use for which the licensee is seeking approval.

(23) **Training for Authorized Medical Physicist.** Except as provided in Rule .05(26) the licensee shall require the authorized medical physicist to be an individual who:

(a) Is certified by a specialty board whose certification process includes all of the training and experience requirements in .05(23)(c) and whose certification has been recognized by the Nuclear Regulatory Commission or an Agreement State. (The names of board certifications that have been recognized by the Nuclear Regulatory Commission or an Agreement State will be posted on the NRC's Web page.) To have its certification process recognized, a specialty board shall require all candidates for certification to:

1. Hold a master's or doctor's degree in physics, medical physics, other physical science, engineering, or applied mathematics from an accredited college or university;

2. Have 2 years of full-time practical training and/or supervised experience in medical physics:

(i) Under the supervision of a medical physicist who is certified in medical physics by a specialty board recognized by the Nuclear Regulatory Commission or an Agreement State; or

(ii) In clinical radiation facilities providing high-energy, external beam therapy (photons and electrons with energies greater than or equal to 1 million electron volts) and brachytherapy services under the direction of physicians who meet the requirements for authorized users in Rule .05(26), .05(63) or .05(84); and

3. Pass an examination, administered by diplomates of the specialty board, that assesses knowledge and competence in clinical radiation therapy, radiation safety, calibration, quality assurance, and treatment planning for external beam therapy, brachytherapy, and stereotactic radiosurgery; or

(b) 1. Holds a master's or doctor's degree in physics, medical physics, other physical science, engineering, or applied mathematics from an accredited college or university; and has completed 1 year of full-time training in medical physics and an additional year of full-time work experience under the supervision of an individual who meets the requirements for an authorized medical physicist for the type(s) of use for which the individual is seeking authorization. This training and work experience must be conducted in clinical radiation facilities that provide high-energy, external beam therapy (photons and electrons with energies greater than or equal to 1 million electron volts) and brachytherapy services and must include:

(i) Performing sealed source leak tests and inventories;

(ii) Performing decay corrections;

(iii) Performing full calibration and periodic spot checks of external beam treatment units, stereotactic radiosurgery units, and remote afterloading units as applicable; and

(iv) Conducting radiation surveys around external beam treatment units, stereotactic radiosurgery units, and remote afterloading units as applicable; and

2. Has obtained written attestation that the individual has satisfactorily completed the requirements in .05(23)(b)1. and .05(23)(c) of this section, and has achieved a level of competency sufficient to function independently as an authorized medical physicist for each type of therapeutic medical unit for which the individual is requesting authorized medical physicist status. The written attestation must be signed by a preceptor authorized medical physicist who meets the requirements in Rule .05(23), .05(26), or equivalent Nuclear Regulatory Commission or Agreement State requirements for an authorized medical physicist for each type of therapeutic medical unit for which the individual is requesting authorized medical physicist status; and

(c) Has training for the type(s) of use for which authorization is sought that includes hands-on device operation, safety procedures, clinical use, and the operation of a treatment planning system. This training requirement may be satisfied by satisfactorily completing either a training program provided by the vendor or by training supervised by an authorized medical physicist authorized for the type(s) of use for which the individual is seeking authorization.

(24) **Training for an Authorized Nuclear Pharmacist.** Except as provided in Rule .05(26), the licensee shall require the authorized nuclear pharmacist to be a pharmacist who:

(a) Is certified by a specialty board whose certification process has been recognized by the Nuclear Regulatory Commission or an Agreement State. (The names of board certifications that have been recognized by the Nuclear Regulatory Commission or an Agreement State will be posted on the NRC's Web page.) To have its certification process recognized, a specialty board shall require all candidates for certification to:

1. Have graduated from a pharmacy program accredited by the American Council on Pharmaceutical Education (ACPE) or have passed the Foreign Pharmacy Graduate Examination Committee (FPGEC) examination;

2. Hold a current, active license to practice pharmacy;

3. Provide evidence of having acquired at least 4,000 hours of training/experience in nuclear pharmacy practice. Academic training may be substituted for no more than 2,000 hours of the required training and experience; and

4. Pass an examination in nuclear pharmacy administered by diplomates of the specialty board, that assesses knowledge and competency in procurement, compounding, quality assurance, dispensing, distribution, health and safety, radiation safety, provision of information and consultation, monitoring patient outcomes, research and development; or

(b) 1. Has completed 700 hours in a structured educational program consisting of both:

(i) 200 hours of classroom and laboratory training in the following areas:

(I) Radiation physics and instrumentation;

(II) Radiation protection;

(III) Mathematics pertaining to the use and measurement of radioactivity;

(IV) Chemistry of radioactive material for medical use; and

(V) Radiation biology; and

(ii) Supervised practical experience in a nuclear pharmacy involving:

(I) Shipping, receiving, and performing related radiation surveys;

(II) Using and performing checks for proper operation of dose calibrators, survey meters, and, if appropriate, instruments used to measure alpha or beta-emitting radionuclides;

(III) Calculating, assaying, and safely preparing dosages for patients or human research subjects;

(IV) Using administrative controls to avoid misadministrations in the administration of radioactive material; and

(V) Using procedures to prevent or minimize radioactive contamination and using proper decontamination procedures; and

2. Has obtained written attestation, signed by a preceptor authorized nuclear pharmacist, that the individual has satisfactorily completed the requirements in Rule .05(24)(b)1. and has achieved a level of competency sufficient to independently fulfill the radiation safety-related duties as an authorized nuclear pharmacist and operate a nuclear pharmacy, and

(c) Licensed as a Nuclear Pharmacist by the Georgia Board of Pharmacy.

(25) **Training and Technical Requirements for Nuclear Medicine Technologists and Radiation Therapists.**

(a) The licensee shall require a nuclear medicine technologist using radioactive materials under the supervision of an authorized user to be an individual who:

1. Is certified in:

(i) Nuclear Medicine by the Nuclear Medicine Technology Certification Board;

(ii) Nuclear Medicine by the American Registry of Radiologic Technologists with competency in Nuclear Medicine; or,

2. Is board eligible to take the CNMT or ARRT(N) examinations; or,

3. Has successfully completed a training program in nuclear medicine which has resulted in a certificate, associate degree, or baccalaureate degree in a nuclear medicine technology program from an accredited institution; or,

4. Has performed as a full-time nuclear medicine technologist for a minimum of two years during the past five-year period under the supervision of an authorized user who attests the experience in writing; or,

5. Has completed 80 hours of training and experience in basic radionuclide handling techniques applicable to the medical use of unsealed radioactive material that includes:

(i) Classroom and laboratory training in the following areas:

(I) Radiation physics and instrumentation;

(II) Radiation protection;

(III) Mathematics pertaining to the use and measurement of radioactivity;

(IV) Chemistry of radioactive material for medical use; and

(V) Radiation biology; and

(ii) Work experience, under the supervision of an authorized user involving:

(I) Ordering, receiving, and unpacking radioactive materials safely and performing the related radiation surveys;

(II) Quality Control checking of instruments used to determine the activity of dosages and performing checks for proper operation of survey meters;

(III) Calculating, measuring, and safely preparing patient or human research subject dosages;

(IV) Using administrative controls to prevent a misadministration involving the use of unsealed radioactive material;

(V) Using procedures to contain spilled radioactive material safely and using proper decontamination procedures;

(VI) Administering dosages to patients or human research subjects; and

(iii) Has obtained written attestation, signed by a preceptor authorized user that the individual has satisfactorily completed the requirements of this section and has achieved a level of competency sufficient to independently function as a nuclear medicine technologist.

(b) The licensee shall require a radiation therapist using radioactive materials under the supervision of an authorized user to be an individual who:

1. Is certified in Radiation Therapy by the American Registry of Radiologic Technologists (ARRT(T)); or

2. Is board eligible to take the ARRT(T) examination; or,

3. Has successfully completed a training program in radiation therapy which has resulted in a certificate, associate degree, or baccalaureate degree in a radiologic technology program that complies with the requirements of the Joint Review Committee on Education in Radiologic Technology[1]; or,

4. Has performed as a full-time radiation therapist for a minimum of two years during the past five-year period under the supervision of an authorized user who attests the experience in writing; or

5. Has completed 200 hours of training and experience in basic radionuclide handling techniques applicable to the medical use of radioactive material that includes:

(i) Classroom and laboratory training in the following areas:

(I) Radiation physics and instrumentation;

(II) Radiation protection;

(III) Mathematics pertaining to the use and measurement of radioactivity; and

(IV) Radiation biology; and

(ii) Work experience, under the supervision of an authorized user involving:

(I) Ordering, receiving, and unpacking radioactive materials safely and performing the related radiation surveys;

(II) Assisting the authorized user in simulating the patient for treatment;

(III) Preparing the patient for treatment;

(IV) Implementing treatment plans as prescribed by the authorized user;

(V) Providing written documentation of treatment setup and patient treatments;

(VI) Quality control checks to determine that devices used to deliver the radiation doses are in compliance with institutional standards and performing checks for proper operation of survey meters;

(VII) Preparing or assisting in the preparation of sources, and implantation and removal of sealed sources;

(VIII) Delivering doses to patients or human research subjects under the supervision of the authorized user;

(IX) Preparing, implanting, and removing sealed sources;

(X) Delivering dose to patients or human research subjects;

(XI) Maintaining running inventories of material on hand;

(XII) Using administrative controls to prevent a misadministration involving the use of radioactive material; and,

(XIII) Properly implementing emergency procedures, and,

(iii) Has obtained written attestation, signed by a preceptor authorized user that the individual has satisfactorily completed the requirements of this section and has achieved a level of competency sufficient to independently function as a radiation therapist.

(c) Individuals working as nuclear medicine technologists or radiation therapists prior to July 1, 2003 for a facility holding a Division license need not comply with the training requirements of this section.

(d) The licensee shall maintain records of the above training as specified in Rule .05(100).

(26) **Provisions for Experienced Radiation Safety Officer, Teletherapy or Medical Physicist, Authorized Medical Physicist, Authorized User, Nuclear Pharmacist, and Authorized Nuclear Pharmacist.**

(a) 1. An individual identified as a Radiation Safety Officer, a teletherapy or medical physicist, an authorized medical physicist, a nuclear pharmacist or an authorized nuclear pharmacist on a Division, Nuclear Regulatory Commission or Agreement State license or on a permit issued by the Division, Nuclear Regulatory commission or Agreement State broad scope licensee or master material license permit or by a master material license permittee of broad scope before the effective date of this rule, need not comply with the training requirements of Rules .05(22), .05(23), or .05(24), respectively except the Radiation Safety Officers and authorized medical physicists identified in this paragraph must meet the training requirements in Rule .05(22)(d) or .05(23)(c), as appropriate, for any material or uses for which they were not authorized prior to this date.

2. Any individual certified by the American Board of Health Physics in Comprehensive Health Physics; American Board of Radiology; American Board of Nuclear Medicine; American Board of Science in Nuclear Medicine; Board of Pharmaceutical Specialties in Nuclear Pharmacy; American Board of Medical Physics in radiation oncology physics; Royal College of Physicians and Surgeons of Canada in nuclear medicine; American Osteopathic Board of Radiology; or American Osteopathic Board of Nuclear Medicine on or before October 24, 2005, need not comply with the training requirements of Rule .05(22) to be identified as a Radiation Safety Officer or as an Associate Radiation Safety Officer on a Division, U.S. Nuclear Regulatory Commission or an Agreement State license or U.S. Nuclear Regulatory Commission master material license permit for those materials and uses that these individuals performed on or before October 24, 2005.

3. Any individual certified by the American Board of Radiology in therapeutic radiological physics, Roentgen ray and gamma ray physics, x-ray and radium physics, or radiological physics, or certified by the American Board of Medical Physics in radiation oncology physics, on or before October 24, 2005, need not comply with the training requirements for an authorized medical physicist described in Rule .05(23), for those materials and uses that these individuals performed on or before October 24, 2005.

4. A Radiation Safety Officer, a medical physicist, or a nuclear pharmacist, who used only accelerator-produced radioactive materials, discrete sources of radium-226, or both, for medical uses or in the practice of nuclear pharmacy at a Government agency or Federally recognized Indian Tribe before November 30, 2007 or at all other locations of use before August 8, 2009, or an earlier date as noticed by the NRC, need not comply with the training

requirements of Rules .05(22), .05(23) or .05(24), respectively, when performing the same uses. A nuclear pharmacist, who prepared only radioactive drugs containing accelerator-produced radioactive materials, or a medical physicist, who used only accelerator-produced radioactive materials, at the locations and time period identified in this paragraph, qualifies as an authorized nuclear pharmacist or an authorized medical physicist, respectively, for those materials and uses performed before these dates, for purposes of this chapter.

(b) 1. Physicians, dentists, or podiatrists identified as authorized users for the medical use of radioactive byproduct material on a license issued by the Division, Nuclear Regulatory Commission or an Agreement State, a permit issued by a Nuclear Regulatory Commission master material licensee, a permit issued by a Division, Nuclear Regulatory Commission or an Agreement State broad scope licensee, or a permit issued by a Nuclear Regulatory Commission master material license broad scope permittee on or before March 17, 2020, who perform only those medical uses for which they were authorized on that date need not comply with the training requirements of Rules .05(43), .05(47), .05(52), .05(53), .05(54), .05 (54.1), .05(63). .05(64), .05(66), and .05(84), respectively.

2. Physicians, dentists, or podiatrists identified as authorized users for the medical use of radioactive byproduct material on a license issued by the Division, Nuclear Regulatory Commission or Agreement State, a permit issued by a Nuclear Regulatory Commission master material licensee, a permit issued by a Division, Nuclear Regulatory Commission or Agreement State broad scope licensee, or a permit issued by a Nuclear Regulatory Commission master material license broad scope permittee who perform only those medical uses for which they were authorized on or before October 24, 2005, need not comply with the training requirements of Rules .05(43), .05(47), .05(52), .05(53), .05(54), .05 (54.1), .05(63). .05(64), .05(66), and .05(84), as follows:

(i) For uses authorized under Rules .05(41) or .05(44), or oral administration of sodium iodide I-131 requiring a written directive for imaging and localization purposes, a physician who was certified on or before October 24, 2005, in nuclear medicine by the American Board of Nuclear Medicine; diagnostic radiology by the American Board of Radiology; diagnostic radiology or radiology by the American Osteopathic Board of Radiology; nuclear medicine by the Royal College of Physicians and Surgeons of Canada; or American Osteopathic Board of Nuclear Medicine in nuclear medicine;

(ii) For uses authorized under Rule .05(48), a physician who was certified on or before October 24, 2005, by the American Board of Nuclear Medicine; the American Board of Radiology in radiology, therapeutic radiology, or radiation oncology; nuclear medicine by the Royal College of Physicians and Surgeons of Canada; or the American Osteopathic Board of Radiology after 1984;

(iii) For uses authorized under Rules .05(55) or .05(67), a physician who was certified on or before October 24, 2005, in radiology, therapeutic radiology or radiation oncology by the American Board of Radiology; radiation oncology by the American Osteopathic Board of Radiology; radiology, with specialization in radiotherapy, as a British "Fellow of the Faculty of Radiology" or "Fellow of the Royal College of Radiology"; or therapeutic radiology by the Canadian Royal College of Physicians and Surgeons; and

(iv) For uses authorized under Rules .05(65), a physician who was certified on or before October 24, 2005, in radiology, diagnostic radiology, therapeutic radiology, or radiation oncology by the American Board of Radiology; nuclear medicine by the American Board of Nuclear Medicine; diagnostic radiology or radiology by the American Osteopathic Board of Radiology; or nuclear medicine by the Royal College of Physicians and Surgeons of Canada.

3. Physicians, dentists, or podiatrists who used only accelerator-produced radioactive materials, discrete sources of radium-226, or both, for medical uses performed at a Government agency or Federally recognized Indian Tribe before November 30, 2007 or at all other locations of use before August 8, 2009, or an earlier date as noticed by the NRC, need not comply with the training requirements of Rules .05(43), .05(47), .05(52), .05(53), .05(54), .05 (54.1), .05(63). .05(64), .05(66), and .05(84) respectively, when performing the same medical uses. A physician, dentist, or podiatrist, who used only accelerator-produced radioactive materials, discrete sources of radium-226, or both, for medical uses at the locations and time period identified in this paragraph, qualifies as an authorized user for those materials and uses performed before these dates, for purposes of this chapter.

(c) Individuals who need not comply with training requirements as described in this section may serve as preceptors for, and supervisors of, applicants seeking authorization on the Division licenses for the same uses for which these individuals are authorized.

(27) **Recentness of Training.** The training and experience specified in Rule .05 must have been obtained within the 7 years preceding the date of application or the individual must have had related continuing education and experience since the required training and experience was completed.

GENERAL TECHNICAL REQUIREMENTS.

(28) **Quality Control of Diagnostic Equipment.** Each licensee shall establish written quality control procedures for all diagnostic equipment used for radionuclide studies. As a minimum, quality control procedures and frequencies shall be those recommended by equipment manufacturers or procedures that have been approved by the Division. The licensee shall conduct quality control procedures in accordance with written procedures.

(29) **Possession, Use, and Testing of Instruments to Measure the Activity of Unsealed Radioactive Materials.**

(a) For direct measurements performed in accordance with Rule .05(31), a licensee shall possess and use instrumentation to measure the activity of unsealed radioactive materials prior to administration to each patient or human research subject.

(b) A licensee shall test the instrumentation required in Rule .05(29)(a) in accordance with nationally recognized standards or the manufacturer's instructions.

(c) The tests required in Rule .05(29)(b) shall include tests for constancy, linearity, accuracy and geometry dependence, as appropriate to demonstrate proper operation of the instrument.

(d) A licensee shall retain a record of each instrument test required by Rule .05(29) in accordance with Rule .05(91).

(30) **Calibration of Survey Instruments.**

(a) A licensee shall ensure that the survey instruments used to show compliance with Rule .05 and Rule .03 of this Chapter, have been calibrated before first use, annually, and following any repair that will affect the calibration.

(b) To satisfy the requirements of Rule .05(30)(a), the licensee shall:

1. Calibrate all required scale readings up to 10 millisievert (1,000 mrem) per hour with a radiation source;

2. Have each radiation survey instrument calibrated:

(i) At energies appropriate for use and at intervals not to exceed 12 months or after instrument servicing, except for battery changes;

(ii) For linear scale instruments, at two points located approximately one-third and two-thirds of full-scale on each scale; for logarithmic scale instruments, at mid-range of each decade, and at two points of at least one decade; and for digital instruments, at 3 points between 0.02 and 10 millisievert (2 and 1,000 mrem) per hour; and

(iii) For dose rate instruments, so that an accuracy within plus or minus 20 percent of the true radiation dose rate can be demonstrated at each point checked; and

3. Conspicuously note on the instrument the date of calibration.

(c) The licensee shall not use survey instruments if the difference between the indicated exposure rate and the calculated exposure rate is greater than 20 percent.

(d) A licensee shall check each survey instrument for consistent response with a dedicated check source before each use. The licensee is not required to keep records of these checks.

(e) The licensee shall retain a record of each survey instrument calibration in accordance with Rule .05(92).

(31) **Determination of Dosages of Radioactive Material for Medical Use.**

(a) A licensee shall determine and record the activity of each dosage prior to medical use.

(b) For a unit dosage, this determination must be made either by direct measurement or by a decay correction, based on the measurement made by a manufacturer or preparer licensed pursuant to Rule .02 of this Chapter or equivalent provisions of the Nuclear Regulatory Commission or Agreement State.

(c) For other than unit dosages, this determination must be made by direct measurement of radioactivity or by a combination of measurements of radioactivity and mathematical calculations or combination of volumetric measurements and mathematical calculations, based on the measurement made by a manufacturer or preparer licensed pursuant to Rule .02 of this Chapter or equivalent provisions of the Nuclear Regulatory Commission or Agreement State.

(d) Unless otherwise directed by the authorized user, a licensee shall not use a dosage if the dosage differs from the prescribed dosage by more than 20 percent.

(e) A licensee shall retain a record of the dosage determination required by Rule .05(31)(a) through (31)(c) in accordance with Rule .05(93).

(32) **Authorization for Calibration, Transmission and Reference Sources.** Any person authorized by Rule .05(7) for medical use of radioactive material may receive, possess, and use the following radioactive material for check, calibration and reference use:

(a) Sealed sources manufactured and distributed by persons specifically licensed pursuant to Rule .02 of this Chapter or equivalent provisions of the Nuclear Regulatory Commission or Agreement State and that do not exceed 1.11 gigabecquerel (30 mCi) each;

(b) Any radioactive material with a half-life of 120 days or less in individual amounts not to exceed 555 megabecquerel (15 mCi);

(c) Any radioactive material with a half-life greater than 120 days in individual amounts not to exceed the smaller of:

1. 7.4 megabecquerel (200 μCi); or

2. 1,000 times the quantities in Schedule B of Rule .02(21)(b) of this Chapter; and

(d) Technetium-99m in amounts as needed.

(33) **Requirements for Possession of Sealed Sources and Brachytherapy Sources.**

(a) A licensee in possession of any sealed source or brachytherapy source shall follow the radiation safety and handling instructions supplied by the manufacturer or equivalent instructions approved by the Division.

(b) A licensee in possession of a sealed source shall:

1. Test the source for leakage in accordance with Rule .03 of this Chapter.

2. Test the source for leakage at intervals not to exceed 6 months or at other intervals approved by the Division, an Agreement State, or the Nuclear Regulatory Commission in the Sealed Source and Device Registry.

(c) If the leak test reveals the presence of 185 becquerel (0.005 µCi) or more of removable contamination, the licensee shall:

1. Immediately withdraw the sealed source from use and store, dispose, or cause it to be repaired in accordance with the requirements of Rules .02 and .03 of this Chapter; and

2. File a report with the Division within 5 days of receiving the leak test results in accordance with Rule .05(117).

(d) A licensee in possession of a sealed source or brachytherapy source, except for gamma stereotactic radiosurgery sources, shall conduct a semi-annual physical inventory of all such sources. The licensee shall retain each inventory record in accordance with Rule .05(94).

(34) **Labels.** Each syringe and vial that contains a radioactive drug shall be labeled to identify the radioactive drug. Each syringe shield and vial shield shall also be labeled unless the label on the syringe or vial is visible when shielded.

(35) **Vial Shields.** A licensee shall require each individual preparing or handling a vial that contains a radioactive drug to keep the vial in a vial radiation shield.

(36) **Surveys for Ambient Radiation Dose Rate and Contamination.**

(a) Except as provided in Rule .05(36)(h), a licensee shall survey with a radiation detection survey instrument at the end of each day of use all areas where radioactive drugs containing radioactive material requiring a written directive were prepared for use or administered.

(b) A licensee shall survey with a radiation detection survey instrument at least once each week all areas where radioactive drugs or radioactive wastes are stored.

(c) A licensee shall conduct the surveys required by Rule .05(36)(a) and (b) so as to be able to measure dose rates as low as 1 microsievert (0.1 mrem) per hour.

(d) A licensee shall establish dose rate action levels for the surveys required by Rule .05(36)(a) and (36)(b) and shall require that the individual performing the survey immediately notify the Radiation Safety Officer if a dose rate exceeds an action level.

(e) A licensee shall survey for removable contamination each day of use all areas where generators and bulk radioactive drugs are prepared for use or administered and each week where radioactive materials are stored.

(f) A licensee shall conduct the surveys required by Rule .05(36)(e) so as to be able to detect contamination on each wipe sample of 33.3 becquerel (2,000 dpm).

(g) A licensee shall establish removable contamination action levels for the surveys required by Rule .05(36)(e) and shall require that the individual performing the survey immediately notify the Radiation Safety Officer if contamination exceeds action levels.

(h) A licensee does not need to perform the surveys required by Rule .05(36)(a) in area(s) where patients or human research subjects are confined when they cannot be released pursuant to Rule .05(37).

(i) A licensee shall retain a record of each survey in accordance with Rule .05(95).

(37) **Release of Individuals Containing Radioactive Drugs or Implants.**

(a) A licensee may authorize the release of any individual who has been administered radioactive drugs or implants containing radioactive material if the total effective dose equivalent to any other individual from exposure to the released individual is not likely to exceed 5 mSv (0.5 rem).

(b) For patients administered radioactive material for which a written directive is required, a licensee shall provide the released individual, or the individual's parent or guardian, with instructions, including oral and written instructions, on actions recommended to maintain doses to other individuals as low as is reasonably achievable. If a breast-feeding infant or child could receive a radiation dose as a result of the release of the patient, the instructions shall also include:

1. Guidance on the interruption or discontinuation of breast-feeding; and

2. Information on the potential consequences, if any, of failure to follow the guidance.

(c) The licensee shall maintain a record of the basis for authorizing the release of an individual in accordance with Rule .05(96).

(d) The licensee shall maintain a record of instructions provided to breast-feeding women in accordance with Rule .05(96).

(e) Notwithstanding Rule .05(37)(a), the licensee may be held responsible for the proper disposal of any individual's radioactive waste discovered in a solid waste stream that can be traced to the licensee.

(f) The licensee shall immediately notify the Division in accordance with Rule .05(118) if a patient departs prior to an authorized release.

(g) The licensee shall notify the Division in accordance with Rule .05(119):

1. When they are aware that a patient containing radioactive material and who has been released in accordance with Rule .05(37) dies; and,

2. If it is possible that any individual could receive exposures in excess of 5 millisievert (500 mrem) as a result of the deceased's body.

(38) **Mobile Medical Service Technical Requirements.** A licensee providing mobile medical service shall:

(a) Transport to each client's address only syringes or vials containing prepared drugs or radioactive materials that are intended for reconstitution of radioactive drug kits;

(b) Bring into each client's address all radioactive material to be used and, before leaving, remove all unused radioactive material and associated radioactive waste;

(c) Secure or keep under constant surveillance and immediate control all radioactive material when in transit or at a client's address;

(d) Check instruments used to measure the activity of unsealed radioactive material for proper function before medical use at each client's address or on each day of use, whichever is more frequent. At a minimum, the check for proper function shall include a constancy check;

(e) Check survey instruments for consistent response with a dedicated check source before use at each client's address;

(f) Prior to leaving a client's address, perform area surveys and survey for removable contamination in all areas of use, to ensure compliance with Rule .03 of this Chapter;

(g) Use radioactive gases only in areas of use and under conditions which have been evaluated and approved by the Division for compliance with airborne release standards; and,

(h) Retain a record of each survey required by Rule .05(38)(f) in accordance with Rule .05(97)(b).

(39) **Storage and Control of Volatiles and Gases.**

(a) A licensee shall store volatile radioactive materials and radioactive gases in the shippers' radiation shield and container.

(b) A licensee shall store and use a multi-dose container in a properly functioning fume hood.

(c) A licensee who administers radioactive aerosols or gases shall do so with a system that will keep airborne concentrations within the limits prescribed in Rule .03 of this Chapter.

(d) The system shall either be directly vented to the atmosphere through an air exhaust or provide for collection and decay or disposal of the aerosol or gas in a shielded container.

(e) A licensee shall check the operation of collection systems monthly. Records of these checks shall be maintained for 3 years.

(40) **Decay-in-Storage.**

(a) A licensee may hold radioactive material with a physical half-life of less than 120 days for decay-in-storage before disposal without regard to its radioactivity if the licensee:

1. Monitors radioactive material at the container surface before disposal and determines that its radioactivity cannot be distinguished from the background radiation level with an appropriate radiation detection survey instrument set on its most sensitive scale and with no interposed shielding;

2. Removes or obliterates all radiation labels, except for material that will be handled as biomedical waste after release; and

3. Separates and monitors each generator column individually with all radiation shielding removed to ensure that its contents have decayed to background radiation level before disposal.

(b) For radioactive material disposed in accordance with (40)(a) of this section, the licensee shall retain a record of each disposal in accordance with Rule .05(98).

SPECIFIC REQUIREMENTS FOR THE USE OF RADIOACTIVE MATERIAL WRITTEN DIRECTIVE NOT REQUIRED.

(41) **Use of Unsealed Radioactive Material for Uptake, Dilution, or Excretion Studies for which a Written Directive is Not Required.** A licensee may use any unsealed radioactive material, in quantities that do not require a written directive, for a diagnostic use involving measurements of uptake, dilution, or excretion that is:

(a) Obtained from a manufacturer or preparer licensed pursuant to Rule .02 of this Chapter or equivalent regulations of another Agreement State or the Nuclear Regulatory Commission; or

(b) Excluding production of PET radionuclides, prepared by an authorized nuclear pharmacist, a physician who is an authorized user and who meets the requirements specified in Rule .05(47) or .05(52) and .05(47)(c)1.(ii)(VII), or an individual under the supervision of either as specified in Rule .05(18); or

(c) Obtained from and prepared by a Division, Nuclear Regulatory Commission or Agreement State licensee for use in research in accordance with a Radioactive Drug Research Committee-approved protocol or an Investigational New Drug (IND) protocol accepted by FDA; or

(d) Prepared by the licensee in accordance with a Radioactive Drug Research Committee-approved application or an Investigational New Drug (IND) protocol accepted by FDA for use in research.

(42) **Possession of Survey Instrument.** A licensee authorized to use radioactive material for uptake, dilution, and excretion studies shall possess a portable radiation detection survey instrument capable of detecting dose rates over the range 1 microsievert (0.1 mrem) per hour to 500 microsievert (50 mrem) per hour. The instrument shall be operable and calibrated in accordance with Rule .05(30).

(43) **Training for Uptake, Dilution, and Excretion Studies.** Except as provided in Rule .05(26), the licensee shall require an authorized user of a unsealed radioactive material for the uses authorized under Rule .05(41) to be a physician who:

(a) Is certified by a medical specialty board whose certification process has been recognized by the Division, Nuclear Regulatory Commission or an Agreement State. (The names of board certifications that have been recognized by the Commission or an Agreement State will be posted on the NRC's Web page.) To have its certification process recognized, a specialty board shall require all candidates for certification to:

1. Complete 60 hours of training and experience in basic radionuclide handling techniques and radiation safety applicable to the medical use of unsealed radioactive material for uptake, dilution, and excretion studies as described in Rule .05(43)(c)1.(i) through .05(43)(c)1.(ii)(VI); and

2. Pass an examination, administered by diplomates of the specialty board, that assesses knowledge and competence in radiation safety, radionuclide handling, and quality control; or

(b) Is an authorized user under Rule .05(47) or .05(52) or equivalent Agreement State or Nuclear Regulatory Commission requirements; or

(c) 1. Has completed 60 hours of training and experience, including a minimum of 8 hours of classroom and laboratory training, in basic radionuclide handling techniques applicable to the medical use of unsealed radioactive material for uptake, dilution, and excretion studies that includes:

(i) Classroom and laboratory training in the following areas:

(I) Radiation physics and instrumentation;

(II) Radiation protection;

(III) Mathematics pertaining to the use and measurement of radioactivity;

(IV) Chemistry of radioactive material for medical use; and

(V) Radiation biology; and

(ii) Work experience, under the supervision of an authorized user who meets the requirements in Rules .05(26), (43), (47) or (52) or equivalent Agreement State or Nuclear Regulatory Commission requirements, involving:

(I) Ordering, receiving, and unpacking radioactive materials safely and performing the related radiation surveys;

(II) Performing quality control procedures on instruments used to determine the activity of dosages and performing checks for proper operation of survey meters;

(III) Calculating, measuring, and safely preparing patient or human research subject dosages;

(IV) Using administrative controls to prevent a medical event involving the use of unsealed radioactive material;

(V) Using procedures to contain spilled radioactive material safely and using proper decontamination procedures; and

(VI) Administering dosages to patients or human research subjects; and

2. Has obtained written attestation that the individual has satisfactorily completed the requirements in Rule .05(43)(c)1. and is able to independently fulfill the radiation safety-related duties as an authorized user for the medical uses authorized under Rule .05(41). The signed attestation must be obtained from either:

(i) A preceptor authorized user, who meets the requirements in Rules .05(26), (43), (47), or (52), or equivalent Agreement State or Nuclear Regulatory Commission requirements; or

(ii) A residency program director who affirms in writing that the consensus of the residency program faculty where at least one faculty member is an authorized user who meets the requirements in Rules .05(26), (43), (47), or (52), or equivalent Agreement State or Nuclear Regulatory Commission requirements, and concurs with the attestation provided by the residency program director. The residency training program must be approved by the Residency Review Committee of the Accreditation Council for Graduate Medical Education or the Royal College of Physicians and Surgeons of Canada or the Council on Postdoctoral Training of the American Osteopathic Association and must include training and experience specified in subparagraph .05(43)(c)1.

(44) **Use of Unsealed Radioactive Material for Imaging and Localization Studies for Which a Written Directive is Not Required.** A licensee may use, for imaging and localization studies, any radioactive material (except aerosol or gaseous forms) prepared for medical use, in quantities that do not require a written directive as described in Rule .05(19) that is:

(a) Obtained from a manufacturer or preparer licensed pursuant to Rule .02 of this Chapter or equivalent regulations of another Agreement State or the Nuclear Regulatory Commission; or

(b) Excluding production of PET radionuclides, prepared by an authorized nuclear pharmacist, a physician who is an authorized user and who meets the requirements specified in Rule .05(47) or .05(52) and .05(47)(c)1.(ii)(VII), or an individual under the supervision of either as specified in Rule .05(18); or

(c) Obtained from and prepared by the Division, Nuclear Regulatory Commission or Agreement State licensee for use in research in accordance with a Radioactive Drug Research Committee- approved protocol or an Investigational New Drug (IND) protocol accepted by FDA; or

(d) Prepared by the licensee in accordance with a Radioactive Drug Research Committee-approved application or an Investigational New Drug (IND) protocol accepted by FDA, or

(e) Provided the conditions of Rule .05(39) are met, a licensee shall use radioactive aerosols or gases only if specific application is made to and approved by the Division.

(45) **Permissible molybdenum-99, strontium-82, and strontium-85 concentrations.**

(a) A licensee shall not administer to humans a radioactive drug containing:

1. More than 0.15 kilobecquerel of molybdenum-99 per megabecquerel of technetium-99m (0.15 µCi of Mo-99 per mCi of Tc-99m); or

2. More than 0.02 kilobecquerel of strontium-82 per megabecquerel of rubidium-82 chloride injection (0.02 µCi of Sr-82 per mCi of Rb-82 chloride); or

3. More than 0.2 kilobecquerel of strontium-85 per megabecquerel of rubidium-82 chloride injection (0.2 µCi of Sr-85 per mCi of Rb-82);

(b) To demonstrate compliance with Rule .05(45)(a), the licensee preparing radioactive drugs from radionuclide generators shall:

1. Measure the molybdenum-99 concentration in each eluate from a generator to demonstrate compliance with subparagraph .05(45)(a);

2. Before the first patient use of the day, measure the concentration of radionuclides strontium-82 and strontium-85 to demonstrate compliance with subparagraph .05(45)(a).

(c) A licensee who must measure radionuclide contaminant concentration shall retain a record of each measurement in accordance with Rule .05(99).

(d) A licensee shall report immediately to the Division each occurrence of radionuclide contaminant concentration exceeding the limits specified in Rule .05(45)(a).

(46) **Possession of Survey Instruments.** A licensee authorized to use radioactive material for imaging and localization studies shall possess a portable radiation detection survey instrument capable of detecting dose rates over the range of 1 microsievert (0.1 mrem) per hour to 500 microsievert (50 mrem) per hour, and a portable radiation measurement survey instrument capable of measuring dose rates over the range 10 microsievert (1 mrem) per hour to 10 millisievert (1,000 mrem) per hour. The instruments shall be operable and calibrated in accordance with Rule .05(30).

(47) **Training for Imaging and Localization Studies.** Except as provided in Rule .05(26), the licensee shall require an authorized user of unsealed radioactive material for the uses authorized under Rule .05(44) to be a physician who:

(a) Is certified by a medical specialty board whose certification process has been recognized by the Division, Nuclear Regulatory Commission or an Agreement State. (The names of board certifications that have been recognized by the Nuclear Regulatory Commission or an Agreement State will be posted on the NRC's Web page.) To have its certification process recognized, a specialty board shall require all candidates for certification to:

1. Complete 700 hours of training and experience in basic radionuclide handling techniques and radiation safety applicable to the medical use of unsealed radioactive material for imaging and localization studies as described in (c)1.(i) through (c)1.(ii)(VII) of this rule; and

2. Pass an examination, administered by diplomates of the specialty board, which assesses knowledge and competence in radiation safety, radionuclide handling, and quality control; or

(b) Is listed as an authorized user under Rule .05(52) and meets the requirements in .05(47)(c)1.(ii)(VII) or equivalent Agreement State or Nuclear Regulatory Commission requirements; or

(c) 1. Has completed 700 hours of training and experience, including a minimum of 80 hours of classroom and laboratory training, in basic radionuclide handling techniques applicable to the medical use of unsealed radioactive material for imaging and localization studies that includes, at a minimum:

(i) Classroom and laboratory training in the following areas:

(I) Radiation physics and instrumentation;

(II) Radiation protection;

(III) Mathematics pertaining to the use and measurement of radioactivity;

(IV) Chemistry of radioactive material for medical use;

(V) Radiation biology; and

(ii) Work experience, under the supervision of an authorized user, who meets the requirements in Rule .05(26), .05(47) or .05(47)(c)1.(ii)(VII) and Rule .05(52), or equivalent Agreement State or Nuclear Regulatory Commission requirements. An authorized nuclear pharmacist who meets the requirements in 391-3-17-.05(24) or 391-3-17-.05(26) may provide the supervised work experience for subparagraph .05(47)(c)1.(ii)(VII). Work experience must involve:

(I) Ordering, receiving, and unpacking radioactive materials safely and performing the related radiation surveys;

(II) Performing quality control procedures on instruments used to determine the activity of dosages and performing checks for proper operation of survey meters;

(III) Calculating, measuring, and safely preparing patient or human research subject dosages;

(IV) Using administrative controls to prevent a medical event involving the use of unsealed radioactive material;

(V) Using procedures to contain spilled radioactive material safely and using proper decontamination procedures;

(VI) Administering dosages to patients or human research subjects; and

(VII) Eluting generator systems appropriate for preparation of radioactive drugs for imaging and localization studies, measuring and testing the eluate for radiochemical purity, and processing the eluate with reagent kits to prepare labeled radioactive drugs; and

2. Has obtained written attestation that the individual has satisfactorily completed the requirements in Rule .05(47)(c)1. and is able to independently fulfill the radiation safety-related duties as an authorized user for the medical uses authorized under Rules .05(41) and .05(44). The signed attestation must be obtained from either:

(i) A preceptor authorized user, who meets the requirements in Rules .05(26), (43), (47), or (52), or equivalent Agreement State or Nuclear Regulatory Commission requirements; or

(ii) A residency program director who affirms in writing that the consensus of the residency program faculty where at least one faculty member is an authorized user who meets the requirements in Rules .05(26), (43), (47), or (52), or equivalent Agreement State or Nuclear Regulatory Commission requirements, and concurs with the attestation provided by the residency program director. The residency training program must be approved by the Residency Review Committee of the Accreditation Council for Graduate Medical Education or the Royal College of Physicians and Surgeons of Canada or the Council on Postdoctoral Training of the American Osteopathic Association and must include training and experience specified in subparagraph .05(47)(c)1.

SPECIFIC REQUIREMENTS FOR THE USE OF UNSEALED RADIOACTIVE MATERIAL WRITTEN DIRECTIVE REQUIRED.

(48) **Use of Unsealed Radioactive Material for Which a Written Directive is Required.** A licensee may use any unsealed radioactive material identified in subparagraph (52)(b)1.(ii)(VII) prepared for diagnostic or therapeutic medical use for which a written directive is required that has been:

(a) Obtained from a manufacturer or preparer licensed pursuant to Rule .02 of this Chapter or equivalent regulations of another Agreement State or the Nuclear Regulatory Commission; or

(b) Excluding production of PET radionuclides, prepared by an authorized nuclear pharmacist, a physician who is an authorized user and who meets the requirements specified in Rule .05(47) or (52), or an individual under the supervision of either as specified in Rule .05(26); or

(c) Obtained from and prepared by the Division, Nuclear Regulatory Commission or Agreement State licensee in accordance with a Radioactive Drug Research Committee-approved protocol or an Investigational New Drug (IND) protocol accepted by the FDA for use in research; or

(d) Prepared by the licensee in accordance with a Radioactive Drug Research Committee-approved application or an IND protocol accepted by FDA for use in research.

(49) **Safety Instruction.** In addition to the requirements of Rule .07(3) of this Chapter:

(a) A licensee shall provide radiation safety instruction to personnel caring for patients or human research subjects that have received therapy with a radioactive drug, and cannot be released in accordance with Rule .05(37). The training must be provided initially and at least annually. The instruction must be appropriate to the personnel's assigned duties and include the following:

1. Patient or human research subject control;

2. Visitor control to include the following:

(i) Routine visitation to hospitalized individuals in accordance with Rule .03 of this Chapter;

(ii) Contamination control;

(iii) Waste control; and

(iv) Notification of the RSO, or his or her designee, and the authorized user if the patient or the human research subject dies or has a medical emergency.

(b) A licensee shall retain a record of individuals receiving instruction in accordance with Rule .05(101).

(50) **Safety Precautions.**

(a) For each patient or human research subject receiving radiopharmaceutical therapy and hospitalized for compliance with Rule .05(37), a licensee shall:

1. Quarter the patient or the human research subject either in:

(i) A private room with a private sanitary facility; or

(ii) A room, with a private sanitary facility, with another individual who also has received radiopharmaceutical therapy and who cannot be released in accordance with Rule .05(37); and,

2. Visibly post the patient's or the human research subject's room with a "Radioactive Materials" sign and note on the door or in the patient's or human research subject's chart where and how long visitors may stay in the patient's or the human research subject's room; and

3. Either monitor material and items removed from the patient's or the human research subject's room to determine that their radioactivity cannot be distinguished from the natural background radiation level with a radiation detection survey instrument set on its most sensitive scale and with no interposed shielding, or handle such material and items as radioactive waste.

(b) The Radiation Safety Officer, or his designee, and the authorized user shall be notified immediately if the hospitalized patient dies or has a medical emergency. The licensee shall also notify the Division in accordance with Rule .05(119) if it is possible that any individual could receive exposures in excess of the limits in Rule .03(5)(i) of this Chapter as a result of the deceased's body.

(51) **Possession of Survey Instruments.** A licensee authorized to use radioactive material for which a written directive is required shall possess a portable radiation detection survey instrument capable of detecting dose rates over the range of 1 microsievert (0.1 mrem) per hour to 500 microsievert (50 mrem) per hour, and a portable radiation measurement survey instrument capable of measuring dose rates over the range 10 microsievert (1 mrem) per hour to 10 millisievert (1,000 mrem) per hour. The instruments shall be operable and calibrated in accordance with Rule .05(30).

(52) **Training for Use of Unsealed Radioactive Material for Which a Written Directive is Required.** Except as provided in Rule .05(26), the licensee shall require an authorized user of radioactive material for the uses authorized under Rule .05(48) to be a physician who:

(a) Is certified by a medical specialty board whose certification process has been recognized by the Division, Nuclear Regulatory Commission or an Agreement State, and who meets the requirements of Rule .05(52)(b)1(ii)(VII). (Specialty boards whose certification processes have been recognized by the Nuclear Regulatory Commission or an Agreement State will be posted on the NRC's Web page.) To be recognized, a specialty board shall require all candidates for certification to:

1. Successfully complete residency training in a radiation therapy or nuclear medicine training program or a program in a related medical specialty. These residency training programs must include 700 hours of training and experience as described in Rule .05(52)(b)1.(i) through .05(52)(b)1.(ii)(V). Eligible training programs must be approved by the Residency Review Committee of the Accreditation Council for Graduate Medical Education, the Royal College of Physicians and Surgeons of Canada, or the Committee on Post-Graduate Training of the American Osteopathic Association; and

2. Pass an examination, administered by diplomates of the specialty board, which tests knowledge and competence in radiation safety, radionuclide handling, quality assurance, and clinical use of unsealed radioactive material for which a written directive is required; or

(b) 1. Has completed 700 hours of training and experience, including a minimum of 200 hours of classroom and laboratory training, in basic radionuclide handling techniques applicable to the medical use of unsealed radioactive material requiring a written directive that includes:

(i) Classroom and laboratory training in the following areas:

(I) Radiation physics and instrumentation;

(II) Radiation protection;

(III) Mathematics pertaining to the use and measurement of radioactivity;

(IV) Chemistry of radioactive material for medical use; and

(V) Radiation biology; and

(ii) Work experience, under the supervision of an authorized user who meets the requirements in Rule .05(26), .05(52) or equivalent Agreement State, or Nuclear Regulatory Commission requirements. The work experience must involve:

(I) Ordering, receiving, and unpacking radioactive materials safely and performing the related radiation surveys;

(II) Performing quality control procedures on instruments used to determine the activity of dosages, and performing checks for proper operation of survey meters;

(III) Calculating, measuring, and safely preparing patient or human research subject dosages;

(IV) Using administrative controls to prevent a medical event involving the use of unsealed radioactive material;

(V) Using procedures to contain spilled radioactive material safely and using proper decontamination procedures.

(VI) [Reserved.]

(VII) Administering dosages of radioactive drugs to patients or human research subjects involving a minimum of 3 cases in each of the following categories for which the individual is requesting authorized user status. This experience may be obtained concurrently with the supervised work experience required by Rule .05(52)(b)1.(ii):

(i) Oral administration of less than or equal to 1.22 gigabecquerel (33 millicurie) of sodium iodide I-131, for which a written directive is required;

(ii) Oral administration of greater than 1.22 gigabecquerel (33 millicurie) of sodium iodide I-131[2];

(iii) Parenteral administration of any radioactive drug that contains a radionuclide that is primarily used for its electron emission, beta radiation characteristics, alpha radiation characteristics, or photon energy less than 150 keV, for which a written directive is required; and/or

(iv) Parenteral administration of any other radionuclide, for which a written directive is required; and

2. Has obtained written attestation that the individual has satisfactorily completed the requirements in Rule .05(52)(b)1., and is able to independently fulfill the radiation safety-related duties as an authorized user for the medical uses authorized under Rule .05(48).

The signed attestation must be obtained from either:

(i) A preceptor authorized user, who meets the requirements in Rules .05(26), (43), (47), or (52), or equivalent Agreement State or Nuclear Regulatory Commission requirements and has experience in administering dosages in the same dosage category or categories (i.e., in Rule .05(52)(b)1.(ii)(VII)) as the individual requesting authorized user status; or

(ii) A residency program director who affirms in writing that the consensus of the residency program faculty where at least one faculty member is an authorized user who meets the requirements in Rules .05(26), (43), (47), or (52), or equivalent Agreement State or Nuclear Regulatory Commission requirements, have experience in administering dosages in the same dosage category or categories (i.e., in Rule .05(52)(b)1.(ii)(VII)) as the individual requesting authorized user status, and concurs with the attestation provided by the residency program director. The residency training program must be approved by the Residency Review Committee of the Accreditation Council for Graduate Medical Education or the Royal College of Physicians and Surgeons of Canada or the Council on Postdoctoral Training of the American Osteopathic Association and must include training and experience specified in subparagraph .05(52)(b)1.

(53) **Training for the Oral Administration of Sodium Iodide I-131 in Quantities Less than or Equal to 1.22 Gigabecquerel (33 millicurie) for which a Written Directive is Required.** Except as provided in Rule .05(26), the licensee shall require an authorized user for the oral administration of sodium iodide I-131 in quantities less than or equal to 1.22 gigabecquerel (33 millicurie), for which a written directive is required, to be a physician who:

(a) Is certified by a medical specialty board whose certification process includes all of the requirements in .05(53)(c)1. and .05(53)(c)2. and whose certification has been recognized by the Division, an Agreement State or the Nuclear Regulatory Commission. (The names of board certifications that have been recognized by the Nuclear Regulatory Commission or an Agreement State will be posted on the NRC's Web page.); or

(b) Is an authorized user under Rule (52) for uses listed in (52)(b)1.(ii)(VII)(i) or (ii), or (54), or equivalent Agreement State or Nuclear Regulatory Commission requirements; or

(c) 1. Has successfully completed 80 hours classroom and laboratory training, applicable to the medical use of sodium iodide I-131 for procedures requiring a written directive; the training must include:

(i) Radiation physics and instrumentation;

(ii) Radiation protection;

(iii) Mathematics pertaining to the use and measurement of radioactivity;

(iv) Chemistry of radioactive material for medical use; and

(v) Radiation biology; and

2. Has work experience, under the supervision of an authorized user who meets the requirements in Rule .05(26), (52), (53) or (54), or equivalent Agreement State or Nuclear Regulatory Commission requirements. A supervising authorized user, who meets the requirements of Rule .05(52)(b) must have experience in administering dosages as specified in Rule .05(52)(b)1.(ii)(VII)(i) or (ii); the work experience must involve:

(i) Ordering, receiving, and unpacking radioactive materials safely and performing the related radiation surveys;

(ii) Performing quality control procedures on instruments used to determine the activity of dosages and performing checks for proper operation for survey meters;

(iii) Calculating, measuring, and safely preparing patient or human research subject dosages;

(iv) Using administrative controls to prevent a misadministration involving the use of radioactive material;

(v) Using procedures to contain spilled radioactive material safely and using proper decontamination procedures; and

(vi) Administering dosages to patients or human research subjects that includes at least 3 cases involving the oral administration of less than or equal to 1.22 gigabecquerel (33 millicurie) of sodium iodide I-131; and

3. Has obtained written attestation that the individual has satisfactorily completed the requirements in Rule .05(53)(c)1. and (53)(c)2. and is able to independently fulfill the radiation safety-related duties as an authorized user for medical uses authorized under .05(48).

The signed attestation must be obtained from either:

(i) A preceptor authorized user, who meets the requirements in Rules .05(26), (43), (47), or (52), or equivalent Agreement State or Nuclear Regulatory Commission requirements and has experience in administering dosages in the same dosage category or categories (i.e., in Rule .05(52)(b)1.(ii)(VII)) as the individual requesting authorized user status; or

(ii) A residency program director who affirms in writing that the consensus of the residency program faculty where at least one faculty member is an authorized user who meets the requirements in Rules .05(26), (43), (47), or (52), or equivalent Agreement State or Nuclear Regulatory Commission requirements, have experience in administering dosages in the same dosage category or categories (i.e., in Rule .05(52)(b)1.(ii)(VII)) as the individual requesting authorized user status, and concurs with the attestation provided by the residency program director. The residency training program must be approved by the Residency Review Committee of the Accreditation Council for Graduate Medical Education or the Royal College of Physicians and Surgeons of Canada or the Council on Postdoctoral Training of the American Osteopathic Association and must include training and experience specified in subparagraphs .05(53)(c)1. and 2.

(54) **Training for the Oral Administration of Sodium Iodide I-131 in Quantities Greater than 1.22 Gigabecquerel (33 millicurie) for which a Written Directive is Required.** Except as provided in Rule .05(26), the licensee shall require an authorized user for the oral administration of sodium iodide I-131 in quantities greater than 1.22 gigabecquerel (33 millicurie), to be a physician who:

(a) Is certified by a medical specialty board whose certification process includes all of the requirements in Rules .05(54)(c)1. and .05(54)(c)2. and whose certification has been recognized by the Division, an Agreement State or the Nuclear Regulatory Commission. (The names of board certifications that have been recognized by the Nuclear Regulatory Commission or an Agreement State will be posted on the NRC's Web page.); or

(b) Is an authorized user under Rule .05(52) for uses listed in Rule .05(52)(b)1.(ii)(VII)(ii), or equivalent Agreement State or Nuclear Regulatory Commission requirements; or

(c) 1. Has successfully completed 80 hours classroom and laboratory training, applicable to the medical use of sodium iodide I-131 for procedures requiring a written directive; the training must include:

(i) Radiation physics and instrumentation;

(ii) Radiation protection;

(iii) Mathematics pertaining to the use and measurement of radioactivity;

(iv) Chemistry of radioactive material for medical use; and

(v) Radiation biology; and

2. Has work experience, under the supervision of an authorized user who meets the requirements in Rule .05(26), (52), or (54), or equivalent Agreement State or Nuclear Regulatory Commission requirements. A supervising authorized user, who meets the requirements of Rule .05(52)(b), must have experience in administering dosages as specified in Rule .05(52)(b)1.(ii)(VII)(ii); the work experience must involve:

(i) Ordering, receiving, and unpacking radioactive materials safely and performing the related radiation surveys;

(ii) Performing quality control procedures on instruments used to determine the activity of dosages and performing checks for proper operation for survey meters;

(iii) Calculating, measuring, and safely preparing patient or human research subject dosages;

(iv) Using administrative controls to prevent a misadministration involving the use of radioactive material;

(v) Using procedures to contain spilled radioactive material safely and using proper decontamination procedures; and

(vi) Administering dosages to patients or human research subjects that includes at least 3 cases involving the oral administration of greater than 1.22 gigabecquerel (33 millicurie) of sodium iodide I-131; and

3. Has obtained written attestation that the individual has satisfactorily completed the requirements in Rule .05(54)(c)1. and .05(54)(c)2. and is able to independently fulfill the duties as an authorized user for medical uses authorized under Rule .05(48). The written attestation must be signed by a preceptor authorized user, who meets the requirements in Rule .05(26), .05(52), or .05(54), or equivalent Agreement State or Nuclear Regulatory Commission requirements. The preceptor authorized user, who meets the requirements of Rule .05(52)(b), must have experience in administering dosages as specified in Rule .05(52)(b)1.(ii)(VII)(ii).

(54.1) Except as provided in Rule .05(26) the licensee shall require an authorized user for the parenteral administration requiring a written directive, to be a physician who:

(a) Is an authorized user under Rule .05(52) for uses listed in 05(52)(b)1.(ii)(VII)(iii) or .05(52)(b)1.(ii)(VII)(iv), or equivalent Agreement State or Nuclear Regulatory Commission requirements; or

(b) Is an authorized user under Rules .05(63), .05(84), or equivalent Agreement State or Nuclear Regulatory Commission requirements and who meets the requirements in .05(54.1)(d); or

(c) Is certified by a medical specialty board whose certification process has been recognized by the Division, Nuclear Regulatory Commission or an Agreement State under Rules .05(63) or .05(84), and who meets the requirements in paragraph .05(54.1)(d).

(d) 1. Has successfully completed 80 hours of classroom and laboratory training, applicable to parenteral administrations, for which a written directive is required, of any beta emitter, or any photon-emitting radionuclide

with a photon energy less than 150 keV, and/or parenteral administration of any other radionuclide for which a written directive is required. The training must include:

(i) Radiation physics and instrumentation;

(ii) Radiation protection;

(iii) Mathematics pertaining to the use and measurement of radioactivity;

(iv) Chemistry of byproduct material for medical use; and

(v) Radiation biology; and

2. Has work experience, under the supervision of an authorized user who meets the requirements in Rules .05(26), .05(52), .05 (54.1) or equivalent Agreement State or Nuclear Regulatory Commission requirements, in the parenteral administration, for which a written directive is required, of any beta emitter, or any photon-emitting radionuclide with a photon energy less than 150 keV, and/or parenteral administration of any other radionuclide for which a written directive is required. A supervising authorized user who meets the requirements in Rule .05(52) or .05 (54.1) must have experience in administering dosages as specified in 05(52)(b)1.(ii)(VII)(iii) or .05(52)(b)1.(ii)(VII)(iv). The work experience must involve:

(i) Ordering, receiving, and unpacking radioactive materials safely, and performing the related radiation surveys;

(ii) Performing quality control procedures on instruments used to determine the activity of dosages, and performing checks for proper operation of survey meters;

(iii) Calculating, measuring, and safely preparing patient or human research subject dosages;

(iv) Using administrative controls to prevent a medical event involving the use of unsealed byproduct material;

(v) Using procedures to contain spilled byproduct material safely, and using proper decontamination procedures; and

(vi) Administering dosages to patients or human research subjects, that include at least 3 cases involving the parenteral administration, for which a written directive is required, of any beta emitter, or any photon-emitting radionuclide with a photon energy less than 150 keV and/or at least 3 cases involving the parenteral administration of any other radionuclide, for which a written directive is required; and

3. Has obtained written attestation that the individual has satisfactorily completed the requirements in .05(54.1)(d)1. and (d)2. and is able to independently fulfill the radiation safety-related duties as an authorized user for the parenteral administration of unsealed radioactive material requiring a written directive.

The signed attestation must be obtained from either:

(i) A preceptor authorized user, who meets the requirements in Rules .05(26), (52), (54.1) or equivalent Agreement State or Nuclear Regulatory Commission requirements and has experience in administering dosages in the same dosage category or categories (i.e., in Rule .05(52)(b)1.(ii)(VII)) as the individual requesting authorized user status; or

(ii) A residency program director who affirms in writing that the consensus of the residency program faculty where at least one faculty member is an authorized user who meets the requirements in Rules .05(26), (52) or (54.1), or equivalent Agreement State or Nuclear Regulatory Commission requirements, have experience in administering dosages in the same dosage category or categories (i.e., in Rule .05(52)(b)1.(ii)(VII)) as the individual requesting authorized user status, and concurs with the attestation provided by the residency program director. The residency training program must be approved by the Residency Review Committee of the Accreditation Council for Graduate Medical Education or the Royal College of Physicians and Surgeons of Canada or the Council on Postdoctoral

Training of the American Osteopathic Association and must include training and experience specified in subparagraphs .05(54.1)(d)1. and 2.

Manual Brachytherapy.

(55) **Use of Sealed Sources for Manual Brachytherapy.** A licensee shall use only brachytherapy sources for therapeutic medical uses:

(a) As approved in the Sealed Source and Device Registry for manual brachytherapy medical use. The manual brachytherapy sources may be used for manual brachytherapy uses that are not explicitly listed in the Sealed Source and Device Registry, but must be used in accordance with the radiation safety conditions and limitations described in the Sealed Source and Device Registry; or

(b) In research to deliver therapeutic doses for medical use in accordance with an active Investigational Device Exemption (IDE) application accepted by the U.S. Food and Drug Administration provided the requirements of Rule .05(21)(a) are met.

(56) **Surveys After Source Implant and Removal.**

(a) Immediately after implanting sources in a patient or a human research subject, the licensee shall perform a survey to locate and account for all sources that have not been implanted.

(b) Immediately after removing the last temporary implant source from a patient or a human research subject, the licensee shall make a survey of the patient or the human research subject with a radiation detection survey instrument to confirm that all sources have been removed.

(c) A licensee shall retain a record of the surveys in accordance with Rule .05(102).

(57) **Brachytherapy Sources Inventory.**

(a) A licensee shall maintain accountability at all times for all brachytherapy sources in storage or use.

(b) Promptly after removing sources from a patient or a human research subject, a licensee shall return brachytherapy sources to a secure storage area.

(c) A licensee shall maintain a record of the brachytherapy source accountability in accordance with Rule .05(103).

(58) **Safety Instruction.** In addition to the requirements of Rule .07(3) of this Chapter:

(a) The licensee shall provide radiation safety instruction, initially and at least annually, to personnel caring for patients or human research subjects that are undergoing implant therapy and cannot be released in accordance with Rule .05(37). Instruction must be commensurate with the duties of the personnel and shall include the following:

1. Size and appearance of the brachytherapy sources;

2. Safe handling and shielding instructions;

3. Patient or human research subject control;

4. Visitor control, including both:

(i) Routine visitation of hospitalized individuals in accordance with Rule .03(5)(i)1.(i) of this Chapter; and

(ii) Visitation authorized in accordance with Rule .03(5)(i)2. of this Chapter; and

5. Notification of the Radiation Safety Officer, or his or her designee, and an authorized user if the patient or the human research subject dies or has a medical emergency. The licensee shall also notify the Division in accordance with Rule .05(119) if it is possible for any individual to receive exposures in excess of 5 millisievert (500 mrem) as a result of the deceased's body.

(b) A licensee shall retain a record of individuals receiving instruction in accordance with Rule .05(101).

(59) **Safety Precautions for Patients or Human Research Subjects Receiving Brachytherapy.**

(a) For each patient or human research subject that is receiving brachytherapy and cannot be released in accordance with Rule .05(37), a licensee shall:

1. Not place the patient or human research subject in the same room as an individual who is not receiving brachytherapy;

2. Visibly post the patient's or human research subject's room with a "Radioactive Materials" sign and note on the door or in the patient's or human research subject's chart where and how long visitors may stay in the patient's or human research subject's room.

(b) A licensee shall have emergency response equipment available near each treatment room to respond to a source that inadvertently becomes:

1. Dislodged from the patient; or

2. Lodged within the patient following removal of the source applicators.

(c) Radiation Safety Officer, or his designee, and the authorized user shall be notified immediately if the hospitalized patient or human research subject dies or has a medical emergency.

(60) **Calibration Measurements of Brachytherapy Sealed Sources.**

(a) Prior to the first medical use of a brachytherapy sealed source on or after July 1, 2003, a licensee shall perform the following:

1. Determine the source output or activity using a dosimetry system that meets the requirements of Rule .05(72)(a);

2. Determine source positioning accuracy within applicators; and

3. Use published protocols accepted by nationally recognized bodies to meet the requirements of Rule .05(60)(a)1. and .05(60)(a)2.

(b) A licensee may use measurements provided by the source manufacturer or by a calibration laboratory accredited by the American Association of Physicists in Medicine that are made in accordance with Rule .05(60)(a).

(c) A licensee shall mathematically correct the outputs or activities determined in Rule .05(60)(a) of this section for physical decay at intervals consistent with 1.0 percent physical decay.

(d) An authorized medical physicist shall perform or review the calculation measurements made pursuant to Rule .05(60)(a), (60)(b), or (60)(c).

(e) Only an authorized medical physicist shall calculate the activity of each strontium-90 source that is used to determine the treatment times for ophthalmic treatments. The decay must be based on the activity determined in accordance with Rule .05(60)(a), (60)(b), and (60)(c).

(f) A licensee shall retain a record of each calibration in accordance with Rule .05(104).

(g) A licensee shall retain a record of decay calculations required by Rule .05(60)(e) in accordance with Rule .05(105).

(61) **Therapy-related Computer Systems.** The licensee shall perform acceptance testing on the treatment planning system in accordance with published protocols accepted by nationally recognized bodies. At a minimum, the acceptance testing must include, as applicable, verification of:

(a) The source-specific input parameters required by the dose calculation algorithm;

(b) The accuracy of dose, dwell time, and treatment time calculations at representative points;

(c) The accuracy of isodose plots and graphic displays; and

(d) The accuracy of the software used to determine radioactive source positions from radiographic images.

(62) **Possession of Survey Instruments.** A licensee authorized to use manual brachytherapy sources shall possess a portable radiation detection survey instrument capable of detecting dose rates over the range of 1 microsievert (0.1 mrem) per hour to 500 microsievert (50 mrem) per hour, and a portable radiation measurement survey instrument capable of measuring dose rates over the range 10 microsievert (1 mrem) per hour to 10 millisievert (1,000 mrem) per hour. The instruments shall be operable and calibrated in accordance with Rule .05(30).

(63) **Training for Use of Manual Brachytherapy Sources.** Except as provided in Rule .05(26), the licensee shall require an authorized user of a manual brachytherapy source for the uses authorized under Rule .05(55) to be a physician who:

(a) Is certified by a medical specialty board whose certification process has been recognized by the Division, an Agreement State or the Nuclear Regulatory Commission. (The names of board certifications that have been recognized by the Nuclear Regulatory Commission or an Agreement State will be posted on the NRC's Web page.) To have its certification process recognized, a specialty board shall require all candidates for certification to:

1. Successfully complete a minimum of 3 years of residency training in a radiation oncology program approved by the Residency Review Committee of the Accreditation Council for Graduate Medical Education or the Royal College of Physicians and Surgeons of Canada or the Committee on Post-Graduate Training of the American Osteopathic Association; and

2. Pass an examination, administered by diplomates of the specialty board, that tests knowledge and competence in radiation safety, radionuclide handling, treatment planning, quality assurance, and clinical use of manual brachytherapy; or

(b) 1. Has completed a structured educational program in basic radionuclide handling techniques applicable to the use of manual brachytherapy sources that includes:

(i) 200 hours of classroom and laboratory training in the following areas:

(I) Radiation physics and instrumentation;

(II) Radiation protection;

(III) Mathematics pertaining to the use and measurement of radioactivity; and

(IV) Radiation biology; and

(ii) 500 hours of work experience, under the supervision of an authorized user who meets the requirements in .05(26), (63) or equivalent Agreement State, or Nuclear Regulatory Commission requirements at a medical institution authorized to use byproduct material under Rule .05(55), involving:

(I) Ordering, receiving, and unpacking radioactive materials safely and performing the related radiation surveys;

(II) Checking survey meters for proper operation;

(III) Preparing, implanting, and removing brachytherapy sources;

(IV) Maintaining running inventories of material on hand;

(V) Using administrative controls to prevent a misadministration involving the use of radioactive material; and

(VI) Using emergency procedures to control radioactive material; and

2. Has completed three years of supervised clinical experience in radiation oncology, under an authorized user who meets the requirements in Rule .05(26), .05(63) or equivalent Agreement State or Nuclear Regulatory Commission requirements, as part of a formal training program approved by the Residency Review Committee for Radiation Oncology of the Accreditation Council for Graduate Medical Education or the Royal College of Physicians and Surgeons of Canada or the Committee on Postdoctoral Training of the American Osteopathic Association. This experience may be obtained concurrently with the supervised work experience required by Rule .05(63)(b).1.(ii); and

3. Has obtained written attestation that the individual has satisfactorily completed the requirements in Rules .05(63)(b)1. and (63)(b)2. and is able to independently fulfill the radiation safety-related duties as an authorized user of manual brachytherapy sources for the medical uses authorized under in Rule .05(55).

The signed attestation must be obtained from either:

(i) A preceptor authorized user, who meets the requirements in Rules .05(26) or (63), or equivalent Agreement State or Nuclear Regulatory Commission requirements and has experience in administering dosages in the same dosage category or categories (i.e., in Rule .05(52)(b)1.(ii)(VII)) as the individual requesting authorized user status; or

(ii) A residency program director who affirms in writing that the consensus of the residency program faculty where at least one faculty member is an authorized user who meets the requirements in Rules .05(26) or (63), or equivalent Agreement State or Nuclear Regulatory Commission requirements, have experience in administering dosages in the same dosage category or categories (i.e., in Rule .05(52)(b)1.(ii)(VII)) as the individual requesting authorized user status, and concurs with the attestation provided by the residency program director. The residency training program must be approved by the Residency Review Committee of the Accreditation Council for Graduate Medical Education or the Royal College of Physicians and Surgeons of Canada or the Council on Postdoctoral Training of the American Osteopathic Association and must include training and experience specified in subparagraphs .05(63)(b)1. and 2.

(64) **Training for Ophthalmic Use of Strontium-90.** Except as provided in Rule .05(26), the licensee shall require an authorized user of a strontium-90 source for ophthalmic uses authorized under Rule .05(55) to be a physician who:

(a) Is an authorized user under Rule .05(63) or equivalent Agreement State or Nuclear Regulatory Commission requirements; or,

(b) 1. Has completed 24 hours of classroom and laboratory training applicable to the medical use of strontium-90 for ophthalmic radiotherapy. The training must include:

(i) Radiation physics and instrumentation;

(ii) Radiation protection;

(iii) Mathematics pertaining to the use and measurement of radioactivity; and

(iv) Radiation biology; and

2. Supervised clinical training in ophthalmic radiotherapy under the supervision of an authorized user at a medical institution, clinic, or private practice, and that includes the use of strontium-90 for the ophthalmic treatment of five individuals. This supervised clinical training must involve:

(i) Examination of each individual to be treated;

(ii) Calculation of the dose to be administered;

(iii) Administration of the dose; and

(iv) Follow-up and review of each individual's case history; and

3. Has obtained written attestation, signed by a preceptor authorized user, who meets the requirements in Rule .05(26), .05(63) or .05(64) or equivalent Agreement State or Nuclear Regulatory Commission requirements, that the individual has satisfactorily completed the requirements in Rule .05(64)(b)1. and 2., and is able to independently fulfill the radiation safety-related duties as an authorized user of strontium-90 for ophthalmic use.

(c) Licensees who use strontium-90 for ophthalmic treatments must ensure that certain activities as specified in subparagraph .05(64)(d) are performed by either:

1. An authorized medical physicist; or

2. An individual who:

(i) is identified as an ophthalmic physicist on a specific medical use license issued by the Commission or an Agreement State; permit issued by a Commission or Agreement State broad scope medical use licensee; medical use permit issued by a Commission master material licensee; or permit issued by a Commission master material licensee broad scope medical use permittee; and

(ii) holds a master's or doctor's degree in physics, medical physics, other physical sciences, engineering, or applied mathematics from an accredited college or university; and

(iii) has successfully completed 1 year of full-time training in medical physics and an additional year of full-time work experience under the supervision of a medical physicist; and

(iv) Has documented training in:

(I) The creation, modification, and completion of written directives;

(II) Procedures for administrations requiring a written directive; and

(III) Performing the calibration measurements of brachytherapy sources as detailed in Rule .05(60).

(d) The individuals who are identified in subparagraph .05(64)(c) must:

1. Calculate the activity of each strontium-90 source that is used to determine the treatment times for ophthalmic treatments. The decay must be based on the activity determined under Rule .05(60); and

2. Assist the licensee in developing, implementing, and maintaining written procedures to provide high confidence that the administration is in accordance with the written directive. These procedures must include the frequencies that the individual meeting the requirements in subparagraph .05(64)(c) will observe treatments, review the treatment methodology, calculate treatment time for the prescribed dose, and review records to verify that the administrations were in accordance with the written directives.

(e) Licensees must retain a record of the activity of each strontium-90 source in accordance with Rule .05(105).

Sealed Sources For Diagnosis.

(65) **Use of Sealed Sources and Medical Devices for Diagnosis.**

(a) A licensee must use only sealed sources that are not in medical devices for diagnostic medical uses if the sealed sources are approved in the Sealed Source and Device Registry for diagnostic medicine. The sealed sources may be used for diagnostic medical uses that are not explicitly listed in the Sealed Source and Device Registry but must be used in accordance with the radiation safety conditions and limitations described in the Sealed Source and Device Registry.

(b) A licensee must only use medical devices containing sealed sources for diagnostic medical uses if both the sealed sources and medical devices are approved in the Sealed Source and Device Registry for diagnostic medical uses. The diagnostic medical devices may be used for diagnostic medical uses that are not explicitly listed in the Sealed Source and Device Registry but must be used in accordance with the radiation safety conditions and limitations described in the Sealed Source and Device Registry.

(c) Sealed sources and devices for diagnostic medical uses may be used in research in accordance with an active Investigational Device Exemption (IDE) application accepted by the U.S. Food and Drug Administration provided the requirements of Rule .05(20)(a) are met.

(66) **Training for Use of Sealed Sources for Diagnosis and Medical Devices for Diagnosis.** Except as provided in Rule .05(26), the licensee shall require the authorized user of a diagnostic sealed source for the use in a device authorized under Rule .05(65) to be a physician, dentist, or podiatrist who:

(a) Is certified by a specialty board whose certification process includes all of the requirements in Rules .05(66)(c) and .05(66)(d) and whose certification has been recognized by an Agreement State or the Nuclear Regulatory Commission. (The names of board certifications that have been recognized by the Nuclear Regulatory Commission or an Agreement State will be posted on the NRC's Web page.); or

(b) Is an authorized user for uses listed in Rule .05(44) or equivalent Agreement State or Nuclear Regulatory Commission requirements; or

(c) Has had 8 hours of classroom and laboratory training in basic radionuclide handling techniques specifically applicable to the use of the device that includes:

1. Radiation physics and instrumentation;

2. Radiation protection;

3. Mathematics pertaining to the use and measurement of radioactivity; and

4. Radiation biology; and

(d) Has completed training in the use of the device for the uses requested.

Photon-Emitting Remote Afterloader Units, Teletherapy Units, and Gamma Stereotactic Radiosurgery Units.

(67) **Use of Sealed Sources in a Remote Afterloader Unit, Teletherapy Unit, or Gamma Stereotactic Radiosurgery Unit.**

(a) A licensee must only use sealed sources:

1. Approved and as provided for in the Sealed Source and Device Registry in photon emitting remote afterloader units, teletherapy units, or gamma stereotactic radiosurgery units to deliver therapeutic doses for medical uses: or

2. In research involving photon-emitting remote afterloader units, teletherapy units, or gamma stereotactic radiosurgery units in accordance with an active Investigational Device Exemption (IDE) application accepted by the U.S. Food and Drug Administration provided the requirements of Rule .05(21)(a) are met.

(b) A licensee must use photon-emitting remote afterloader units, teletherapy units, or gamma stereotactic radiosurgery units:

1. Approved in the Sealed Source and Device Registry to deliver a therapeutic dose for medical use. These devices may be used for therapeutic medical treatments that are not explicitly provided for in the Sealed Source and Device Registry, but must be used in accordance with radiation safety conditions and limitations described in the Sealed Source and Device Registry; or

2. In research in accordance with an active Investigational Device Exemption (IDE) application accepted by the FDA provided the requirements of Rule .05(21)(a) are met.

(68) **Surveys of Patients and Human Research Subjects Treated with a Remote Afterloader Unit.**

(a) Before releasing a patient or a human research subject from licensee control, a licensee shall make a survey of the patient or the human research subject and the remote afterloader unit with a portable radiation detection survey instrument to confirm that the source(s) has been removed from the patient or human research subject and returned to the safe, shielded position.

(b) A licensee shall retain a record of the surveys in accordance with Rule .05(102).

(69) **Installation, Maintenance, Adjustment, and Repair.**

(a) Only a person specifically licensed by the Director, the Nuclear Regulatory Commission or an Agreement State shall install, maintain, adjust, or repair a remote afterloader unit, teletherapy unit, or gamma stereotactic radiosurgery unit that involves work on the source(s) shielding, the source(s) driving unit, or other electronic or mechanical component that could expose the source(s), reduce the shielding around the source(s), or compromise the radiation safety of the unit or the source(s).

(b) Except for low dose-rate remote afterloader units, only a person specifically licensed by the Director, an Agreement State or the Nuclear Regulatory Commission shall install, replace, relocate, or remove a sealed source or source contained in other remote afterloader units, teletherapy units, or gamma stereotactic units.

(c) For a low dose-rate remote afterloader unit, only a person specifically licensed by the Director, an Agreement State or the Nuclear Regulatory Commission, or an authorized medical physicist shall install, replace, relocate, or remove a sealed source(s) contained in the unit.

(d) A licensee shall retain a record of the installation, maintenance, adjustment and repair done on remote afterloader units, teletherapy units, and gamma stereotactic radiosurgery units in accordance with Rule .05(106).

(70) **Safety Procedures and Instructions for Remote Afterloader Units, Teletherapy Units, and Gamma Stereotactic Radiosurgery Units.**

(a) A licensee shall:

1. Secure the unit, the console, the console keys, and the treatment room when not in use or when unattended;

2. Permit only individuals approved by the authorized user, Radiation Safety Officer, or authorized medical physicist to be present in the treatment room during treatment with the source(s);

3. Prevent dual operation of more than one radiation producing device in a treatment room, if applicable; and

4. Develop, implement, and maintain written procedures for responding to an abnormal situation when the operator is unable to place the source(s) in the shielded position, or remove the patient or human research subject from the radiation field with controls from outside the treatment room. This procedure must include:

(i) Instructions for responding to equipment failures and the names of the individuals responsible for implementing corrective actions;

(ii) The process for restricting access to and posting of the treatment area to minimize the risk of inadvertent exposure; and

(iii) The names and telephone numbers of the authorized users, the authorized medical physicist, and the Radiation Safety Officer to be contacted if the unit or console operates abnormally.

(b) A copy of the procedures required by Rule .05(70)(a)4. must be physically located at the unit console.

(c) A licensee shall post instructions at the unit console to inform the operator of:

1. The location of the procedures required by Rule .05(70)(a)4.; and

2. The names and telephone numbers of the authorized users, the authorized medical physicist, and the Radiation Safety Officer to be contacted if the unit or console operates abnormally.

(d) 1. Prior to the first use for patient treatment of a new unit or an existing unit with a manufacturer upgrade that affects the operation and safety of the unit, a licensee shall ensure that vendor operational and safety training is provided to all individuals who will operate the unit. The vendor operational and safety training must be provided by the device manufacturer or by an individual certified by the device manufacturer to provide the operational and safety training.

2. A licensee shall provide operational and safety instructions initially and at least annually to all individuals who operate the unit at the facility, as appropriate to the individual's assigned duties. The instructions shall include instruction in:

(i) The procedures identified in Rule .05(70)(a)4.; and

(ii) The operating procedures for the unit.

(e) A licensee shall ensure that operators, authorized medical physicists, and authorized users participate in drills of the emergency procedures, initially and at least annually.

(f) A licensee shall retain a record of individuals receiving instruction required by Rule .05(70)(d), in accordance with Rule .05(101).

(g) A licensee shall retain a copy of the procedures required by subparagraphs .05(70)(a)4. and (d)2.(ii).

(71) **Safety Precautions for Remote Afterloader Units, Teletherapy Units, and Gamma Stereotactic Radiosurgery Units.**

(a) A licensee shall control access to the treatment room by a door at each entrance.

(b) A licensee shall equip each entrance to the treatment room with an electrical interlock system that will:

1. Prevent the operator from initiating the treatment cycle unless each treatment room entrance door is closed;

2. Cause the source(s) to be shielded promptly when an entrance door is opened; and

3. Prevent the source(s) from being exposed following an interlock interruption until all treatment room entrance doors are closed and the source(s) on-off control is reset at the console.

(c) A licensee shall require any individual entering the treatment room to assure, through the use of appropriate radiation monitors, that radiation levels have returned to ambient levels.

(d) Except for low-dose remote afterloader units, a licensee shall construct or equip each treatment room with viewing and intercom systems to permit continuous observation of the patient or the human research subject from the treatment console during irradiation.

(e) For licensed activities where sources are placed within the patient's or human research subject's body, a licensee shall only conduct treatments which allow for expeditious removal of a decoupled or jammed source.

(f) In addition to the requirements specified in Rule .05(71)(a) through (71)(e), a licensee shall:

1. For low dose-rate, medium dose-rate, and pulsed dose-rate remote afterloader units, require:

(i) An authorized medical physicist and either an authorized user or a physician, under the supervision of an authorized user, who has been trained in the operation and emergency response for the unit to be physically present during the initiation of all patient treatments involving the unit; and

(ii) An authorized medical physicist and either an authorized user or an individual, under the supervision of an authorized user, who has been trained to remove the source applicator(s) in the event of an emergency involving the unit, to be immediately available during continuation of all patient treatments involving the unit.

2. For high dose-rate remote afterloader unit, require:

(i) An authorized user and an authorized medical physicist to be physically present during the initiation of all patient treatments involving the unit; and

(ii) An authorized medical physicist and either an authorized user or a physician, under the supervision of an authorized user, who has been trained in the operation and emergency response for the unit, to be physically present during continuation of all patient treatments involving the unit.

3. For gamma stereotactic radiosurgery units, require an authorized user and an authorized medical physicist to be physically present throughout all patient treatments involving the unit.

4. Notify the Radiation Safety Officer, or his or her designee, and an authorized user as soon as possible, if the patient or human research subject has a medical emergency and, immediately, if the patient dies.

(g) A licensee shall have emergency response equipment available near each treatment room, to respond to a source that inadvertently:

1. Remains in the unshielded position; or

2. Lodges within the patient following completion of the treatment.

(72) **Dosimetry Equipment.**

(a) Except for low dose-rate remote afterloader sources where the source output or activity is determined by the manufacturer, a licensee shall have a calibrated dosimetry system available for use. To satisfy this requirement, one of the following two conditions must be met:

1. The system must have been calibrated using a system or source traceable to the National Institute of Standards and Technology (NIST) and published protocols accepted by nationally recognized bodies; or by a calibration

laboratory accredited by the American Association of Physicists in Medicine (AAPM). The calibration must have been performed within the previous 2 years and after any servicing that may have affected system calibration; or

2. The system must have been calibrated within the previous 4 years;18 to 30 months after that calibration, the system must have been inter-compared with another dosimetry system that was calibrated within the past 24 months by NIST or by a calibration laboratory accredited by the AAPM. The results of the inter-comparison must have indicated that the calibration factor of the licensee's system had not changed by more than 2 percent. The licensee may not use the inter-comparison result to change the calibration factor. When inter-comparing dosimetry systems to be used for calibrating sealed sources for therapeutic units, the licensee shall use a comparable unit with beam attenuators or collimators, as applicable, and sources of the same radionuclide as the source used at the licensee's facility.

(b) The licensee shall have available for use a dosimetry system for spot-check output measurements, if applicable. To satisfy this requirement, the system may be compared with a system that has been calibrated in accordance with Rule .05(72)(a). This comparison must have been performed within the previous year and after each servicing that may have affected system calibration. The spot-check system may be the same system used to meet the requirement in Rule .05(72)(a).

(c) The licensee shall retain a record of each calibration, inter-comparison, and comparison in accordance with Rule .05(107).

(73) **Full Calibration Measurements on Teletherapy Units.**

(a) A licensee authorized to use a teletherapy unit for medical use shall perform full calibration measurements on each teletherapy unit:

1. Before the first medical use of the unit; and

2. Before medical use under the following conditions:

(i) Whenever spot-check measurements indicate that the output differs by more than 5 percent from the output obtained at the last full calibration corrected mathematically for radioactive decay;

(ii) Following replacement of the source or following reinstallation of the teletherapy unit in a new location;

(iii) Following any repair of the teletherapy unit that includes removal of the source or major repair of the components associated with the source exposure assembly; and

3. At intervals not exceeding 1 year.

(b) To satisfy the requirement of Rule .05(73)(a), full calibration measurements must include determination of:

1. The output within +/-3 percent for the range of field sizes and for the distance or range of distances used for medical use;

2. The coincidence of the radiation field and the field indicated by the light beam localizing device;

3. The uniformity of the radiation field and its dependence on the orientation of the useful beam;

4. Timer accuracy and linearity over the range of use;

5. On-off error; and

6. The accuracy of all distance measuring and localization devices in medical use.

(c) A licensee shall use the dosimetry system described in Rule .05(72)(a) to measure the output for one set of exposure conditions. The remaining radiation measurements required in Rule .05(73)(b)1. may be made using a dosimetry system that indicates relative dose rates.

(d) A licensee shall make full calibration measurements required by Rule .05(73)(a) in accordance with published protocols accepted by nationally recognized bodies.

(e) A licensee shall mathematically correct the outputs determined in Rule .05(73)(b)1. for physical decay for intervals not exceeding 1 month for cobalt-60, 6 months for cesium-137, or at intervals consistent with 1 percent decay for all other nuclides.

(f) Full calibration measurements required by Rule .05(73)(a) and physical decay corrections required by Rule .05(73)(e) must be performed by the authorized medical physicist.

(g) A licensee shall retain a record of each calibration in accordance with Rule .05(108).

(74) **Full Calibration Measurements on Remote Afterloader Units.**

(a) A licensee authorized to use a remote afterloader unit for medical use shall perform full calibration measurements on each unit:

1. Before the first medical use of the unit;

2. Before medical use under the following conditions:

(i) Following replacement of the source or following reinstallation of the unit in a new location outside the facility; and

(ii) Following any repair of the unit that includes removal of the source or major repair of the components associated with the source exposure assembly;

3. At intervals not exceeding 1 quarter for high dose-rate, medium dose-rate, and pulsed dose-rate remote afterloader units with sources whose half-life exceeds 75 days; and

4. At intervals not exceeding 1 year for low dose-rate remote afterloader units.

(b) To satisfy the requirement of Rule .05(74)(a), full calibration measurements must include, as applicable, determination of:

1. The output within +/- 5 percent;

2. Source positioning accuracy to within +/- 1 millimeter;

3. Source retraction with backup battery upon power failure; and

4. Length of the source transfer tubes;

5. Timer accuracy and linearity over the typical range of use;

6. Length of the applicators; and

7. Function of the source transfer tubes, applicators, and transfer tube-applicator interfaces.

(c) In addition to the requirements for full calibrations for low dose-rate remote afterloader units in Rule .05(74)(b), a licensee shall perform an autoradiograph of the source(s) to verify inventory and source(s) arrangement at intervals not exceeding one quarter.

(d) A licensee shall use the dosimetry system described in Rule .05(72)(a) to measure the output.

(e) A licensee shall make full calibration measurements required by Rule .05(74)(a) in accordance with published protocols accepted by nationally recognized bodies.

(f) For low dose-rate remote afterloader units, a licensee may use measurements provided by the source manufacturer that are made in accordance with Rule .05(74)(a) through (74)(e).

(g) A licensee shall mathematically correct the outputs determined in Rule .05(74)(b)1. of this section for physical decay at intervals consistent with 1 percent physical decay.

(h) Full calibration measurements required by Rule .05(74)(a) and physical decay corrections required by Rule .05(74)(g) must be performed by the authorized medical physicist.

(i) A licensee shall retain a record of each calibration in accordance with Rule .05(108).

(75) **Full Calibration Measurements on Gamma Stereotactic Radiosurgery Units.**

(a) A licensee authorized to use a gamma stereotactic radiosurgery unit for medical use shall perform full calibration measurements on each unit:

1. Before the first medical use of the unit;

2. Before medical use under the following conditions:

(i) Whenever spot-check measurements indicate that the output differs by more than 5 percent from the output obtained at the last full calibration corrected mathematically for radioactive decay;

(ii) Following replacement of the sources or following reinstallation of the gamma stereotactic radiosurgery unit in a new location; and

(iii) Following any repair of the gamma stereotactic radiosurgery unit that includes removal of the sources or major repair of the components associated with the source assembly; and

3. At intervals not exceeding 1 year, with the exception that relative helmet factors need only be determined before the first medical use of a helmet and following any damage to a helmet.

(b) To satisfy the requirement of Rule .05(75)(a), full calibration measurements must include determination of:

1. The output within +/-3 percent;

2. Relative helmet factors;

3. Isocenter coincidence;

4. Timer accuracy and linearity over the range of use;

5. On-off error;

6. Trunnion centricity;

7. Treatment table retraction mechanism, using backup battery power or hydraulic backups with the unit off;

8. Helmet microswitchs;

9. Emergency timing circuits; and

10. Stereotactic frames and localizing devices (trunnions).

(c) A licensee shall use the dosimetry system described in Rule .05(72)(a) to measure the output for one set of exposure conditions. The remaining radiation measurements required in Rule .05(75)(b)1. may be made using a dosimetry system that indicates relative dose rates.

(d) A licensee shall make full calibration measurements required by Rule .05(75)(a) in accordance with published protocols accepted by nationally recognized bodies.

(e) A licensee shall mathematically correct the outputs determined in Rule .05(75)(b)1. at intervals not exceeding 1 month for cobalt-60 and at intervals consistent with 1 percent physical decay for all other radionuclides.

(f) Full calibration measurements required by Rule .05(75)(a) and physical decay corrections required by Rule .05(75)(e) must be performed by the authorized medical physicist.

(g) A licensee shall retain a record of each calibration in accordance with Rule .05(108).

(76) **Periodic Spot-Checks for Teletherapy Units.**

(a) A licensee authorized to use teletherapy units for medical use shall perform output spot-checks on each teletherapy unit once in each calendar month that include determination of:

1. Timer accuracy, and timer linearity over the range of use;

2. On-off error;

3. The coincidence of the radiation field and the field indicated by the light beam localizing device;

4. The accuracy of all distance measuring and localization devices used for medical use;

5. The output for one typical set of operating conditions measured with the dosimetry system described in Rule .05(72)(b); and

6. The difference between the measurement made in Rule .05(76)(a)5. and the anticipated output, expressed as a percentage of the anticipated output (i.e., the value obtained at last full calibration corrected mathematically for physical decay).

(b) A licensee shall perform measurements required by Rule .05(76)(a) in accordance with procedures established by the authorized medical physicist. That individual need not actually perform the spot check measurements.

(c) A licensee shall have the authorized medical physicist review the results of each spot-check within 15 days. The authorized medical physicist shall promptly notify the licensee in writing of the results of each spot-check.

(d) A licensee authorized to use a teletherapy unit for medical use shall perform safety spot-checks of each teletherapy facility once in each calendar month and after each source installation to assure proper operation of:

1. Electrical interlocks at each teletherapy room entrance;

2. Electrical or mechanical stops installed for the purpose of limiting use of the primary beam of radiation (restriction of source housing angulation or elevation, carriage or stand travel and operation of the beam on-off mechanism);

3. Source exposure indicator lights on the teletherapy unit, on the control console, and in the facility;

4. Viewing and intercom systems;

5. Treatment room doors from inside and outside the treatment room; and

6. Electrically assisted treatment room doors with the teletherapy unit electrical power turned off.

(e) If the results of the checks required in Rule .05(76)(d) indicate the malfunction of any system, a licensee shall lock the control console in the off position and not use the unit except as may be necessary to repair, replace, or check the malfunctioning system.

(f) A licensee shall retain a record of each spot-check required by Rule .05(76)(a) and (76)(d), in accordance with Rule .05(109).

(77) **Periodic Spot-Checks for Remote Afterloader Units.**

(a) A licensee authorized to use remote afterloader units for medical use shall perform spot-checks of each remote afterloader facility and on each unit:

1. At the beginning of each day of use of a high dose-rate, medium dose-rate or pulsed dose-rate remote afterloader unit;

2. Prior to each patient treatment with a low dose-rate remote afterloader unit; and

3. After each source installation.

(b) The licensee shall have the authorized medical physicist establish written procedures for performing the spot-checks required in Rule .05(77)(a). The authorized medical physicist need not actually perform the spot-check measurements.

(c) A licensee shall have the authorized medical physicist review the results of each spot-check within 15 days. The authorized medical physicist shall notify the licensee as soon as possible in writing of the results of each spot check.

(d) To satisfy the requirements of Rule .05(77)(a), spot-checks must, at a minimum, assure proper operation of:

1. Electrical interlocks at each remote afterloader unit room entrance;

2. Source exposure indicator lights on the remote afterloader unit, on the control console, and in the facility;

3. Viewing and intercom systems in each high dose-rate, medium dose-rate and pulsed dose-rate remote afterloader facility;

4. Emergency response equipment;

5. Radiation monitors used to indicate the source position;

6. Timer accuracy;

7. Clock (date and time) in the unit's computer; and

8. Decayed source(s) activity in the unit's computer.

(e) If the results of the checks required in Rule .05(77)(d) indicate the malfunction of any system, a licensee shall lock the control console in the off position and not use the unit except as may be necessary to repair, replace, or check the malfunctioning system.

(f) A licensee shall retain a record of each check required by Rule .05(77)(d) in accordance with Rule .05(110).

(78) **Periodic Spot-Checks for Gamma Stereotactic Radiosurgery Units.**

(a) A licensee authorized to use a gamma stereotactic radiosurgery unit for medical use shall perform spot-checks of each gamma stereotactic radiosurgery facility and on each unit:

1. Monthly;

2. At the beginning of each day of use; and

3. After each source installation.

(b) The licensee shall have the authorized medical physicist:

1. Establish written procedures for performing the spot-checks required in Rule .05(78)(a); and

2. Review the results of each spot-check required by Rule .05(78)(a)1. within 15 days of the check. The authorized medical physicist need not actually perform the spot-check measurements.

(c) To satisfy the requirements of Rule .05(78)(a)1., spot-checks must, at a minimum:

1. Assure proper operation of:

(i) Treatment table retraction mechanism, using backup battery power or hydraulic backups with the unit off;

(ii) Helmet microswitchs;

(iii) Emergency timing circuits; and

(iv) Stereotactic frames and localizing devices (trunnions).

2. Determine:

(i) The output for one typical set of operating conditions measured with the dosimetry system described in Rule .05(72)(b);

(ii) The difference between the measurement made in Rule .05(78)(c)2.(i) of this section and the anticipated output, expressed as a percentage of the anticipated output (i.e., the value obtained at last full calibration corrected mathematically for physical decay);

(iii) Source output against computer calculation;

(iv) Timer accuracy and linearity over the range of use;

(v) On-off error; and

(vi) Trunnion centricity.

(d) To satisfy the requirements of Rule .05(78)(a)2. and (78)(a)3., spot-checks must assure proper operation of:

1. Electrical interlocks at each gamma stereotactic radiosurgery room entrance;

2. Source exposure indicator lights on the gamma stereotactic radiosurgery unit, on the control console, and in the facility;

3. Viewing and intercom systems;

4. Timer termination;

5. Radiation monitors used to indicate room exposures; and

6. Emergency off buttons.

(e) A licensee shall arrange for prompt repair of any system identified in Rule .05(78)(c) that is not operating properly.

(f) If the results of the checks required in Rule .05(78)(d) indicate the malfunction of any system, a licensee shall lock the control console in the off position and not use the unit except as may be necessary to repair, replace, or check the malfunctioning system.

(g) A licensee shall retain a record of each check required by Rule .05(78)(c) and (78)(d) in accordance with Rule .05(111).

(79) **Additional Technical Requirements for Mobile Remote Afterloader Units.**

(a) A licensee providing mobile remote afterloader service shall:

1. Check survey instruments before medical use at each address of use or on each day of use, whichever is more frequent; and

2. Account for all sources before departure from a client's address of use.

(b) In addition to the periodic spot-checks required by Rule .05(77), a licensee authorized to use mobile afterloaders for medical use shall perform checks on each remote afterloader unit before use at each address of use. At a minimum, checks must be made to verify the operation of:

1. Electrical interlocks on treatment area access points;

2. Source exposure indicator lights on the remote afterloader unit, on the control console, and in the facility;

3. Viewing and intercom systems;

4. Applicators, source transfer tubes, and transfer tube-applicator interfaces;

5. Radiation monitors used to indicate room exposures;

6. Source positioning (accuracy); and

7. Radiation monitors used to indicate whether the source has returned to a safe shielded position.

(c) In addition to the requirements for checks in Rule .05(79)(b), a licensee shall ensure overall proper operation of the remote afterloader unit by conducting a simulated cycle of treatment before use at each address of use.

(d) If the results of the checks required in Rule .05(79)(b) indicate the malfunction of any system, a licensee shall lock the control console in the off position and not use the unit except as may be necessary to repair, replace, or check the malfunctioning system.

(e) A licensee shall retain a record of each check required by Rule .05(79)(b) in accordance with Rule .05(112).

(80) **Radiation Surveys.**

(a) In addition to the survey requirements in Rule .03(8) of this Chapter, a person licensed pursuant to Rule .05 shall make surveys to ensure that the maximum radiation levels and average radiation levels from the surface of the main source safe with the source(s) in the shielded position does not exceed the levels stated in the Sealed Source and Device Registry.

(b) The licensee shall make the survey required by Rule .05(80)(a) at installation of a new source and following repairs to the source(s) shielding, the source(s) driving unit, or other electronic or mechanical component that could expose the source, reduce the shielding around the source(s), or compromise the radiation safety of the unit or the source(s).

(c) A licensee shall retain a record of the radiation surveys required by Rule .05(80)(a) of this section in accordance with Rule .05(113).

(81) **Five-Year Inspection for Teletherapy and Gamma Stereotactic Radiosurgery Units.**

(a) A licensee shall have each teletherapy unit and gamma stereotactic radiosurgery unit fully inspected and serviced during source replacement or at intervals not to exceed 5 years, whichever comes first, to assure proper functioning of the source exposure mechanism and other safety components.

(b) This inspection and servicing may only be performed by persons specifically licensed to do so by the Director, an Agreement State or the Nuclear Regulatory Commission.

(c) A licensee shall keep a record of the inspection and servicing in accordance with Rule .05(114).

(82) **Therapy-Related Computer Systems.** The licensee shall perform acceptance testing on the treatment planning system in accordance with published protocols accepted by nationally recognized bodies. At a minimum, the acceptance testing must include, as applicable, verification of:

(a) The source-specific input parameters required by the dose calculation algorithm;

(b) The accuracy of dose, dwell time, and treatment time calculations at representative points;

(c) The accuracy of isodose plots and graphic displays;

(d) The accuracy of the software used to determine radioactive source positions from radiographic images; and

(e) The accuracy of electronic transfer of the treatment delivery parameters to the treatment delivery unit from the treatment planning system.

(83) **Possession of Survey Instruments.** A licensee authorized to use radioactive material in remote afterloader units, teletherapy units, and gamma stereotactic radiosurgery units shall possess a portable radiation detection survey instrument capable of detecting dose rates over the range of 1 microsievert (0.1 mrem) per hour to 500 microsievert (50 mrem) per hour, and a portable radiation measurement survey instrument capable of measuring dose rates over the range 10 microsievert (1 mrem) per hour to 10 millisievert (1,000 mrem) per hour. The instruments shall be operable and calibrated in accordance with Rule .05(30).

(84) **Training for Use of Remote Afterloader Units, Teletherapy Units, and Gamma Stereotactic Radiosurgery Units.** Except as provided in Rule .05(26), the licensee shall require an authorized user of a sealed source for a use authorized under Rule .05(67) to be a physician who:

(a) Is certified by a medical specialty board whose certification has been recognized by the Division, an Agreement State or the Nuclear Regulatory Commission, and who meets the requirements in .05(84)(c). (The names of board certifications that have been recognized by the Nuclear Regulatory Commission or an Agreement State will be posted on the NRC's web page.) To have its certification process recognized, a specialty board shall require all candidates for certification to:

1. Successfully complete a minimum of 3 years of residency training in a radiation therapy program approved by the Residency Review Committee of the Accreditation Council for Graduate Medical Education or the Royal College of Physicians and Surgeons of Canada or the Committee on Post-Graduate Training of the American Osteopathic Association; and

2. Pass an examination, administered by diplomates of the specialty board, which tests knowledge and competence in radiation safety, radionuclide handling, treatment planning, quality assurance, and clinical use of stereotactic radiosurgery, remote afterloaders and external beam therapy; or

(b) 1. Has completed a structured educational program in basic radionuclide techniques applicable to the use of a sealed source in a therapeutic medical unit that includes:

(i) 200 hours of classroom and laboratory training in the following areas:

(I) Radiation physics and instrumentation;

(II) Radiation protection;

(III) Mathematics pertaining to the use and measurement of radioactivity; and

(IV) Radiation biology; and

(ii) 500 hours of work experience, under the supervision of an authorized user who meets the requirements in Rule .05(26), .05(84) or equivalent Agreement State, or Nuclear Regulatory Commission requirements at a medical institution that is authorized to use radioactive materials in Rule .05(67), involving:

(I) Reviewing full calibration measurements and periodic spot checks;

(II) Preparing treatment plans and calculating treatment doses and times;

(III) Using administrative controls to prevent a misadministration involving the use of radioactive material;

(IV) Implementing emergency procedures to be followed in the event of the abnormal operation of the medical unit or console;

(V) Checking and using survey meters; and

(VI) Selecting the proper dose and how it is to be administered; and

2. Has completed three years of supervised clinical experience in radiation oncology, under an authorized user who meets the requirements in Rule .05(26), .05(84) or equivalent Agreement State or Nuclear Regulatory Commission requirements, as part of a formal training program approved by the Residency Review Committee for Radiation Oncology of the Accreditation Council for Graduate Medical Education or the Royal College of Physicians and Surgeons of Canada or the Committee on Postdoctoral Training of the American Osteopathic Association. This experience may be obtained concurrently with the supervised work experience required by Rule .05(84)(b)1.(ii); and

3. Has obtained written attestation that the individual has satisfactorily completed the requirements in Rule .05(84)(b)1. and .05(84)(b)2., and .05(84)(c), and is able to independently fulfill the radiation safety-related duties as an authorized user of each type of therapeutic medical unit for which the individual is requesting authorized user status; and

The signed attestation must be obtained from either:

(i) A preceptor authorized user, who meets the requirements in Rules .05(26), (84), or equivalent Agreement State or Nuclear Regulatory Commission requirements; or

(ii) A residency program director who affirms in writing that the consensus of the residency program faculty where at least one faculty member is an authorized user who meets the requirements in Rules .05(26), (84), or equivalent Agreement State or Nuclear Regulatory Commission requirements, and concurs with the attestation provided by the residency program director. The residency training program must be approved by the Residency Review Committee of the Accreditation Council for Graduate Medical Education or the Royal College of Physicians and Surgeons of Canada or the Council on Postdoctoral Training of the American Osteopathic Association and must include training and experience specified in subparagraphs .05(63)(b)1. and 2.

(c) Has received training in device operation, safety procedures, and clinical use for the type(s) of use for which authorization is sought. This training requirement may be satisfied by satisfactory completion of a training program provided by the vendor for new users or by receiving training supervised by an authorized user or authorized medical physicist, as appropriate, who is authorized for the type(s) of use for which the individual is seeking authorization.

Other Medical Uses of Radioactive Material or Radiation from Radioactive Material.

(85) **Other Medical Uses of Radioactive Material or Radiation From Radioactive Material.** A licensee may use radioactive material or a radiation source approved for medical use that is not specifically addressed in Rule .05 if:

(a) The applicant or licensee has submitted the information required by Rule .05(8)(b), (8)(c) and (8)(d); and

(b) The applicant or licensee has received written approval from the NRC or an Agreement State in a license and uses the material in accordance with the regulations and specific conditions the NRC or Agreement State considers necessary for the medical use of the material.

Records.

(86) **Records of Authority and Responsibilities for Radiation Protection Programs.**

(a) A licensee shall retain a record of actions taken by the licensee's management in accordance with Rule .05(15)(a) for 5 years. The record must include a summary of the actions taken and a signature of licensee management.

(b) The licensee shall retain a current copy of the authorities, duties and responsibilities of the Radiation Safety Officer as required by Rule .05(15)(d), and a signed copy of the Radiation Safety Officer's agreement to be responsible for implementing the radiation safety program, as required by Rule .05(15)(b). The record must include the signature of the Radiation Safety Officer and licensee management.

(c) The minutes of each Radiation Safety Committee meeting held in accordance with Rule .05(15)(g) shall include:

1. The date of the meeting;

2. Members present;

3. Members absent; and

4. Summary of deliberations and discussions.

(87) **Records of Radiation Protection Program Safety Changes.** A licensee shall retain a record of each radiation protection program change made in accordance with Rule .05(16)(a) for 5 years. The record must include a copy of the old and new procedures; the effective date of the change; and the signature of the licensee management that reviewed and approved the change.

(88) **Records of Written Directives.** A licensee shall retain a copy of each written directive as required by Rule .05(19) for 3 years.

(89) **Records of Misadministrations.** A licensee shall retain a record of misadministrations reported in accordance with Rule .05(115) for 3 years. The record must contain the licensee's name; names of the individuals involved; the social security number or other identification number if one has been assigned, of the individual who is the subject of the misadministration; a brief description of the event; why it occurred; the effect, if any, on the individual; the actions, if any, taken, or planned, to prevent recurrence; and, whether the licensee notified the individual (or the individual's responsible relative or guardian) and, if not, whether such failure to notify was based on guidance from the referring physician.

(90) **Record of a Dose to an Embryo/Fetus or a Nursing Child.** A licensee shall retain a record of a dose to an embryo/fetus or a nursing child reported in accordance with Rule .05(116) for 3 years. The record must contain the licensee's name; names of all the individuals involved; social security number or other identification number if one has been assigned to the pregnant individual or nursing child who is the subject of the event; a brief description of the event; why it occurred; the effect, if any, on the embryo/fetus or nursing child; the actions, if any, taken, or planned, to prevent recurrence; and whether the licensee notified the pregnant individual or mother (or the mother's or child's responsible relative or guardian) and, if not, whether such failure to notify was based on guidance from the referring physician.

(91) **Records of Calibrations of Instruments Used to Measure the Activity of Unsealed Radioactive Material.** A licensee shall maintain a record of instrument calibrations required by Rule .05(29) for 3 years. The records must include the model and serial number of the instrument, the date of the calibration, the results of the calibration, and the name of the individual who performed the calibration.

(92) **Records of Survey Instrument Calibrations.** A licensee shall maintain a record of instrument calibrations required by Rule .05(30) for 3 years. The record must include the model and serial number of the instrument, the date of the calibration, the results of the calibration, and the name of the individual who performed the calibration.

(93) **Records of Dosages of Unsealed Radioactive Material for Medical Use.** A licensee shall maintain a record of dosage determinations required by Rule .05(31) for 3 years. The record must contain the radioactive drug; the patient's or human research subject's name, or identification number if one has been assigned; prescribed dosage; the determined dosage, or a notation that the total activity is less than 1.11 MBq (30 µCi); the date and time of the dosage determination; and the name of the individual who determined the dosage.

(94) **Records of Possession of Sealed Sources and Brachytherapy Sources.** A licensee shall retain a record of the semi-annual physical inventory of sealed sources and brachytherapy sources required by Rule .05(33)(d) for 3 years. The inventory record must contain the model number of each source, and serial number if one has been assigned, the identity of each source radionuclide and its nominal activity, the location of each source, and the name of the individual who performed the inventory.

(95) **Records of Surveys for Ambient Radiation Exposure Rate.** A licensee shall retain a record of each survey required by Rule .05(36) for 3 years. The record must include the date of the survey, the results of the survey, the instrument used to make the survey, and the name of the individual who performed the survey.

(96) **Records of the Release of Individuals Containing Radioactive Drugs or Implants Containing Radioactive Material.**

(a) A licensee shall retain a record, signed by the authorized user, of the basis for authorizing the release of an individual, for 3 years after the date of release,

(b) A licensee shall retain a record, for 3 years after the date of release, that the instructions required by Rule .05(37)(b) were provided to a breast-feeding woman.

(97) **Records of Administrative and Technical Requirements that Apply to the Provision of Mobile Services.**

(a) A licensee shall retain a copy of the letter(s) that permits the use of radioactive material at a client's address of use, as required by Rule .05(9)(b), for 3 years after the last provision of service.

(b) A licensee shall retain the record of each survey required by Rule .05(38)(f) for 3 years. The record must include the date of the survey, the results of the survey, the instrument used to make the survey, and the name of the individual who performed the survey.

(98) **Records of Decay-in-Storage.** A licensee shall maintain records of the disposal of licensed materials, as required by Rule .05(40), for 3 years. The record must include the date of the disposal, the survey instrument used, the background radiation level, the radiation level measured at the surface of each waste container, and the name of the individual who performed the survey.

(99) **Records of Radionuclide Purity.** A licensee shall maintain a record of the radionuclide contaminant concentration tests required by Rule .05(45) for 3 years. The record must include, for each measured elution of radionuclide used to prepare a radioactive drug, the ratio of the measures expressed as kilobecquerel of contaminant per megabecquerel of desired radionuclide (microcurie/millicurie), or microgram of contaminant per megabecquerel of desired radionuclide (microgram/millicurie), the time and date of the measurement, and the name of the individual who made the measurement.

(100) **Records of Training.** A licensee shall maintain records of training required by Rule .05(25) for 3 years after the last date an individual was authorized to act as a nuclear medicine technologist or radiation therapist at the licensee's facility.

(101) **Records of Safety Instruction and Training.** A licensee shall maintain a record of safety instructions and training required by Rules .05(49), (58) and (70) for 3 years. The record must include a list of the topics covered, the date of the instruction or training, the name(s) of the attendee(s), and the name(s) of the individual(s) who provided the instruction.

(102) **Records of Radiation Surveys of Patients and Human Research Subjects.** A licensee shall maintain a record of the surveys required by Rule .05(56) and (68) for 3 years. Each record must include the date and results of the survey, the survey instrument used, and the name of the individual who made the survey.

(103) **Records of Brachytherapy Source Inventory.**

(a) A licensee shall maintain a record of brachytherapy source accountability required by Rule .05(57) for 3 years.

(b) For temporary implants, the record must include:

1. The number and activity of sources removed from storage, the time and date they were removed from storage, the name of the individual who removed them from storage, and the location of use;

2. The number and activity of unused sources returned to storage, the time and date they were returned to storage, and the name of the individual who returned them to storage; and

3. The number and activity of temporarily implanted sources removed from the patient or human research subject, the time and date they were returned to storage, and the name of the individual who returned them to storage.

(c) For permanent implants, the record must include:

1. The number and activity of sources removed from storage, the date they were removed from storage, and the name of the individual who removed them from storage;

2. The number and activity of sources not implanted, the date they were returned to storage, and the name of the individual who returned them to storage; and

3. The number and activity of sources permanently implanted in the patient or human research subject.

(104) **Records of Calibration Measurements on Brachytherapy Sources.** A licensee shall maintain a record of the calibrations on brachytherapy sources required by Rule .05(60) for 3 years after the last use of the source. The

record must include the date of the calibration; the manufacturer's name, model number, and serial number for the source and the instruments used to calibrate the source; the source output or activity; source positioning accuracy within applicators; and the signature of the authorized medical physicist.

(105) **Records of Decay of Strontium-90 Sources for Ophthalmic Treatments.** The licensee shall maintain a record of the activity of a strontium 90 source required by Rule .05(60) for the life of the source. The record must include the date and initial activity of the source as determined under Rule .05(60), and for each decay calculation, the date, and the source activity and the signature of the authorized medical physicist.

(106) **Records of Installation, Maintenance, Adjustment, and Repair.** A licensee shall retain a record of the installation, maintenance, adjustment, and repair of remote afterloader units, teletherapy units, and gamma stereotactic radiosurgery units as required by Rule .05(69) for 3 years. For each installation, maintenance, adjustment and repair, the record must include the date, description of the service, and name(s) of the individual(s) who performed the work.

(107) **Records of Dosimetry Equipment.**

(a) A licensee shall retain a record of the calibration, inter-comparison, and comparisons of its dosimetry equipment done in accordance with Rule .05(72) for the duration of the license.

(b) For each calibration, inter-comparison, or comparison, the record must include:

1. The date;

2. The manufacturer's name, model numbers and serial numbers of the instruments that were calibrated, inter-compared, or compared as required by Rule .05(72)(a) and (72)(b);

3. The correction factor that was determined from the calibration or comparison or the apparent correction factor that was determined from an inter-comparison; and

4. The names of the individuals who performed the calibration, inter-comparison, or comparison.

(108) **Records of Teletherapy, Remote Afterloader, and Gamma Stereotactic Radiosurgery Full Calibrations.**

(a) A licensee shall maintain a record of the teletherapy, remote afterloader, and gamma stereotactic radiosurgery full calibrations required by Rule .05(73), (74) and (75) for 3 years.

(b) The record must include:

1. The date of the calibration;

2. The manufacturer's name, model number, and serial number for the teletherapy, remote afterloader, and gamma stereotactic radiosurgery unit(s), the source(s), and instruments used to calibrate the unit;

3. The results and assessments of the full calibrations;

4. The results of the autoradiograph required for low dose-rate remote afterloader units; and

5. The signature of the authorized medical physicist who performed the full calibration.

(109) **Records of Periodic Spot-Checks for Teletherapy Units.**

(a) A licensee shall retain a record of each periodic spot-check for teletherapy units required by Rule .05(76) for 3 years.

(b) The record must include:

1. The date of the spot-check;

2. The manufacturer's name, model number, and serial number for the teletherapy unit, source and instrument used to measure the output of the teletherapy unit;

3. An assessment of timer linearity and constancy;

4. The calculated on-off error;

5. A determination of the coincidence of the radiation field and the field indicated by the light beam localizing device;

6. The determined accuracy of each distance measuring and localization device;

7. The difference between the anticipated output and the measured output;

8. Notations indicating the operability of each entrance door electrical interlock, each electrical or mechanical stop, each source exposure indicator light, and the viewing and intercom system and doors; and

9. The name of the individual who performed the periodic spot-check and the signature of the authorized medical physicist who reviewed the record of the spot-check.

(110) **Records of Periodic Spot-Checks for Remote Afterloader Units.**

(a) A licensee shall retain a record of each spot-check for remote afterloader units required by Rule .05(77) for 3 years.

(b) The record must include, as applicable:

1. The date of the spot-check;

2. The manufacturer's name, model number, and serial number for the remote afterloader unit and source;

3. An assessment of timer accuracy;

4. Notations indicating the operability of each entrance door electrical interlock, radiation monitors, source exposure indicator lights, viewing and intercom systems, and clock and decayed source activity in the unit's computer; and

5. The name of the individual who performed the periodic spot-check and the signature of the authorized medical physicist who reviewed the record of the spot-check.

(111) **Records of Periodic Spot-Checks for Gamma Stereotactic Radiosurgery Units.**

(a) A licensee shall retain a record of each spot-check for gamma stereotactic radiosurgery units required by Rule .05(78) for 3 years.

(b) The record must include:

1. The date of the spot-check;

2. The manufacturer's name, model number, and serial number for the gamma stereotactic radiosurgery unit and the instrument used to measure the output of the unit;

3. An assessment of timer linearity and accuracy;

4. The calculated on-off error;

5. A determination of trunnion centricity;

6. The difference between the anticipated output and the measured output;

7. An assessment of source output against computer calculations;

8. Notations indicating the operability of radiation monitors, helmet microswitchs, emergency timing circuits, emergency off buttons, electrical interlocks, source exposure indicator lights, viewing and intercom systems, timer termination, treatment table retraction mechanism, and stereotactic frames and localizing devices (trunnions); and

9. The name of the individual who performed the periodic spot-check and the signature of the authorized medical physicist who reviewed the record of the spot-check.

(112) **Records of Additional Technical Requirements for Mobile Remote Afterloader Units.**

(a) A licensee shall retain a record of each check for mobile remote afterloader units required by Rule .05(79) for 3 years.

(b) The record must include:

1. The date of the check;

2. The manufacturer's name, model number, and serial number of the remote afterloader unit;

3. Notations accounting for all sources before the licensee departs from a facility;

4. Notations indicating the operability of each entrance door electrical interlock, radiation monitors, source exposure indicator lights, viewing and intercom system, applicators and source transfer tubes, and source positioning accuracy; and

5. The signature of the individual who performed the check.

(113) **Records of Surveys of Therapeutic Treatment Units.**

(a) A licensee shall maintain a record of radiation surveys of treatment units made in accordance with Rule .05(80) for the duration of use of the unit.

(b) The record must include:

1. The date of the measurements;

2. The manufacturer's name, model number and serial number of the treatment unit, source, and instrument used to measure radiation levels;

3. Each dose rate measured around the source while the unit is in the off position and the average of all measurements; and

4. The signature of the individual who performed the test.

(114) **Records of Five-Year Inspection for Teletherapy and Gamma Stereotactic Surgery Units.**

(a) A licensee shall maintain a record of the five-year inspections for teletherapy and gamma stereotactic radiosurgery units required by Rule .05(81) for the duration of use of the unit.

(b) The record must contain:

1. The inspector's radioactive materials license number;

2. The date of inspection;

3. The manufacturer's name and model number and serial number of both the treatment unit and source;

4. A list of components inspected and serviced, and the type of service; and

5. The signature of the inspector.

Reports.

(115) **Reports and Notifications of Misadministrations.**

(a) Other than events that result from intervention by a patient or human research subject, a licensee shall report any event in which the administration of radioactive material or radiation from radioactive material, except permanent implant brachytherapy, results in:

1. A dose that differs from the prescribed dose by more than 0.05 Sv (5 rem) effective dose equivalent, 0.5 Sv (50 rem) to an organ or tissue, or 0.5 Sv (50 rem) shallow dose equivalent to the skin; and either:

(i) The total dose delivered differs from the prescribed dose by 20 percent or more;

(ii) The total dosage delivered differs from the prescribed dosage by 20 percent or more or falls outside the prescribed dosage range; or

(iii) The fractionated dose delivered differs from the prescribed dose, for a single fraction, by 50 percent or more.

2. A dose that exceeds 0.05 Sv (5 rem) effective dose equivalent, 0.5 Sv (50 rem) to an organ or tissue, or 0.5 Sv (50 rem) shallow dose equivalent to the skin from any of the following:

(i) An administration of a wrong radioactive drug or the wrong radionuclide for brachytherapy procedures;

(ii) An administration of a radioactive drug containing radioactive material by the wrong route of administration;

(iii) An administration of a dose or dosage to the wrong individual or human research subject;

(iv) An administration of a dose or dosage delivered by the wrong mode of treatment; or

(v) A leaking sealed source.

3. A dose to the skin or an organ or tissue other than the treatment site that exceeds by:

(i) 0.5 Sv (50 rem) or more the expected dose to that site from the procedure if the administration had been given in accordance with the written directive prepared or revised before administration; and

(ii) 50 percent or more the expected dose to that site from the procedure if the administration had been given in accordance with the written directive prepared or revised before administration.

4. For permanent implant brachytherapy, the administration of byproduct material or radiation from byproduct material (excluding sources that were implanted in the correct site but migrated outside the treatment site) that results in:

(i) The total source strength administered differing by 20 percent or more from the total source strength documented in the post-implantation portion of the written directive;

(ii) The total source strength administered outside of the treatment site exceeding 20 percent of the total source strength documented in the post-implantation portion of the written directive; or

(iii) An administration that includes any of the following:

(I) The wrong radionuclide;

(II) The wrong individual or human research subject;

(III) Sealed source(s) implanted directly into a location discontiguous from the treatment site, as documented in the post-implantation portion of the written directive; or

(IV) A leaking sealed source resulting in a dose that exceeds 0.5 Sv (50 rem) to an organ or tissue.

(b) A licensee shall report any event resulting from intervention of a patient or human research subject in which the administration of radioactive material or radiation from radioactive material results, or will result in, unintended permanent functional damage to an organ or a physiological system, as determined by a physician.

(c) The licensee shall notify the Division by telephone no later than the next calendar day after discovery of the misadministration.

(d) The licensee shall submit a written report to the Division within 15 days after discovery of the misadministration.

1. The written report must include:

(i) The licensee's name;

(ii) The name of the prescribing physician;

(iii) A brief description of the event;

(iv) Why the event occurred;

(v) The effect, if any, on the individual(s) who received the administration;

(vi) Actions, if any, that have been taken, or are planned, to prevent recurrence;

(vii) Certification that the licensee notified the individual (or the individual's responsible relative or guardian), and if not, why not; and

2. The report may not contain the individual's name or any other information that could lead to identification of the individual.

(e) The licensee shall provide notification of the misadministration to the referring physician and also notify the individual who is the subject of the misadministration no later than 24 hours after its discovery, unless the referring physician personally informs the licensee either that he or she will inform the individual or that, based on medical judgment, telling the individual would be harmful. The licensee is not required to notify the individual without first consulting the referring physician. If the referring physician or the affected individual cannot be reached within 24 hours, the licensee shall notify the individual as soon as possible thereafter. The licensee may not delay any appropriate medical care for the individual, including any necessary remedial care as a result of the misadministration, because of any delay in notification. To meet the requirements of this paragraph, the notification of the individual who is the subject of the misadministration may be made instead to that individual's responsible relative or guardian. If a verbal notification is made, the licensee shall inform the individual or appropriate

responsible relative or guardian that a written description of the event can be obtained from the licensee upon request. The licensee shall provide such a written description if requested.

(f) Aside from the notification requirement, nothing in this section affects any rights or duties of licensees and physicians in relation to each other, to individuals affected by the misadministration, or to that individual's responsible relatives or guardians.

(g) A licensee shall retain a record of a misadministration in accordance with Rule .05(89). A copy of the record required under Rule .05(89) shall be provided to the referring physician if other than the licensee, within 15 days after discovery of the misadministration.

(116) **Report and Notification of a Dose to an Embryo/Fetus or a Nursing Child.**

(a) A licensee shall report any dose to an embryo/fetus that is greater than 5 mSv (500 mrem) dose equivalent that is a result of an administration of radioactive material or radiation from radioactive material to a pregnant individual unless the dose to the embryo/fetus was specifically approved, in advance, by the authorized user.

(b) A licensee shall report any dose to a nursing child that was not specifically approved, in advance, by the authorized user, that is a result of an administration of radioactive material to a breast-feeding individual that:

1. Is greater than 5 mSv (500 mrem) total effective dose equivalent; or

2. Has resulted in unintended permanent functional damage to an organ or a physiological system, as determined by a physician.

(c) The licensee shall notify by telephone the Division no later than the next calendar day after discovery of a dose to the embryo/fetus or nursing child that requires a report in Rule .05(116)(a) or (116)(b).

(d) The licensee shall submit a written report to the Division within 15 days after discovery of a dose to the embryo/fetus or nursing child that requires a report in Rule .05(116)(a) or (116)(b).

1. The written report must include:

(i) The licensee's name;

(ii) The name of the prescribing physician;

(iii) A brief description of the event;

(iv) Why the event occurred;

(v) The effect on the embryo/fetus or the nursing child;

(vi) What actions, if any, have been taken, or are planned, to prevent recurrence; and

(vii) Certification that the licensee notified the pregnant individual or mother (or the mother's or child's responsible relative or guardian), and if not, why not.

2. The report must not contain the individual's or child's name or any other information that could lead to identification of the individual or child.

(e) The licensee shall notify the referring physician and also notify the pregnant individual or mother, both hereafter referred to as the mother, no later than 24 hours after of discovery of an event that would require reporting under Rule .05(116)(a) or (116)(b), unless the referring physician personally informs the licensee either that he or she will inform the mother or that, based on medical judgment, telling the mother would be harmful. The licensee is not required to notify the mother without first consulting with the referring physician. If the referring physician or

mother cannot be reached within 24 hours, the licensee shall make the appropriate notifications as soon as possible thereafter. The licensee may not delay any appropriate medical care for the embryo/fetus or for the nursing child, including any necessary remedial care as a result of the event, because of any delay in notification. To meet the requirements of this paragraph, the notification may be made to the mother's or child's responsible relative or guardian instead of the mother, when appropriate. If a verbal notification is made, the licensee shall inform the mother, or the mother's or child's responsible relative or guardian, that a written description of the event can be obtained from the licensee upon request. The licensee shall provide such a written description if requested.

(f) A licensee shall retain a record of a dose to an embryo/fetus or a nursing child in accordance with Rule .05(90). A copy of the record required under Rule .05(90) shall be provided to the referring physician, if other than the licensee, within 15 days after discovery of the event.

(117) **Reports of Leaking Sources.** A licensee shall file a report with the Division within 5 days if a leakage test required by Rule .05(33) reveals the presence of 185 Bq (0.005 µCi) or more of removable contamination. The written report must include the model number and serial number if assigned, of the leaking source; the radionuclide and its estimated activity; the results of the test; the date of the test; and the action taken.

(118) **Reports of Patient Departure Prior to Authorized Release.**

(a) A licensee shall notify the Division by telephone immediately upon discovery that a patient or human research subject has departed from the licensee's facility without authorization under Rule .05(37)(a).

(b) The licensee shall submit a written report to the Division within 30 days after discovery of the unauthorized departure. The written report must include:

1. The licensee's name;

2. The date and time of the unauthorized departure;

3. The projected date and time when release would have occurred;

4. The address of the patient's or human research subject's home or anticipated destination following departure;

5. The radionuclide, chemical and physical form and calculated activity at time of release;

6. The apparent reason(s) for the departure prior to authorized release; and

7. A description of any changes in the licensee's patient release criteria or patient instructions that are designed to avoid a recurrence of such an event.

(119) **Notification of Deceased Patients or Human Research Subjects Containing Radioactive Material.**

(a) The licensee shall notify the Division by telephone immediately upon discovery that a patient or human research subject containing radioactive material has died, and it is possible that any individual could receive exposures in excess of limits specified in Rule .03(5)(i) of this Chapter as a result of the deceased's body.

(b) The licensee shall submit a written report to the Division within 30 days after discovery that the patient or human research subject referenced in (119)(a) has died. The written report must include:

1. The licensee's name;

2. The date of death;

3. The radionuclide, chemical and physical form and calculated activity at time of death; and,

4. The names (or titles) and address(es) of known individuals who might have received exposures exceeding 5 millisievert (500 mrem).

(120) **Report and Notification for an Eluate Exceeding Permissible Molybdenum-99, Strontium-82, and Strontium-85 Concentrations.**

(a) The licensee shall notify by telephone the Georgia Department of Natural Resources, Environmental Protection Division and the distributor of the generator within 7 calendar days after discovery that an eluate exceeded the permissible concentration listed in 391-3-17-.05(45)(a) at the time of generator elution. The telephone report to the Georgia EPD must include the manufacturer, model number, and serial number (or lot number) of the generator; the results of the measurement; the date of the measurement; whether dosages were administered to patients or human research subjects, when the distributor was notified, and the action taken.

(b) By an appropriate method listed in 391-3-17-.01(13), the licensee shall submit a written report to Georgia Department of Natural Resources, Environmental Protection Division within 30 calendar days after discovery of an eluate exceeding the permissible concentration at the time of generator elution. The written report must include the action taken by the licensee; the patient dose assessment; the methodology used to make this dose assessment if the eluate was administered to patients or human research subjects; and the probable cause and an assessment of failure in the licensee's equipment, procedures or training that contributed to the excessive readings if an error occurred in the licensee's breakthrough determination; and the information in the telephone report as required by subparagraph .05(120)(a).

[1] "Essentials and guidelines of an Accredited Educational Program for the Radiation Therapy Technologist", Joint Review Committee on Education in Radiologic Technology, 1988.

[2] Experience with at least 3 cases in category (VII)(ii) also satisfies the requirement in category (VII)(i).

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Repealed: New Rule of same title adopted. F. May 30, 2003; eff. July 1, 2003, as specified by the Agency.

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Amended: New title, "Use of Radionuclides in the Healing Arts." F. June 1, 2017; eff. June 21, 2017.

Amended: F. Jan. 28, 2019; eff. Feb. 17, 2019.

Amended: F. Feb. 26, 2020; eff. Mar. 17, 2020.

Amended: F. Mar. 24, 2021; eff. Apr. 13, 2021.

391-3-17-.06 Transportation of Radioactive Material

(1) **General.**

(a) Purpose. The Regulations in this Rule, 391-3-17-.06, establish requirements for packaging, preparation for shipment, and transportation of radioactive material.

(b) Scope. This Rule applies to any licensee authorized by specific or general license issued by the Director, Agreement State, or NRC to receive, possess, use, or transfer licensed material to a carrier for transport of the material outside the site of usage as specified in the license, or transports that material on public highways or public access roads. No provision of this part authorizes possession of licensed material.

(2) **Requirement for License.** No person shall transport radioactive material or deliver radioactive material to a carrier for transport except as authorized in a general or specific license issued by the Director or as exempted in (4).

(3) **Definitions.** As used in this Rule, the following definitions apply:

(a) "A_1" and "A_2" mean, respectively, the maximum activity of special form radioactive material (A_1) and the maximum activity of radioactive material, other than special form material, LSA, and SCO material (A_2), permitted in a Type A package.

(b) "Carrier" means a person engaged in the transportation of passengers or property by land or water as a common, contract, or private carrier, or by civil aircraft.

(c) "Certificate holder" means a person who has been issued a certificate of compliance or other package approval by the U.S. Nuclear Regulatory Commission.

(d) "Certificate of Compliance (CoC)" means the certificate issued by the U.S Nuclear Regulatory Commission, which approves the design of a package for the transportation of radioactive material.

(e) "Close reflection by water" means immediate contact by water of sufficient thickness for maximum reflection of neutrons.

(f) "Closed transport vehicle" means a transport vehicle equipped with a securely attached exterior enclosure that during normal transportation restricts the access of unauthorized persons to the cargo space containing the radioactive material. The enclosure may be either temporary or permanent but shall limit access from top, sides, and ends. In the case of packaged materials, it may be of the "see-through" type.

(g) "Consignment" means each shipment of a package or groups of packages or load of radioactive material offered by a shipper for transport.

(h) "Containment system" means the assembly components of the packaging intended to retain the radioactive material during transport.

(i) "Conveyance" means:

1. For transport by public highway or rail any transport vehicle or large freight container;

2. For transport by water any vessel, or any hold, compartment, or defined deck area of a vessel including any transport vehicle on board the vessel; and

3. For transport by any aircraft.

(j) "Criticality Safety Index (CSI)" means the dimensionless number (rounded up to the next tenth) assigned to and placed on the label of a fissile material package, to designate the degree of control of accumulation of packages, overpacks or freight containers containing fissile material during transportation. Determination of the criticality safety index is described in 391-3-17-.06(11) and (12) and 10 CFR 71.59. The criticality safety index for an overpack, freight container, consignment or conveyance containing fissile material packages is the arithmetic sum of the criticality safety indices of all the fissile material packages contained within the overpack, freight container, consignment or conveyance.

(k) "Deuterium" means deuterium and any deuterium compounds, including heavy water, in which the ratio of deuterium atoms to hydrogen atoms exceeds 1:5,000.

(l) "DOT" means the U.S. Department of Transportation.

(m) "Exclusive use" means the sole use of a conveyance by a single consignor and for which all initial, intermediate, and final loading and unloading are carried out in accordance with the direction of the consignor or consignee. The consignor and the carrier must ensure that any loading or unloading is performed by personnel having radiological training and resources appropriate for safe handling of the consignment. The consignor must issue specific instructions, in writing, for maintenance of exclusive use shipment controls, and include them with the shipping paper information provided to the carrier by the consignor.

(n) "Fissile material" means the radionuclides uranium-233, uranium-235, plutonium-239, and plutonium-241, or any combination of these radionuclides. Fissile material means the fissile nuclides themselves, not material containing fissile nuclides. Neither natural nor depleted uranium is fissile material. Unirradiated natural uranium or depleted uranium that has been irradiated in thermal reactors only are not included in this definition. Certain exclusions from fissile material controls are provided in 10 CFR 71.15.

(o) "Graphite" means graphite with a boron equivalent content less than five (5) parts per million and density greater than 1.5 grams per cubic centimeter.

(p) "Indian Tribe" means an Indian or Alaska Native Tribe, band, nation, pueblo, village, or community that the Secretary of the Interior acknowledges to exist as an Indian Tribe pursuant to the Federally Recognized Indian Tribe List Act of 1994, 25 U.S.C. 479a.

(q) "Licensed material" means byproduct, source, or special nuclear material received, possessed, used, or transferred under a general or specific license issued by the U.S. Nuclear Regulatory Commission or an Agreement State pursuant to the regulations in 10 CFR or this Chapter, respectively.

(r) "Low specific activity material" means radioactive material with limited specific activity which is nonfissile or is excepted under 391-3-17-.06(4)(f), and which satisfies the descriptions and limits set forth below. Shielding materials surrounding the LSA material may not be considered in determining the estimated average specific activity of the package contents. The LSA material must be in one of three groups:

1. LSA-I.

(i) Uranium and thorium ores, concentrates of uranium and thorium ores, and other ores containing naturally occurring radionuclides that are intended to be processed for the use of these radionuclides; or

(ii) Natural uranium, depleted uranium, natural thorium or their compounds or mixtures, provided they are unirradiated and in solid or liquid form; or

(iii) Radioactive material, other than fissile material, for which the A_2 value is unlimited; or

(iv) Other radioactive material in which the activity is distributed throughout and the estimated average specific activity does not exceed 30 times the value for exempt material activity concentration determined in accordance with 391-3-17-.06(23).

2. LSA-II.

(i) Water with tritium concentration up to 20.0 Ci/L (0.8 TBq/liter); or

(ii) Other radioactive material in which the activity is distributed throughout and the estimated average specific activity does not exceed 10^{-4} A_2/g for solids and gases, and 10^{-5} A_2/g for liquids.

3. LSA-III. Solids (e.g. consolidated wastes, activated materials), excluding powders, that satisfy the requirements of 10 CFR 71.77, in which:

(i) The radioactive material is distributed throughout a solid or a collection of solid objects, or is essentially uniformly distributed in a solid compact binding agent (such as concrete, bitumen, ceramic, etc);

(ii) The radioactive material is relatively insoluble, or it is intrinsically contained in a relatively insoluble material, so that, even under loss of packaging, the loss of radioactive material per package by leaching, when placed in water for seven days, would not exceed 0.1 A_2; and

(iii) The estimated average specific activity of the solid, excluding any shielding material, does not exceed $2x10^{-3}$ A_2/g.

(s) "Low toxicity alpha emitters" means natural uranium, depleted uranium, natural thorium; uranium-235, uranium-238, thorium-232, thorium-228 or thorium-230 when contained in ores or physical or chemical concentrates or tailings; or alpha emitters with a half-life of less than 10 days.

(t) "Maximum normal operating pressure" means the maximum gauge pressure that would develop in the containment system in a period of one year under the heat condition specified in 10 CFR 71.71(c)(1), in the absence of venting, external cooling by an ancillary system, or operational controls during transport.

(u) "Natural thorium" means thorium with the naturally occurring distribution of thorium isotopes (essentially 100 weight percent thorium-232).

(v) "Normal form radioactive material" means radioactive material that has not been demonstrated to qualify as "special form radioactive material."

(w) "Nuclear waste" means a quantity of source, byproduct or special nuclear material required to be in US Nuclear Regulatory Commission-approved specification packaging while transported to, through or across a state boundary to a disposal site, or to a collection point for transport to a disposal site.

(x) "Optimum interspersed hydrogenous moderation" means the presence of hydrogenous material between packages to such an extent that the maximum nuclear reactivity results.

(y) "Package" means the packaging together with its radioactive contents as presented for transport.

1. "Fissile material package or Type AF package, Type BF package, Type B(U)F package, or Type B(M)F package" means a fissile material packaging together with its fissile material contents.

2. "Type A package" means a Type A packaging together with its radioactive contents. A Type A package is defined and must comply with the DOT regulations in 49 CFR Part 173.

3. "Type B package" means a Type B packaging together with its radioactive contents. On approval, a Type B package design is designated by NRC as B(U) unless the package has a maximum normal operating pressure of more than 700 kPa (100 lb/in^2) gauge or a pressure relief device that would allow the release of radioactive material to the environment under the tests specified in 10 CFR Part 71 (hypothetical accident conditions), in which case it will receive a designation B(M). B(U) refers to the need for unilateral approval of international shipments; B(M) refers to the need for multilateral approval of international shipments. There is no distinction made in how packages with these designations may be used in domestic transportation. To determine their distinction for international

transportation, see DOT regulations in 49 CFR Part 173. A Type B package approved before September 6, 1983, was designated only as Type B. Limitations on its use are specified in .06(8).

(z) "Packaging" means the assembly of components necessary to ensure compliance with the packaging requirements of this Rule. It may consist of one or more receptacles, absorbent materials, spacing structures, thermal insulation, radiation shielding, and devices for cooling or absorbing mechanical shocks. The vehicle, tiedown system, and auxiliary equipment may be designated as part of the packaging.

(aa) "Regulations of the U.S. Department of Transportation" means the regulations in 49 CFR Parts 100-189 and Parts 390-397.

(bb) "Regulations of the U.S. Nuclear Regulatory Commission" means the regulations in 10 CFR 71 for purposes of this Rule.

(cc) "Special form radioactive material" means radioactive material that satisfies the following conditions:

1. It is either a single solid piece or is contained in a sealed capsule that can be opened only by destroying the capsule;

2. The piece or capsule has at least one dimension not less than 5 millimeters (0.2 in.); and

3. It satisfies the requirements specified by the Nuclear Regulatory Commission in 10 CFR 71.75. A special form encapsulation designed in accordance with the requirements of 10 CFR 71.4 in effect on June 30, 1983 (see 10 CFR 71, revised as of January 1, 1983), and constructed prior to July 1, 1985, may continue to be used. A special form encapsulation designed in accordance with the Nuclear Regulatory Commission requirements in 10 CFR 71.4 in effect on March 31, 1996 (see 10 CFR 71, revised as of January 1, 1996), and constructed prior to April 1, 1998, may continue to be used. A special form material that was successfully tested before September 10, 2015 in accordance with the requirements of 10 CFR 71.75(d) in effect before September 10, 2015 may continue to be used. Any other special form must meet requirements of this definition applicable at the time of its design or construction.

(dd) "Specific activity" of a radionuclide means the radioactivity of a radionuclide per unit mass of that nuclide. The specific activity of a material in which the radionuclide is essentially uniformly distributed is the radioactivity per unit mass of the material.

(ee) "Spent nuclear fuel or Spent fuel" means fuel that has been withdrawn from a nuclear reactor following irradiation, has undergone at least one (1) year's decay since being used as a source of energy in a power reactor, and has not been chemically separated into its constituent elements by reprocessing. Spent fuel includes the special nuclear material, byproduct material, source material, and other radioactive materials associated with fuel assemblies.

(ff) "Surface Contaminated Object (SCO)" means a solid object that is not itself classed as radioactive material, but which has radioactive material distributed on any of its surfaces. SCO must be in one of two groups with surface activity not exceeding the following limits:

1. SCO-I: A solid object on which:

(i) The non-fixed contamination on the accessible surface averaged over 300 cm^2 the area of the surface if less than 300 cm^2) does not exceed 10^{-4} microcurie/cm^2 (4 Bq/cm^2) for beta and gamma and low toxicity alpha emitters, or 10^{-5} microcurie/cm^2 (0.4 Bq/cm^2) for all other alpha emitters;

(ii) The fixed contamination on the accessible surface averaged over 300 cm^2 (or the area of the surface if less than 300 cm^2) does not exceed 1.0 microcurie/cm^2 ($4x10^4$ Bq/cm^2) for beta and gamma and low toxicity alpha emitters, or 0.1 microcurie/cm^2 ($4x10^3$ Bq/cm^2) for all other alpha emitters; and

(iii) The non-fixed contamination plus the fixed contamination on the inaccessible surface averaged over 300 cm^2 (or the area of the surface if less than 300 cm^2) does not exceed 1.0 microcurie/cm^2 ($4x10^4$ Bq/cm^2) for beta and gamma and low toxicity alpha emitters, or 0.1 microcurie/cm^2 ($4x10^3$ Bq/cm^2) for all other alpha emitters.

2. SCO-II: A solid object on which the limits for SCO-I are exceeded and on which:

(i) The non-fixed contamination on the accessible surface averaged over 300 cm^2 (or the area of the surface if less than 300 cm^2) does not exceed 10^{-2} microcurie/cm^2 (400 Bq/cm^2) for beta and gamma and low toxicity alpha emitters, or 10^{-3} microcurie/cm^2 (40 Bq/cm^2) for all other alpha emitters;

(ii) The fixed contamination on the accessible surface averaged over 300 cm^2 (or the area of the surface if less than 300 cm^2) does not exceed 20 microcurie/cm^2 ($8x10^2$ Bq/cm^2) for beta and gamma and low toxicity alpha emitters, or 2 microcurie/cm^2 ($8x10^4$ Bq/cm^2) for all other alpha emitters; and

(iii) The non-fixed contamination plus the fixed contamination on the inaccessible surface averaged over 300 cm^2 (or the area of the surface if less than 300 cm^2) does not exceed 20 microcurie/cm^2 ($8x10^5$ Bq/cm^2) for beta and gamma and low toxicity alpha emitters, or 2 microcurie/cm^2 ($8x10^4$ Bq/cm^2) for all other alpha emitters.

(gg) "Transport index" means the dimension-less number (rounded up to the next tenth) placed on the label of a package, to designate the degree of control to be exercised by the carrier during transportation. The transportation index is the number expressing the maximum radiation level in millirem per hour at 1 meter from the external surface of the package.

(hh) "Tribal official" means the highest ranking individual that represents Tribal leadership, such as the Chief, President, or Tribal Council leadership.

(ii) "Type A package" means a packaging that, together with its radioactive contents limited to A_1 or A_2 as appropriate, meets the requirements of 49 CFR 173.410 and 173.412 and is designed to retain the integrity of containment and shielding required by this Rule under normal conditions of transport as demonstrated by the tests set forth in 49 CFR 173.465 or 173.466, as appropriate.

(jj) "Type A quantity" means a quantity of radioactive material the aggregate radioactivity of which does not exceed A_1 for special form radioactive material or A_2 for normal form radioactive material, where A_1 and A_2 are given in Table 4, "A_1 and A_2 Values for Radionuclides" or may be determined by procedures described in (23) of this Rule.

(kk) "Type B package" is defined in Rule 391-3-17-.01(2)(ttt).

(ll) "Type B packaging" means a packaging designed to retain the integrity of containment and shielding when subjected to the normal conditions of transport and hypothetical accident test conditions set forth in 10 CFR Part 71.

(mm) "Type B quantity" means a quantity of radioactive material greater than a Type A quantity.

(nn) "Unirradiated uranium" means uranium containing not more than $2x10^3$ Bq of plutonium per gram of uranium-235, not more than $9x10^6$ Bq of fission products per gram of uranium-235, and not more than $5x10^{-3}$ grams of uranium-236 per gram of uranium-235.

(oo) "Uranium-natural, depleted, enriched" means:

1. Natural uranium means uranium (which may be chemically separated) with the naturally occurring distribution of uranium isotopes (approximately 0.711 weight percent uranium-235, and the remainder by weight essentially uranium-238).

2. Depleted uranium means uranium containing less uranium-235 than the naturally occurring distribution of uranium isotopes.

3. Enriched uranium means uranium containing more uranium-235 than the naturally occurring distribution of uranium isotopes.

(pp) "Contamination" means the presence of a radioactive substance on a surface in quantities in excess of 0.4 Bq/cm^2 (1x10-5 $\mu Ci/cm^2$) for beta and gamma emitters and low toxicity alpha emitters, or 0.04 Bq/cm^2 (1x10-6 $\mu Ci/cm^2$) for all other alpha emitters.

1. Fixed contamination means contamination that cannot be removed from a surface during normal conditions of transport.

2. Non-fixed contamination means contamination that can be removed from a surface during normal conditions of transport.

(4) **Exemptions.**

(a) Common and contract carriers, freight forwarders, and warehousemen who are subject to the requirements of the U.S. Department of Transportation (DOT) in 49 CFR 170 through 189 or the U.S. Postal Service in the Postal Service Manual (Domestic Mail Manual), Section C-023.9.0, and the U.S. Postal Service, are exempt from the requirements of this Rule and as stated in 10 CFR 30.13 to the extent that they transport or store radioactive material in the regular course of their carriage for others or storage incident thereto. Common and contract carriers who are not subject to the requirements of the U.S. Department of Transportation or U.S. Postal Service are subject to (2) of this Rule and other applicable requirements of these Regulations.

(b) Any licensee is exempt from the requirements of this Rule to the extent that the licensee delivers to a carrier for transport a package containing radioactive material having a specific activity not greater than 0.002 microcurie per gram (70 Bq/gm).

(c) Any physician licensed by Georgia to dispense drugs in the practice of medicine is exempt from Rule .06 with respect to transport by the physician of licensed material for use in the practice of medicine. However, any physician operating under this exemption must be licensed under Rule .05.

(d) A licensee is exempt from the requirements of Rule .06 with respect to shipment or carriage of the following low-level materials:

1. Natural material and ores containing naturally occurring radionuclides that are either in their natural state, or have only been processed for purposes other than for the extraction of the radionuclides, and which are not intended to be processed for use of these radionuclides, provided the activity concentration of the material does not exceed 10 times the applicable radionuclide activity concentration values specified in Table 5 and 7.

2. Materials for which the activity concentration is not greater than the activity concentration values specified in Table 5 and 7, or for which the consignment activity is not greater than the limit for an exempt consignment found in Table 5 and 7.

3. Non-radioactive solid objects with radioactive substances present on any surfaces in quantities not in excess of the levels cited in the definition of contamination in 391-3-17-.06(3)(pp).

(e) A licensee is exempt from the requirements of Rule .06, other than .06(5) and .06(17), with respect to shipment or carriage of the following packages, providing the packages do not contain any fissile material, or the material is exempt from classification as fissile material in .06(4)(f):

1. A package that contains no more than a Type A quantity of radioactive material;

2. A package transported within the United States that contains no more than 20 Ci (0.74 TBq) of special form plutonium-244; or

3. A package contains LSA or SCO radioactive material, provided that the LSA or SCO material has an external radiation dose of less than or equal to 1 rem/hr (10 mSv/hr) at a distance of 3 meters from the unshielded material or that the package contains only LSA-I or SCO-I material.

(f) Fissile material meeting the requirements of at least one of the following six paragraphs in this part are exempt from classification as fissile material and from the fissile material package standards of 10 CFR 71.55 and 71.59, but are subject to all other requirements of this part, except as noted.

1. Individual package containing two (2) grams or less of fissile material.

2. Individual or bulk packaging containing fifteen (15) grams or less of fissile material provided the package has at least 200 grams of solid nonfissile material for every gram of fissile material. Lead, beryllium, graphite, and hydrogenous material enriched in deuterium may be present in the package but must not be included in determining the required mass for solid nonfissile material.

3. Low concentrations of solid fissile material commingled with solid nonfissile material, provided that (i) there is at least 2,000 grams of solid nonfissile material for every gram of fissile material, and (ii) there is no more than 180 grams of fissile material distributed within 360 kg of contiguous nonfissile material. Lead, beryllium, graphite, and hydrogenous material enriched in deuterium may be present in the package but must not be included in determining the required mass for solid nonfissile material.

4. Uranium enriched in uranium-235 to a maximum of one (1) percent by weight, and with a total plutonium and uranium-233 content of up to one (1) percent of the mass of uranium-235, provided that the mass of any beryllium, graphite, and hydrogenous material enriched in deuterium constitutes less than five (5) percent of the uranium mass, and that the fissile material is distributed homogeneously and does not form a lattice arrangement within the package.

5. Liquid solutions of uranyl nitrate enriched in uranium-235 to a maximum of two (2) percent by mass, with a total plutonium and uranium-233 content not exceeding 0.002 percent of the mass of uranium, and with a minimum nitrogen to uranium atomic ratio (N/U) of 2. The material must be contained in at least a DOT Type A package.

6. Packages containing, individually, a total plutonium mass of not more than 1,000 grams, of which not more than twenty (20) percent by mass may consist of plutonium-239, plutonium-241, or any combination of these radionuclides.

(5) **Transportation of Licensed Material.**

(a) Each licensee who transports licensed material outside the site of usage, as specified in a Division license, or where transport is on public highway, or public access road, or who delivers licensed material to a carrier for transport, shall:

1. Comply with the applicable requirements, appropriate to the mode of transport, of the regulations of the US Department of Transportation (DOT).

(i) The licensee shall particularly note DOT regulations in the following areas:

(I) Packaging- 49 CFR Part 173, Subparts A and B and I.

(II) Marking and Labeling- 49 CFR Part 172: Subpart D, and §§ 49 CFR 172.400 through 172.407, §§ 172.436 through 172.440 of Subpart E.

(III) Placarding- 49 CFR Part 172: Subpart F, especially §§ 172.500 through 172.519, 172.556 and Appendices B and C.

(IV) Accident Reporting- 49 CFR Part 171: §§ 171.15 and 171.16.

(V) Shipping Papers and Emergency Information- 49 CFR Part 172, Subpart C and Subpart G.

(VI) Hazardous material employee training- 49 CFR Part 172: Subpart H.

(VII) Security Plans- 49 CFR Part 172: Subpart I.

(VIII) Hazardous material shipper/carrier registration- 49 CFR Part 107: Subpart G.

(ii) The licensee shall also note DOT regulations pertaining to the following modes of transportation:

(I) Rail- 49 CFR Part 174, Subparts A through D and K.

(II) Air- 49 CFR Part 175.

(III) Vessel- 49 CFR Part 176, Subparts A through F and M.

(IV) Public Highway- 49 CFR Part 177 and Parts 390 through 397.

2. Assure that any special instructions needed to safely open the package are sent to or have been made available to the consignee in accordance with Rule 391-3-17-.03(12) (f).

(b) If, for any reason, the regulations of the DOT are not applicable to a shipment of licensed material, the licensee shall conform to the standards and requirements of 49 CFR Parts 170-189 appropriate to the mode of transport to the same extent as if the shipment was subject to the regulations.

(6) **General Licenses for Carriers.**

(a) A general license is hereby issued to any common or contract carrier not exempt under (4) to receive, possess, transport, and store radioactive material in the regular course of their carriage for others or storage incident thereto, provided the transportation and storage is in accordance with the applicable requirements, appropriate to the mode of transport, of the DOT insofar as such requirements relate to the loading and storage of packages, placarding of the transporting vehicle, and incident reporting.

(b) A general license is hereby issued to any private carrier to transport radioactive material, provided the transportation is in accordance with the applicable requirements, appropriate to the mode of transport, of the DOT insofar as such requirements relate to the loading and storage of packages, placarding of the transporting vehicle, and incident reporting.

(c) Persons who transport radioactive material pursuant to the general licenses in (6)(a) or (b) are exempt from the requirements of Rules 391-3-17-.03 and .07 to the extent that they transport radioactive material.

(7) **General License: NRC-Approved Packages.**

(a) A general license is hereby issued to any licensee to transport, or to deliver to a carrier for transport, licensed material in a package for which a license, certificate of compliance, or other approval has been issued by the U.S. Nuclear Regulatory Commission (NRC).

(b) Each licensee issued a general license under .06(7)(a) shall:

1. Possess a copy of the specific license, certificate of compliance, or other approval of the package and the drawings and other documents referenced in the approval relating to the use and maintenance of the packaging and to the actions to be taken prior to shipment;

2. Comply with the terms and conditions of the license, certificate, or other approval by the Nuclear Regulatory Commission, as applicable, and the applicable requirements of this Rule;

3. Submit in writing before the first use of the package to: ATTN: Document Control Desk, Director, Division of Fuel Management, Office of Nuclear Material Safety and Safeguards, using an appropriate method listed in 10 CFR 71.71(a), the licensee's name and license number and the package identification number specified in the package approval.

(c) This general license applies only to a licensee who has a quality assurance program required by the Georgia Department of Natural Resources Radioactive Materials Program satisfying the provisions of (22).

(d) The general license in (7)(a) applies only when the package approval authorizes use of the package under this general license.

(e) For a Type B or fissile material package the design of which was approved by NRC before April 1, 1996 the general license is subject to additional restrictions of 10 CFR 71.19.

(8) **[Reserved].**

(9) **General License: DOT Specification Container.**

(a) A general license is issued to any licensee of the Division to transport, or to deliver to a carrier for transport, licensed material in a specification container for fissile material or for a Type B quantity of radioactive material as specified in 49 CFR Parts 173 and 178.

(b) This general license applies only to a licensee who:

1. Has a copy of the specification;

2. Complies with the terms and conditions of the specification and the applicable requirements of this Rule; and

3. Has a quality assurance program required by (22).

(c) The general license in (9)(a) is subject to the limitation that the specification container may not be used for a shipment to a location outside the United States, except by multilateral approval, as defined in DOT regulations at 49 CFR 173.403.

(10) **General License: Use of Foreign-Approved Package.**

(a) A general license is issued to any licensee of the Division to transport, or to deliver to a carrier for transport, licensed material in a package the design of which has been approved in a foreign national competent authority certificate which has been revalidated by the DOT as meeting the applicable requirements of 49 CFR 171.23.

(b) This general license applies only to international shipments.

(c) This general license applies only to a licensee who:

1. Has a copy of the applicable certificate, the revalidation, and the drawings and other documents referenced in the certificate relating to the use and maintenance of the packaging and to the actions to be taken prior to shipment;

2. Complies with the terms and conditions of the certificate and revalidation and with the applicable requirements of this Rule; and

3. Has a quality assurance program approved by the Georgia Department of Natural Resources, Environmental Protection Division, Radioactive Materials Program satisfying the requirements of (22).

(11) **General License: Fissile Material, Limited Quantity per Package.**

(a) A general license is hereby issued to any licensee to transport fissile material, or to deliver fissile material to a carrier for transport, if the material is shipped in accordance with this section. The material must be contained in a Type A package. The Type A package must also meet the DOT requirements of 49 CFR 173.417(a).

(b) This general license applies only to a licensee who has a quality assurance program required by (22).

(c) This general license applies only when a package contains no more than a Type A quantity of fissile material and contains less than 500 grams total of beryllium, graphite, or hydrogenous material enriched in deuterium.

(d) 1. This general license applies only to packages containing fissile material that are labeled with a Criticality Safety Index (CSI), defined as:

$$CSI = 10\left[\frac{grams\ of\ \ ^{235}U}{X} + \frac{grams\ of\ \ ^{233}U}{Y} + \frac{grams\ of\ Pu}{Z}\right]$$

where the values of X, Y, and Z used in the CSI equation must be taken from Tables 1 or 2, as appropriate. If Table 2 is used to obtain the value of X, then the values for the terms for uranium-233 and plutonium must be assumed to be zero. Table 1 values for X, Y, and Z must be used to determine the CSI if:

i. Uranium-233 is present in the package;

ii. The mass of plutonium exceeds one (1) percent of the mass of uranium-235;

iii. The uranium is of unknown uranium-235 enrichment or greater than 24 weight percent enrichment; or

iv. Substances having a moderating effectiveness (i.e., an average hydrogen density greater than water) (e.g., certain hydrocarbon oils or plastics) are present in any form, except as polyethylene used for packing or wrapping.

2. In all cases, the Criticality Safety Index must be rounded up to one decimal place and may not exceed 10.0.

3. For a shipment of multiple packages containing fillies material, the sum of the CSIs must be less than or equal to 50 (for shipment on a non-exclusive use conveyance) and less than or equal to 100 (for shipment on an exclusive use conveyance).

Table 1

Mass Limits for General License Packages Containing Mixed Quantities Of Fissile Material or Uranium-235 of Unknown Enrichment.

Fissile Material	Fissile Material mass mixed with moderating substances having an average hydrogen density less than or equal to water (in grams).	Fissile Material mass mixed with moderating substances having an average hydrogen density greater than water[(a)] (in grams).
^{235}U (X)	60	38
^{233}U (Y)	43	27
^{239}Pu or ^{241}Pu (Z)	37	24

(a) - When mixtures of moderating substances are present, the lower mass limits shall be used if more than 15 percent of the moderating substances has an average hydrogen density greater than water.

Table 2

Mass Limits for General License Packages Containing Uranium-235 of Known Enrichment.

Uranium Enrichment in weight percent of ^{235}U not exceeding.	Fissile Material mass of ^{235}U (X)(in grams).
24	60
20	63
15	67
11	72
10	76
9.5	78
9	81
8.5	82
8	85
7.5	88
7	90
6.5	93
6	97
5.5	102
5	108
4.5	114
4	120
3.5	132
3	150
2.5	180
2	246
1.5	408*
1.35	480*
1	1,020*
0.92	1,800*

*- Pursuant to the Division's agreement with the USNRC, jurisdiction extends only to 350 grams of uranium-235.

(12) **General License: Plutonium-Beryllium Special Form Material.**

(a) A general license is hereby issued to any licensee to transport fissile material in the form of plutonium-beryllium (Pu-Be) special form sealed sources, or to deliver Pu-Be sealed sources to a carrier for transport, if the material is shipped in accordance with this section. The material must be contained in a Type A package. The Type A package must also meet the DOT requirements of 49 CFR 173.417(a).

(b) This general license applies only when all of the following requirements are met:

1. The package contains no more than a Type A quantity of radioactive material.

2. The package contains less than 1,000 grams of plutonium, provided that: plutonium-239, plutonium-241, or any combination of these radionuclides, constitutes less than 240 grams of the total quantity of plutonium in the package.

(c) 1. This general license applies only to packages that are labeled with a Criticality Safety Index, calculated by:

CSI = (10 / 24) x (grams ^{239}Pu + grams ^{241}Pu)

where the CSI value is less than or equal to 100 and must be rounded up to the first decimal place.

2. For a shipment of multiple packages containing Pu-Be sealed sources, the sum of the CSIs must be less than or equal to 50 (for shipment on a nonexclusive use conveyance) and less than or equal to 100 (for shipment on an exclusive use conveyance).

(d) The general license has a quality assurance program required by (22).

(13) **Assumptions as to Unknown Properties of Fissile Material.** When the isotopic abundance, mass, concentration, degree of irradiation, degree of moderation, or other pertinent property of fissile material in any package is not known, the licensee shall package the fissile material as if the unknown properties had credible values that will cause the maximum neutron multiplication.

(14) **External Radiation Standards For All Packages.**

(a) Except as provided in (14)(b), each package of radioactive materials offered for transportation must be designed and prepared for shipment so that under conditions normally incident to transportation the radiation level does not exceed 200 mrem/hr (2 mSv/hr) at any point on the external surface of the package, and the transport index does not exceed 10.

(b) A package that exceeds the radiation level limits specified in (14)(a) must be transported by exclusive use shipment only, and the radiation levels for such shipment must not exceed the following during transportation:

1. 200 mrem/hr (2 mSv/hr) on the external surface of the package, unless the following conditions are met, in which case the limit is 1,000 mrem/hr (10 mSv/hr):

(i) The shipment is made in a closed transport vehicle;

(ii) The package is secured within the vehicle so that its position remains fixed during transportation; and

(iii) There are no loading or unloading operations between the beginning and end of the transportation;

2. 200 mrem/hr (2 mSv/hr) at any point on the outer surface of the vehicle, including the top and underside of the vehicle; or in the case of a flat-bed style vehicle, at any point on the vertical planes projected from the outer edges of the vehicle, on the upper surface of the load or enclosure, if used, and on the lower external surface of the vehicle; and

3. 10 mrem/hr (0.1 mSv/hr) at any point two (2) meters (80 inches) from the outer lateral surfaces of the vehicle (excluding the top and underside of the vehicle); or in the case of a flat-bed style vehicle, at any point two (2) meters (6.6 feet) from the vertical planes projected by the outer edges of the vehicle (excluding the top and underside of the vehicle); and

4. 2 mrem/hr (0.02 mSv/hr) in any normally occupied space, except that this provision does not apply to private carriers, if exposed personnel under their control wear radiation dosimetry devices in conformance with Rule 391-3-17-.03(8)(b).

(c) For shipments made under the provisions of (14)(b), the shipper will provide specific written instructions to the carrier for maintenance of the exclusive use shipment controls. The instructions must be included with the shipping paper information.

(d) The written instructions required for exclusive use shipments must be sufficient so that, when followed, they will cause the carrier to avoid actions that will unnecessarily delay delivery or unnecessarily result in increased radiation levels or radiation exposures to transport workers or members of the general public.

(15) **Preliminary Determinations.** Prior to the first use of any packaging for the shipment of radioactive material:

(a) The licensee shall ascertain that the determinations in 10 CFR 71.85(a) through (c) have been made.

(16) **Routine Determinations.** Prior to each shipment of licensed material, the licensee shall determine that:

(a) The package is proper for the contents to be shipped;

(b) The package is in unimpaired physical condition except for superficial defects such as marks or dents;

(c) Each closure device of the packaging, including any required gasket, is properly installed and secured and free of defects;

(d) Any system for containing liquid is adequately sealed and has adequate space or other specified provision for expansion of the liquid;

(e) Any pressure relief device is operable and set in accordance with written procedures;

(f) The package has been loaded and closed in accordance with written procedures;

(g) For fissile material, any moderator or neutron absorber, if required, is present and in proper condition;

(h) Any structural part of the package which could be used to lift or tie down the package during transport is rendered inoperable for that purpose unless it satisfies design requirements specified by 10 CFR 71.45;

(i) The level of non-fixed radioactive contamination on the external surfaces of each package offered for shipment is as low as reasonably achievable.

1. The level of non-fixed radioactive contamination may be determined by wiping an area of 300 square centimeters of the surface concerned with an absorbent material, using moderate pressure, and measuring the activity on the wiping material. Sufficient measurements must be taken in the most appropriate locations to yield a representative assessment of the removable contamination levels. Except as provided in (16)(i)2., the amount of radioactivity measured on any single wiping material, when averaged over the surface wiped, must not exceed the limits given in Table 3 at any time during transport. Other methods of assessment of equal or greater efficiency may be used. When other methods are used, the detection efficiency of the method used must be taken into account and in no case may the removable contamination on the external surfaces of the package exceed 10 times the limits listed in Table 3.

2. In the case of packages transported as exclusive use shipments by rail or highway only, the non-fixed radioactive contamination at any time during transport must not exceed 10 times the levels prescribed in (16)(i)1. The levels at the beginning of transport must not exceed the levels in (16)(i)1.;

Table 3

Non-Fixed (Removable) External Radioactive Contamination-Wipe Limits.

Contaminant	Maximum Permissible limits		
	µ¼Ci/cm^2	dpm/cm^2	Bq/cm^2
Beta-/gamma-emitting radionuclides; and low toxicity alpha emitters.....	10^{-5}	22	0.4
All other alpha-emitting radionuclides.....	10^{-6}	2.2	0.04

(j) External radiation levels around the package and around the vehicle, if applicable, will not exceed 200 millirem per hour (2 mSv/hr) at any point on the external surface of the package at any time during transportation. The transport index shall not exceed 10.

(k) For package transported as exclusive use by rail, highway, or water, radiation levels external to the package may exceed the limits specified in (16)(j). but shall not exceed any of the following:

1. 200 millirem per hour (2 mSv/hr) on the accessible external surface of the package unless the following conditions are met, in which case the limit is 1,000 millirem per hour (10 mSv/hr):

(i) The shipment is made in a closed transport vehicle,

(ii) Provisions are made to secure the package so that its position within the vehicle remains fixed during transportation, and

(iii) There are no loading or unloading operations between the beginning and end of the transportation;

2. 200 millirem per hour (2 mSv/hr) at any point on the outer surface of the vehicle, including the top and underside of the vehicle, or, in the case of a flat-bed style vehicle with a personnel barrier, at any point on the vertical planes projected from the outer edges of the vehicle, on the upper surface of the load (or enclosure, if used), and on the lower external surface of the vehicle;

3. 10 millirem per hour (0.1 mSv/hr) at any point 2 meters from the vertical planes represented by the outer lateral surfaces of the vehicle; or in the case of a flat-bed style vehicle, at any point 2 meters from the vertical planes projected from the outer edges of the vehicle; and

4. 2 millirem per hour (0.02 mSv/hr) in any normally occupied positions of the vehicle, except that this provision does not apply to private motor carriers when persons occupying these positions are provided with special health supervision, personnel radiation exposure monitoring devices, and training in accordance with 391-3-17-.07(3) of this Chapter; and

(l) A package must be prepared for transport so that in still air at 100 degrees Fahrenheit (38 degrees Celsius) and in the shade, no accessible surface of a package would have a temperature exceeding 122 degrees Fahrenheit (50 degrees Celsius) in a nonexclusive use shipment or 185 degrees Fahrenheit (85 degrees Celsius) in an exclusive use shipment. Accessible package surface temperatures shall not exceed these limits at any time during transportation.

(m) A package may not incorporate a feature intended to allow continuous venting during transport.

(17) **Air Transport of Plutonium.** Notwithstanding the provisions of any general licenses and notwithstanding any exemptions stated directly in this Rule or included indirectly by citation of the DOT regulations, as may be applicable, the licensee shall assure that plutonium in any form is not transported by air, or delivered to a carrier for air transport, unless:

(a) The plutonium is contained in a medical device designed for individual human application;

(b) The plutonium is contained in a material in which the specific activity is not greater than the activity concentration values for plutonium as specified in Table 7, and in which the radioactivity is essentially uniformly distributed;

(c) The plutonium is shipped in a single package containing no more than an A_2 quantity of plutonium in any isotope or form and is shipped in accordance with (5); or

(d) The plutonium is shipped in a package specifically authorized, in the certificate of compliance, issued by the Nuclear Regulatory Commission, for the shipment of plutonium by air and the licensee requires, through special arrangement with the carrier, compliance with 49 CFR 175.704, the US Department of Transportation regulations applicable to the air transport of plutonium.

(18) **Opening instructions.** Before delivery of a package to a carrier for transport, the licensee shall ensure that any special instructions needed to safely open the package have been sent to, or otherwise made available to, the consignee for the consignee's use in accordance with Rule 391-3-17-.03(12)(f).

(19) **Shipment Records.** Each licensee shall maintain for a period of three years after shipment a record of each shipment of licensed material not exempt under (4), showing, where applicable:

(a) Identification of the packaging by model number;

(b) Verification that there were no significant defects in the packaging, as shipped;

(c) Volume and identification of coolant;

(d) Type and quantity of licensed material in each package, and the total quantity of each shipment;

(e) Date of the shipment;

(f) Name and address of the transferee;

(g) Address to which the shipment was made; and

(h) Results of the determinations required by (16) and the conditions of the package approval.

(i) The licensee shall make available to the Division for inspection, upon reasonable notice, all records required by this part. Records are only valid if stamped, initialed, or signed and dated by authorized personnel, or otherwise authenticated.

(j) The licensee shall maintain sufficient written records to furnish evidence of the quality of packaging. The records to be maintained include results of the determinations required by 391-3-17-.06(15) and 10 CFR 71.85; design, fabrication, and assembly records; results of reviews, inspections, tests, and audits; results of monitoring work performance and materials analyses; and results of maintenance, modification, and repair activities. Inspection, test, and audit records must identify the inspector or data recorder, the type of observation, the results, the acceptability, and the action taken in connection with any deficiencies noted. These records must be retained for 3 years after the life of the packaging to which they apply.

(k) For each item of irradiated fissile material

1. Identification by model number and serial number;

2. Irradiation and decay history to the extent appropriate to demonstrate that its nuclear and thermal characteristics comply with license conditions; and

3. Any abnormal or unusual condition relevant to radiation safety;

(l) For fissile packages and for Type B packages, any special controls exercised.

(20) **Reports.** The licensee shall report to the Division within 30 days:

(a) Any instance in which there is significant reduction in the effectiveness of any authorized packaging during use; and

(b) Details of any defects with safety significance in the packaging after first use, with the means employed to repair the defects and prevent their recurrence.

(21) **Advance Notification of Transport of Nuclear Waste.**

(a) As specified in paragraphs (b), (c), and (d) of this section, each licensee shall provide advance notification to the governor of a State, or the governor's designee, of the shipment of licensed material, within or across the boundary of the State, before the transport, or delivery to a carrier, for transport, of licensed material outside the confines of the licensee's plant or other place of use or storage.

1. As specified in paragraphs (b), (c), and (d) of this section, after June 11, 2013, each licensee shall provide advance notification to the Tribal official of participating Tribes referenced in paragraph (d)3.(iii) of this section, or the official's designee, of the shipment of licensed material, within or across the boundary of the Tribe's reservation, before the transport, or delivery to a carrier, for transport, of licensed material outside the confines of the licensee's plant or other place of use or storage.

(b) Advance notification is also required when:

1. The licensed material is required to be in Type B packaging for transportation;

2. The licensed material is being transported into, within, or through, a state en route to a disposal facility or to a collection point for transport to a disposal facility; and

3. The quantity of licensed material in a single package exceeds the least of the following:

(i) 3000 times the A_1 value of the radionuclides as specified in Table 7, for special form radioactive material;

(ii) 3000 times the A_2 value of the radionuclides as specified in Table 7 for normal form radioactive material; or

(iii) 27,000 Ci (1000 TBq);

(c) Each advance notification required by .06(21)(a) shall contain the following information:

1. The name, address, and telephone number of the shipper, carrier, and receiver of the shipment;

2. A description of the nuclear waste contained in the shipment as required by 49 CFR 172.202 and 172.203(d);

3. The point of origin of the shipment and the seven-day period during which departure of the shipment is estimated to occur;

4. The seven-day period during which arrival of the shipment at state boundaries or Tribal reservation boundaries is estimated to occur;

5. The destination of the shipment, and the seven-day period during which arrival of the shipment is estimated to occur; and

6. A point of contact with a telephone number for current shipment information.

(d) Procedures for Submitting Advance Notification:

1. The notification required by .06(21)(a) shall be made in writing to the office of each appropriate governor, or governor's designee, to the office of each appropriate Tribal official or Tribal official's designee, and to the Division.

2. A notification delivered by mail must be postmarked at least seven days before the beginning of the seven-day period during which departure of the shipment is estimated to occur.

3. A notification delivered by any other means than mail must reach the office of the governor or of the governor's designee or the Tribal official or Tribal official's designee at least four days before the beginning of the seven-day period during which departure of the shipment is estimated to occur.

(i) A list of the names and mailing addresses of the governors' designees receiving advance notification of transportation of nuclear waste was published in the Federal Register on June 30, 1995 (60 FR 34306).

(ii) The list of governor's designees and Tribal official's designees of participating Tribes will be published annually in the Federal Register on or about June 30th to reflect any changes in information.

(iii) A list of the names and mailing addresses of the governors' designees and Tribal officials' designees of participating Tribes, including telephone and mailing addresses of Tribal official's designees, is available on the NRC Web site at: https://scp.nrc.gov/special/designee.pdf.

4. A copy of the notification shall be retained by the licensee for three years.

(e) A licensee who finds that schedule information previously furnished to a governor or governor's designee or a Tribal official or Tribal official's designee, in accordance with this section, will not be met, shall telephone a responsible individual in the office of the governor of the State or of the governor's designee or the Tribal official or the Tribal official's designee and inform that individual of the extent of the delay beyond the schedule originally reported. The licensee shall maintain a record of the name of the individual contacted for three years.

(f) Each licensee who cancels a nuclear waste shipment for which advance notification has been sent shall send a cancellation notice to the governor of each State or to the governor's designee previously notified, each Tribal official or to the Tribal official's designee previously notified, and to the Division.

1. The licensee shall state in the notice that it is a cancellation and identify the advance notification that is being cancelled. The licensee shall retain a copy of the notice as a record for 3 years.

(22) **Quality Assurance Requirements.**

This paragraph describes quality assurance requirements applying to design, purchase, fabrication, handling, shipping, storing, cleaning, assembly, inspection, testing, operation, maintenance, repair, and modification of components of packaging that are important to safety. As used in this paragraph, "quality assurance" comprises all those planned and systematic actions necessary to provide adequate confidence that a system or component will perform satisfactorily in service. Quality assurance includes quality control, which comprises those quality assurance actions related to control of the physical characteristics and quality of the material or component to predetermined requirements. Each licensee is responsible for satisfying the quality assurance requirements that apply to its use of a packaging for the shipment of licensed material subject to this subpart.

(a) Unless otherwise authorized by the Division, each licensee shall establish, maintain, and execute a quality assurance program to verify by procedures such as checking, auditing, and inspection that deficiencies, deviations, and defective material and equipment relating to the shipment of packages containing radioactive material are promptly identified and corrected.

(b) The licensee shall identify the material and components to be covered by the quality assurance program.

(c) Each licensee shall document the quality assurance program by written procedures or instructions and shall carry out the program in accordance with those procedures throughout the period during which packaging is used.

(d) Prior to the use of any package for the shipment of radioactive material, each licensee shall obtain approval by the Division of its quality assurance program.

(e) The licensee shall maintain sufficient written records to demonstrate compliance with the quality assurance program. Records of quality assurance pertaining to the use of a package for shipment of radioactive material shall be maintained for a period of three years after shipment.

(f) Radiography containers. A program for transport container inspection and maintenance limited to radiographic exposure devices, source changers, or packages transporting these devices and meeting the requirements of rule 391-3-17-.04(11)(d) and (e) or equivalent NRC or Agreement State requirement, is deemed to satisfy the requirements of 391-3-17-.06(7) and .06(22)(g).

(g) Establishment of program. Each licensee shall establish, maintain, and execute a quality assurance program satisfying each of the applicable criteria of 391-3-17-.06(22) and satisfying any specific provisions that are applicable to the licensee's activities including procurement of packaging. The licensee shall execute the applicable criteria in a graded approach to an extent that is commensurate with the quality assurance requirement's importance to safety.

(h) Approval of program.

1. Before the use of any package for the shipment of licensed material subject to this paragraph, each licensee shall obtain Division approval of its quality assurance program. Using an appropriate method listed in 391-3-17-.06(22),

each licensee shall file a description of its quality assurance program, including a discussion of which requirements of this subpart are applicable and how they will be satisfied, by submitting the description to: Georgia Department of Natural Resources/Environmental Protection Division, Radioactive Materials Program, at 4244 International Parkway, Suite 120, Atlanta, Georgia 30354.

(i) Quality Assurance Organization.

1. The licensee shall be responsible for the establishment and execution of the quality assurance program. The licensee may delegate to others, such as contractors, agents, or consultants, the work of establishing and executing the quality assurance program, or any part of the quality assurance program, but shall retain responsibility for the program. These activities include performing the functions associated with attaining quality objectives and the quality assurance functions.

2. The quality assurance functions are:

(i) Assuring that an appropriate quality assurance program is established and effectively executed; and

(ii) Verifying, by procedures such as checking, auditing, and inspection, that activities affecting the functions that are important to safety have been correctly performed.

(j) Changes to Quality Assurance Programs.

1. Each quality assurance program approval holder shall submit, in accordance with the requirements of 391-3-17-.01(13) and 391-3-17-.06(19), a description of a proposed change to its Georgia Department of Natural Resources Radioactive Materials Program approved quality assurance program that will reduce commitments in the program description as approved by the Georgia Department of Natural Resources Radioactive Materials Program. The quality assurance program approval holder shall not implement the change before receiving Georgia Department of Natural Resources Radioactive Materials Program approval.

(i) The description of a proposed change to the Georgia Department of Natural Resources Radioactive Materials Program approved quality assurance program must identify the change, the reason for the change, and the basis for concluding that the revised program incorporating the change continues to satisfy the applicable requirements of 391-3-17-.06(22).

(ii) [Reserved].

2. Each quality assurance program approval holder may change a previously approved quality assurance program without prior Georgia Department of Natural Resources Radioactive Materials Program approval, if the change does not reduce the commitments in the quality assurance program previously approved by the Georgia Department of Natural Resources Radioactive Materials Program. Changes to the quality assurance program that do not reduce the commitments shall be submitted to the Georgia Department of Natural Resources Radioactive Materials Program every 24 months, in accordance with 391-3-17-.01(13). In addition to quality assurance program changes involving administrative improvements and clarifications, spelling corrections, and non-substantive changes to punctuation or editorial items, the following changes are not considered reductions in commitment:

(i) The use of a quality assurance standard approved by the Georgia Department of Natural Resources Radioactive Materials Program that is more recent than the quality assurance standard in the applicant's current quality assurance program at the time of the change;

(ii) The use of generic organizational position titles that clearly denote the position function, supplemented as necessary by descriptive text, rather than specific titles, provided that there is no substantive change to either the functions of the position or reporting responsibilities;

(iii) The use of generic organizational charts to indicate functional relationships, authorities, and responsibilities, or alternatively, the use of descriptive text, provided that there is no substantive change to the functional relationships, authorities, or responsibilities;

(iv) The elimination of quality assurance program information that duplicates language in quality assurance regulatory guides and quality assurance standards to which the quality assurance program approval holder has committed to on record; and

(v) Organizational revisions that ensure that persons and organizations performing quality assurance functions continue to have the requisite authority and organizational freedom, including sufficient independence from cost and schedule when opposed to safety considerations.

3. Each quality assurance program approval holder shall maintain records of quality assurance program changes.

(k) Quality Assurance Records.

1. The licensee shall maintain sufficient written records to describe the activities affecting quality. These records must include changes to the quality assurance program as required by 391-3-17-.06(22)(j), the instructions, procedures, and drawings required by 10 CFR 71.111 to prescribe quality assurance activities, and closely related specifications such as required qualifications of personnel, procedures, and equipment. The records must include the instructions or procedures that establish a records retention program that is consistent with applicable regulations and designates factors such as duration, location, and assigned responsibility. The licensee shall retain these records for 3 years beyond the date when the licensee last engage in the activity for which the quality assurance program was developed. If any portion of the quality assurance program, written procedures or instructions is superseded, the licensee shall retain the superseded material for 3 years after it is superseded.

(23) **Determination of A_1 and A_2.**

(a) Values of A_1 and A_2 for individual radionuclides, which are the bases for many activity limits elsewhere in these regulations, are given in Table 4. The curie (Ci) values specified are obtained by converting from the Terabecquerel (TBq) value. The curie values are expressed to three significant figures to assure that the difference in the TBq and Ci quantities is one tenth of one percent or less. Where values of A_1 or A_2 are unlimited, it is for radiation control purposes only. For nuclear criticality safety, some materials are subject to controls placed on fissile material.

(b) 1. For individual radionuclides whose identities are known but are not listed in Table 4, the A_1 and A_2 values contained in Table 5 may be used. Otherwise, the licensee shall obtain prior Division approval of the A_1 and A_2 values for radionuclides not listed in Table 4, before shipping the material.

2. For individual radionuclides whose identities are known but are not listed in Table 7, the exempt material activity concentration and exempt consignment activity values contained in Table 5 may be used. Otherwise, the licensee shall obtain prior Division approval of the exempt material activity concentration and exempt consignment activity values for radionuclides not listed in Table 7, before shipping the material.

(c) In calculations of A_1 and A_2 for a radionuclide not in Table 4, a single radioactive decay chain, in which radionuclides are present in their naturally occurring proportions, and in which no daughter nuclide has a half-life either longer than 10 days, or longer than that of the parent nuclide, shall be considered as a single radionuclide, and the activity to be taken into account, and the A_1 and A_2 value to be applied shall be those corresponding to the parent nuclide of that chain. In the case of radioactive decay chains in which any daughter nuclide has a half-life either longer than ten days, or greater than of the parent nuclide, the parent and those daughters nuclides shall be considered as a mixture of different nuclides.

(d) Mixtures of radionuclides.

1. For mixture of radionuclides whose identities and respective activities are known, following conditions apply:

(i) For a special form radioactive material, the maximum quantity transported in a Type A package is as follows:

$$\sum_i \frac{B(i)}{A_1(i)} \leq 1$$

where B(i) is the activity of radionuclide i in special form, and $A_1(i)$ is the A_1 value for radionuclide i.

(ii) For normal form radio active material, the maximum quantity transported in a Type A package is as follows:

$$\sum_i \frac{B(i)}{A_2(i)} \leq 1$$

where B(i) is the activity of radionuclide i in normal form, and $A_2(i)$ is the A_2 value for radionuclide i.

(iii) If the package contains both special and normal form radioactive material, the activity that may be transported in a Type A package is as follows:

$$\sum_i \frac{B(i)}{A_1(i)} + \sum_j \frac{C(j)}{A_2(j)} \leq 1$$

where B(i) is the activity of radionuclide i as special form radioactive material, A_1 (i) is the A_1 value for radionuclide i, C(j) is the activity of radionuclide j as normal form radioactive material, and A_2 (j) is the A_2 value for radionuclide j.

(iv) Alternatively, the A_1 value for mixtures of special form material may be determined as follows:

A_1 for mixture =

$$\frac{1}{\sum_i \frac{f(i)}{A_1(i)}}$$

where f(i) is the fraction of activity for radionuclide i in the mixture and A_1 (i) is the appropriate A_1 value for radionuclide i.

(v) Alternatively, the A_2 value for mixtures of normal form material may be determined as follows:

A_2 for mixture =

$$\frac{1}{\sum_i \frac{f(i)}{A_2(i)}}$$

where f(i) is the fraction of activity of radionuclide i in the mixture and $A_2(i)$ is the appropriate A_2 value for radionuclide i.

(e) The exempt activity concentration for mixtures of radionuclides may be determined as follows:

Exempt activity concentration for mixture =

$$\frac{1}{\sum_i \frac{f(i)}{[A](i)}}$$

where f(i) is the fraction activity concentration of radionuclide i in the mixture and [A] (i) is the activity concentration for exempt material containing radionuclide i.

(f) The activity limit for an exempt consignment for mixtures of radionuclides may be determined as follows:

Exempt consignment activity limit for mixture =

$$\frac{1}{\sum_i \frac{f(i)}{A(i)}}$$

where f(i) is the fraction of activity of radionuclide i in the mixture and [A] is the activity limit for exempt consignments for radionuclide i.

(g) 1. When the identity of each radionuclide is known, but the individual activities of some of the radionuclides are not known, the radionuclides may be grouped, and the lowest A_1 or A_2 value, as appropriate, for the radionuclides in each group may be used in applying formulas above. Groups may be based on the total alpha activity and the total beta/gamma activity when these are known, using the lowest A_1 or A_2 values for the alpha emitters and beta/gamma emitters.

2. When the identity of each radionuclide is known, but the individual activities of some of the radionuclides are not known, the radionuclides may be grouped, and the lowest [A] (activity concentration for exempt material) or A (activity limit for exempt consignment) value, as appropriate, for the radionuclides in each group may be used in applying the formulas in paragraph 391-3-17-.06(23). Groups may be based on the total alpha activity and the total beta/gamma activity when these are known, using the lowest [A] or A values for the alpha emitters and beta/gamma emitters, respectively.

Table 4 - A_1 and A_2 VALUES FOR RADIONUCLIDES

Symbol of radionuclide	Element and atomic number	A_1 (TBq)	A_1 (Ci)[b]	A_2 (TBq)	A_2 (Ci)[b]	Specific activity (TBq/g)	Specific activity (Ci/g)
Ac-225 (a)	Actinium (89)	$8.0X10^{-1}$	$2.2X10^{1}$	$6.0X10^{-3}$	$1.6X10^{-1}$	$2.1X10^{3}$	$5.8X10^{4}$
Ac-227 (a)		$9.0X10^{-1}$	$2.4X10^{1}$	$9.0X10^{-5}$	$2.4X10^{-3}$	2.7	$7.2X10^{1}$
Ac-228		$6.0X10^{-1}$	$1.6X10^{1}$	$5.0X10^{-1}$	$1.4X10^{1}$	$8.4X10^{4}$	$2.2X10^{6}$
Ag-105	Silver (47)	2.0	$5.4X10^{1}$	2.0	$5.4X10^{1}$	$1.1X10^{3}$	$3.0X10^{4}$
Ag-108m (a)		$7.0X10^{-1}$	$1.9X10^{1}$	$7.0X10^{-1}$	$1.9X10^{1}$	$9.7X10^{-1}$	$2.6X10^{1}$
Ag-110m (a)		$4.0X10^{-1}$	$1.1X10^{1}$	$4.0X10^{-1}$	$1.1X10^{1}$	$1.8X10^{2}$	$4.7X10^{3}$
Ag-111		2.0	$5.4X10^{1}$	$6.0X10^{-1}$	$1.6X10^{1}$	$5.8X10^{3}$	$1.6X10^{5}$
Al-26	Aluminum (13)	$1.0X10^{-1}$	2.7	$1.0X10^{-1}$	2.7	$7.0X10^{-4}$	$1.9X10^{-2}$
Am-241	Americium (95)	$1.0X10^{1}$	$2.7X10^{2}$	$1.0X10^{-3}$	$2.7X10^{-2}$	$1.3X10^{-1}$	3.4
Am-242m (a)		$1.0X10^{1}$	$2.7X10^{2}$	$1.0X10^{-3}$	$2.7X10^{-2}$	$3.6X10^{-1}$	$1.0X10^{1}$
Am-243 (a)		5.0	$1.4X10^{2}$	$1.0X10^{-3}$	$2.7X10^{-2}$	$7.4X10^{-3}$	$2.0X10^{-1}$
Ar-37	Argon (18)	$4.0X10^{1}$	$1.1X10^{3}$	$4.0X10^{1}$	$1.1X10^{3}$	$3.7X10^{3}$	$9.9X10^{4}$
Ar-39		$4.0X10^{1}$	$1.1X10^{3}$	$2.0X10^{1}$	$5.4X10^{2}$	1.3	$3.4X10^{1}$
Ar-41		$3.0X10^{-1}$	8.1	$3.0X10^{-1}$	8.1	$1.5X10^{6}$	$4.2X10^{7}$

Symbol of radionuclide	Element and atomic number	A_1 (TBq)	A_1 (Ci)[b]	A_2 (TBq)	A_2 (Ci)[b]	Specific activity (TBq/g)	(Ci/g)
As-72	Arsenic (33)	$3.0X10^{-1}$	8.1	$3.0X10^{-1}$	8.1	$6.2X10^{4}$	$1.7X10^{6}$
As-73		$4.0X10^{1}$	$1.1X10^{3}$	$4.0X10^{1}$	$1.1X10^{3}$	$8.2X10^{2}$	$2.2X10^{4}$
As-74		1.0	$2.7X10^{1}$	$9.0X10^{-1}$	$2.4X10^{1}$	$3.7X10^{3}$	$9.9X10^{4}$
As-76		$3.0X10^{-1}$	8.1	$3.0X10^{-1}$	8.1	$5.8X10^{4}$	$1.6X10^{6}$
As-77		$2.0X10^{1}$	$5.4X10^{2}$	$7.0X10^{-1}$	$1.9X10^{1}$	$3.9X10^{4}$	$1.0X10^{6}$
At-211 (a)	Astatine (85)	$2.0X10^{1}$	$5.4X10^{2}$	$5.0X10^{-1}$	$1.4X10^{1}$	$7.6X10^{4}$	$2.1X10^{6}$
Au-193	Gold (79)	7.0	$1.9X10^{2}$	2.0	$5.4X10^{1}$	$3.4X10^{4}$	$9.2X10^{5}$
Au-194		1.0	$2.7X10^{1}$	1.0	$2.7X10^{1}$	$1.5X10^{4}$	$4.1X10^{5}$
Au-195		$1.0X10^{1}$	$2.7X10^{2}$	6.0	$1.6X10^{2}$	$1.4X10^{2}$	$3.7X10^{3}$
Au-198		1.0	$2.7X10^{1}$	$6.0X10^{-1}$	$1.6X10^{1}$	$9.0X10^{3}$	$2.4X10^{5}$
Au-199		$1.0X10^{1}$	$2.7X10^{2}$	$6.0X10^{-1}$	$1.6X10^{1}$	$7.7X10^{3}$	$2.1X10^{5}$
Ba-131 (a)	Barium (56)	2.0	$5.4X10^{1}$	2.0	$5.4X10^{1}$	$3.1X10^{3}$	$8.4X10^{4}$
Ba-133		3.0	$8.1X10^{1}$	3.0	$8.1X10^{1}$	9.4	$2.6X10^{2}$
Ba-133m		$2.0X10^{1}$	$5.4X10^{2}$	$6.0X10^{-1}$	$1.6X10^{1}$	$2.2X10^{4}$	$6.1X10^{5}$
Ba-140 (a)		$5.0X10^{-1}$	$1.4X10^{1}$	$3.0X10^{-1}$	8.1	$2.7X10^{3}$	$7.3X10^{4}$
Be-7	Beryllium (4)	$2.0X10^{1}$	$5.4X10^{2}$	$2.0X10^{1}$	$5.4X10^{2}$	$1.3X10^{4}$	$3.5X10^{5}$
Be-10		$4.0X10^{1}$	$1.1X10^{3}$	$6.0X10^{-1}$	$1.6X10^{1}$	$8.3X10^{-4}$	$2.2X10^{-2}$
Bi-205	Bismuth (83)	$7.0X10^{-1}$	$1.9X10^{1}$	$7.0X10^{-1}$	$1.9X10^{1}$	$1.5X10^{3}$	$4.2X10^{4}$
Bi-206		$3.0X10^{-1}$	8.1	$3.0X10^{-1}$	8.1	$3.8X10^{3}$	$1.0X10^{5}$
Bi-207		$7.0X10^{-1}$	$1.9X10^{1}$	$7.0X10^{-1}$	$1.9X10^{1}$	1.9	$5.2X10^{1}$
Bi-210		1.0	$2.7X10^{1}$	$6.0X10^{-1}$	$1.6X10^{1}$	$4.6X10^{3}$	$1.2X10^{5}$
Bi-210m (a)		$6.0X10^{-1}$	$1.6X10^{1}$	$2.0X10^{-2}$	$5.4X10^{-1}$	$2.1X10^{-5}$	$5.7X10^{-4}$
Bi-212 (a)		$7.0X10^{-1}$	$1.9X10^{1}$	$6.0X10^{-1}$	$1.6X10^{1}$	$5.4X10^{5}$	$1.5X10^{7}$
Bk-247	Berkelium (97)	8.0	$2.2X10^{2}$	$8.0X10^{-4}$	$2.2X10^{-2}$	$3.8X10^{-2}$	1.0
Bk-249 (a)		$4.0X10^{1}$	$1.1X10^{3}$	$3.0X10^{-1}$	8.1	$6.1X10^{1}$	$1.6X10^{3}$
Br-76	Bromine (35)	$4.0X10^{-1}$	$1.1X10^{1}$	$4.0X10^{-1}$	$1.1X10^{1}$	$9.4X10^{4}$	$2.5X10^{6}$
Br-77		3.0	$8.1X10^{1}$	3.0	$8.1X10^{1}$	$2.6X10^{4}$	$7.1X10^{5}$
Br-82		$4.0X10^{-1}$	$1.1X10^{1}$	$4.0X10^{-1}$	$1.1X10^{1}$	$4.0X10^{4}$	$1.1X10^{6}$
C-11	Carbon (6)	1.0	$2.7X10^{1}$	$6.0X10^{-1}$	$1.6X10^{1}$	$3.1X10^{7}$	$8.4X10^{8}$
C-14		$4.0X10^{1}$	$1.1X10^{3}$	3.0	$8.1X10^{1}$	$1.6X10^{-1}$	4.5
Ca-41	Calcium (20)	Unlimited	Unlimited	Unlimited	Unlimited	$3.1X10^{-3}$	$8.5X10^{-2}$
Ca-45		$4.0X10^{1}$	$1.1X10^{3}$	1.0	$2.7X10^{1}$	$6.6X10^{2}$	$1.8X10^{4}$
Ca-47 (a)		3.0	$8.1X10^{1}$	$3.0X10^{-1}$	8.1	$2.3X10^{4}$	$6.1X10^{5}$
Cd-109	Cadmium (48)	$3.0X10^{1}$	$8.1X10^{2}$	2.0	$5.4X10^{1}$	$9.6X10^{1}$	$2.6X10^{3}$
Cd-113m		$4.0X10^{1}$	$1.1X10^{3}$	$5.0X10^{-1}$	$1.4X10^{1}$	8.3	$2.2X10^{2}$
Cd-115 (a)		3.0	$8.1X10^{1}$	$4.0X10^{-1}$	$1.1X10^{1}$	$1.9X10^{4}$	$5.1X10^{5}$
Cd-115m		$5.0X10^{-1}$	$1.4X10^{1}$	$5.0X10^{-1}$	$1.4X10^{1}$	$9.4X10^{2}$	$2.5X10^{4}$
Ce-139	Cerium (58)	7.0	$1.9X10^{2}$	2.0	$5.4X10^{1}$	$2.5X10^{2}$	$6.8X10^{3}$
Ce-141		$2.0X10^{1}$	$5.4X10^{2}$	$6.0X10^{-1}$	$1.6X10^{1}$	$1.1X10^{3}$	$2.8X10^{4}$
Ce-143		$9.0X10^{-1}$	$2.4X10^{1}$	$6.0X10^{-1}$	$1.6X10^{1}$	$2.5X10^{4}$	$6.6X10^{5}$
Ce-144 (a)		$2.0X10^{-1}$	5.4	$2.0X10^{-1}$	5.4	$1.2X10^{2}$	$3.2X10^{3}$
Cf-248	Californium (98)	$4.0X10^{1}$	$1.1X10^{3}$	$6.0X10^{-3}$	$1.6X10^{-1}$	$5.8X10^{1}$	$1.6X10^{3}$
Cf-249		3.0	$8.1X10^{1}$	$8.0X10^{-4}$	$2.2X10^{-2}$	$1.5X10^{-1}$	4.1
Cf-250		$2.0X10^{1}$	$5.4X10^{2}$	$2.0X10^{-3}$	$5.4X10^{-2}$	4.0	$1.1X10^{2}$
Cf-251		7.0	$1.9X10^{2}$	$7.0X10^{-4}$	$1.9X10^{-2}$	$5.9X10^{-2}$	1.6
Cf-252		$1.0X10^{-1}$	2.7	$3.0X10^{-3}$	$8.1X10^{-2}$	$2.0X10^{1}$	$5.4X10^{2}$
Cf-253 (a)		$4.0X10^{1}$	$1.1X10^{3}$	$4.0X10^{-2}$	1.1	$1.1X10^{3}$	$2.9X10^{4}$
Cf-254		$1.0X10^{-3}$	$2.7X10^{-2}$	$1.0X10^{-3}$	$2.7X10^{-2}$	$3.1X10^{2}$	$8.5X10^{3}$
Cl-36	Chlorine (17)	$1.0X10^{1}$	$2.7X10^{2}$	$6.0X10^{-1}$	$1.6X10^{1}$	$1.2X10^{-3}$	$3.3X10^{-2}$
Cl-38		$2.0X10^{-1}$	5.4	$2.0X10^{-1}$	5.4	$4.9X10^{6}$	$1.3X10^{8}$
Cm-240	Curium (96)	$4.0X10^{1}$	$1.1X10^{3}$	$2.0X10^{-2}$	$5.4X10^{-1}$	$7.5X10^{2}$	$2.0X10^{4}$
Cm-241		2.0	$5.4X10^{1}$	1.0	$2.7X10^{1}$	$6.1X10^{2}$	$1.7X10^{4}$

Symbol of radionuclide	Element and atomic number	A_1 (TBq)	A_1 (Ci)[b]	A_2 (TBq)	A_2 (Ci)[b]	Specific activity (TBq/g)	(Ci/g)
Cm-242		$4.0X10^{1}$	$1.1X10^{3}$	$1.0X10^{-2}$	$2.7X10^{-1}$	$1.2X10^{2}$	$3.3X10^{3}$
Cm-243		9.0	$2.4X10^{2}$	$1.0X10^{-3}$	$2.7X10^{-2}$	$1.9X10^{-3}$	$5.2X10^{1}$
Cm-244		$2.0X10^{1}$	$5.4X10^{2}$	$2.0X10^{-3}$	$5.4X10^{-2}$	3.0	$8.1X10^{1}$
Cm-245		9.0	$2.4X10^{2}$	$9.0X10^{-4}$	$2.4X10^{-2}$	$6.4X10^{-3}$	$1.7X10^{-1}$
Cm-246		9.0	$2.4X10^{2}$	$9.0X10^{-4}$	$2.4X10^{-2}$	$1.1X10^{-2}$	$3.1X10^{-1}$
Cm-247 (a)		3.0	$8.1X10^{1}$	$1.0X10^{-3}$	$2.7X10^{-2}$	$3.4X10^{-6}$	$9.3X10^{-5}$
Cm-248		$2.0X10^{-2}$	$5.4X10^{-1}$	$3.0X10^{-4}$	$8.1X10^{-3}$	$1.6X10^{-4}$	$4.2X10^{-3}$
Co-55	Cobalt (27)	$5.0X10^{-1}$	$1.4X10^{1}$	$5.0X10^{-1}$	$1.4X10^{1}$	$1.1X10^{5}$	$3.1X10^{6}$
Co-56		$3.0X10^{-1}$	8.1	$3.0X10^{-1}$	8.1	$1.1X10^{3}$	$3.0X10^{4}$
Co-57		$1.0X10^{1}$	$2.7X10^{2}$	$1.0X10^{1}$	$2.7X10^{2}$	$3.1X10^{2}$	$8.4X10^{3}$
Co-58		1.0	$2.7X10^{1}$	1.0	$2.7X10^{1}$	$1.2X10^{3}$	$3.2X10^{4}$
Co-58m		$4.0X10^{1}$	$1.1X10^{3}$	$4.0X10^{1}$	$1.1X10^{3}$	$2.2X10^{5}$	$5.9X10^{6}$
Co-60		$4.0X10^{-1}$	$1.1X10^{1}$	$4.0X10^{-1}$	$1.1X10^{1}$	$4.2X10^{1}$	$1.1X10^{3}$
Cr-51	Chromium (24)	$3.0X10^{1}$	$8.1X10^{2}$	$3.0X10^{1}$	$8.1X10^{2}$	$3.4X10^{3}$	$9.2X10^{4}$
Cs-129	Cesium (55)	4.0	$1.1X10^{2}$	4.0	$1.1X10^{2}$	$2.8X10^{4}$	$7.6X10^{5}$
Cs-131		$3.0X10^{1}$	$8.1X10^{2}$	$3.0X10^{1}$	$8.1X10^{2}$	$3.8X10^{3}$	$1.0X10^{5}$
Cs-132		1.0	$2.7X10^{1}$	1.0	$2.7X10^{1}$	$5.7X10^{3}$	$1.5X10^{5}$
Cs-134		$7.0X10^{-1}$	$1.9X10^{1}$	$7.0X10^{-1}$	$1.9X10^{1}$	$4.8X10^{1}$	$1.3X10^{3}$
Cs-134m		$4.0X10^{1}$	$1.1X10^{3}$	$6.0X10^{-1}$	$1.6X10^{1}$	$3.0X10^{5}$	$8.0X10^{6}$
Cs-135		$4.0X10^{1}$	$1.1X10^{3}$	1.0	$2.7X10^{1}$	$4.3X10^{-5}$	$1.2X10^{-3}$
Cs-136		$5.0X10^{-1}$	$1.4X10^{1}$	$5.0X10^{-1}$	$1.4X10^{1}$	$2.7X10^{3}$	$7.3X10^{4}$
Cs-137 (a)		2.0	$5.4X10^{1}$	$6.0X10^{-1}$	$1.6X10^{1}$	3.2	$8.7X10^{1}$
Cu-64	Copper (29)	6.0	$1.6X10^{2}$	1.0	$2.7X10^{1}$	$1.4X10^{5}$	$3.9X10^{6}$
Cu-67		$1.0X10^{1}$	$2.7X10^{2}$	$7.0X10^{-1}$	$1.9X10^{1}$	$2.8X10^{4}$	$7.6X10^{5}$
Dy-159	Dysprosium (66)	$2.0X10^{1}$	$5.4X10^{2}$	$2.0X10^{1}$	$5.4X10^{2}$	$2.1X10^{2}$	$5.7X10^{3}$
Dy-165		$9.0X10^{-1}$	$2.4X10^{1}$	$6.0X10^{-1}$	$1.6X10^{1}$	$3.0X10^{5}$	$8.2X10^{6}$
Dy-166 (a)		$9.0X10^{-1}$	$2.4X10^{1}$	$3.0X10^{-1}$	8.1	$8.6X10^{3}$	$2.3X10^{5}$
Er-169	Erbium (68)	$4.0X10^{1}$	$1.1X10^{3}$	1.0	$2.7X10^{1}$	$3.1X10^{3}$	$8.3X10^{4}$
Er-171		$8.0X10^{-1}$	$2.2X10^{1}$	$5.0X10^{-1}$	$1.4X10^{1}$	$9.0X10^{4}$	$2.4X10^{6}$
Eu-147	Europium (63)	2.0	$5.4X10^{1}$	2.0	$5.4X10^{1}$	$1.4X10^{3}$	$3.7X10^{4}$
Eu-148		$5.0X10^{-1}$	$1.4X10^{1}$	$5.0X10^{-1}$	$1.4X10^{1}$	$6.0X10^{2}$	$1.6X10^{4}$
Eu-149		$2.0X10^{1}$	$5.4X10^{2}$	$2.0X10^{1}$	$5.4X10^{2}$	$3.5X10^{2}$	$9.4X10^{3}$
Eu-150 (short-lived)		2.0	$5.4X10^{1}$	$7.0X10^{-1}$	$1.9X10^{1}$	$6.1X10^{4}$	$1.6X10^{6}$
Eu-150 (long-lived)		$7.0X10^{-1}$	$1.9X10^{1}$	$7.0X10^{-1}$	$1.9X10^{1}$	$6.1X10^{4}$	$1.6X10^{6}$
Eu-152		1.0	$2.7X10^{1}$	1.0	$2.7X10^{1}$	6.5	$1.8X10^{2}$
Eu-152m		$8.0X10^{-1}$	$2.2X10^{1}$	$8.0X10^{-1}$	$2.2X10^{1}$	$8.2X10^{4}$	$2.2X10^{6}$
Eu-154		$9.0X10^{-1}$	$2.4X10^{1}$	$6.0X10^{-1}$	$1.6X10^{1}$	9.8	$2.6X10^{2}$
Eu-155		$2.0X10^{1}$	$5.4X10^{2}$	3.0	$8.1X10^{1}$	$1.8X10^{1}$	$4.9X10^{2}$
Eu-156		$7.0X10^{-1}$	$1.9X10^{1}$	$7.0X10^{-1}$	$1.9X10^{1}$	$2.0X10^{3}$	$5.5X10^{4}$
F-18	Fluorine (9)	1.0	$2.7X10^{1}$	$6.0X10^{-1}$	$1.6X10^{1}$	$3.5X10^{6}$	$9.5X10^{7}$
Fe-52 (a)	Iron (26)	$3.0X10^{-1}$	8.1	$3.0X10^{-1}$	8.1	$2.7X10^{5}$	$7.3X10^{6}$
Fe-55		$4.0X10^{1}$	$1.1X10^{3}$	$4.0X10^{1}$	$1.1X10^{3}$	$8.8X10^{1}$	$2.4X10^{3}$
Fe-59		$9.0X10^{-1}$	$2.4X10^{1}$	$9.0X10^{-1}$	$2.4X10^{1}$	$1.8X10^{3}$	$5.0X10^{4}$
Fe-60 (a)		$4.0X10^{1}$	$1.1X10^{3}$	$2.0X10^{-1}$	5.4	$7.4X10^{-4}$	$2.0X10^{-2}$
Ga-67	Gallium (31)	7.0	$1.9X10^{2}$	3.0	$8.1X10^{1}$	$2.2X10^{4}$	$6.0X10^{5}$
Ga-68		$5.0X10^{-1}$	$1.4X10^{1}$	$5.0X10^{-1}$	$1.4X10^{1}$	$1.5X10^{6}$	$4.1X10^{7}$
Ga-72		$4.0X10^{-1}$	$1.1X10^{1}$	$4.0X10^{-1}$	$1.1X10^{1}$	$1.1X10^{5}$	$3.1X10^{6}$
Gd-146 (a)	Gadolinium (64)	$5.0X10^{-1}$	$1.4X10^{1}$	$5.0X10^{-1}$	$1.4X10^{1}$	$6.9X10^{2}$	$1.9X10^{4}$
Gd-148		$2.0X10^{1}$	$5.4X10^{2}$	$2.0X10^{-3}$	$5.4X10^{-2}$	1.2	$3.2X10^{1}$
Gd-153		$1.0X10^{1}$	$2.7X10^{2}$	9.0	$2.4X10^{2}$	$1.3X10^{2}$	$3.5X10^{3}$

Symbol of radionuclide	Element and atomic number	A_1 (TBq)	A_1 (Ci)[b]	A_2 (TBq)	A_2 (Ci)[b]	Specific activity (TBq/g)	(Ci/g)
Gd-159		3.0	$8.1X10^{1}$	$6.0X10^{-1}$	$1.6X10^{1}$	$3.9X10^{4}$	$1.1X10^{6}$
Ge-68 (a)	Germanium (32)	$5.0X10^{-1}$	$1.4X10^{1}$	$5.0X10^{-1}$	$1.4X10^{1}$	$2.6X10^{2}$	$7.1X10^{3}$
Ge-71		$4.0X10^{1}$	$1.1X10^{3}$	$4.0X10^{1}$	$1.1X10^{3}$	$5.8X10^{3}$	$1.6X10^{5}$
Ge-77		$3.0X10^{-1}$	8.1	$3.0X10^{-1}$	8.1	$1.3X10^{5}$	$3.6X10^{6}$
Hf-172 (a)	Hafnium (72)	$6.0X10^{-1}$	$1.6X10^{1}$	$6.0X10^{-1}$	$1.6X10^{1}$	$4.1X10^{1}$	$1.1X10^{3}$
Hf-175		3.0	$8.1X10^{1}$	3.0	$8.1X10^{1}$	$3.9X10^{2}$	$1.1X10^{4}$
Hf-181		2.0	$5.4X10^{1}$	$5.0X10^{-1}$	$1.4X10^{1}$	$6.3X10^{2}$	$1.7X10^{4}$
Hf-182		Unlimited	Unlimited	Unlimited	Unlimited	$8.1X10^{-6}$	$2.2X10^{-4}$
Hg-194 (a)	Mercury (80)	1.0	$2.7X10^{1}$	1.0	$2.7X10^{1}$	$1.3X10^{-1}$	3.5
Hg-195m (a)		3.0	$8.1X10^{1}$	$7.0X10^{-1}$	$1.9X10^{1}$	$1.5X10^{4}$	$4.0X10^{5}$
Hg-197		$2.0X10^{1}$	$5.4X10^{2}$	$1.0X10^{1}$	$2.7X10^{2}$	$9.2X10^{3}$	$2.5X10^{5}$
Hg-197m		$1.0X10^{1}$	$2.7X10^{2}$	$4.0X10^{-1}$	$1.1X10^{1}$	$2.5X10^{4}$	$6.7X10^{5}$
Hg-203		5.0	$1.4X10^{2}$	1.0	$2.7X10^{1}$	$5.1X10^{2}$	$1.4X10^{4}$
Ho-166	Holmium (67)	$4.0X10^{-1}$	$1.1X10^{1}$	$4.0X10^{-1}$	$1.1X10^{1}$	$2.6X10^{4}$	$7.0X10^{5}$
Ho-166m		$6.0X10^{-1}$	$1.6X10^{1}$	$5.0X10^{-1}$	$1.4X10^{1}$	$6.6X10^{-2}$	1.8
I-123	Iodine (53)	6.0	$1.6X10^{2}$	3.0	$8.1X10^{1}$	$7.1X10^{4}$	$1.9X10^{6}$
I-124		1.0	$2.7X10^{1}$	1.0	$2.7X10^{1}$	$9.3X10^{3}$	$2.5X10^{5}$
I-125		$2.0X10^{1}$	$5.4X10^{2}$	3.0	$8.1X10^{1}$	$6.4X10^{2}$	$1.7X10^{4}$
I-126		2.0	$5.4X10^{1}$	1.0	$2.7X10^{1}$	$2.9X10^{3}$	$8.0X10^{4}$
I-129		Unlimited	Unlimited	Unlimited	Unlimited	$6.5X10^{-6}$	$1.8X10^{-4}$
I-131		3.0	$8.1X10^{1}$	$7.0X10^{-1}$	$1.9X10^{1}$	$4.6X10^{3}$	$1.2X10^{5}$
I-132		$4.0X10^{-1}$	$1.1X10^{1}$	$4.0X10^{-1}$	$1.1X10^{1}$	$3.8X10^{5}$	$1.0X10^{7}$
I-133		$7.0X10^{-1}$	$1.9X10^{1}$	$6.0X10^{-1}$	$1.6X10^{1}$	$4.2X10^{4}$	$1.1X10^{6}$
I-134		$3.0X10^{-1}$	8.1	$3.0X10^{-1}$	8.1	$9.9X10^{5}$	$2.7X10^{7}$
I-135 (a)		$6.0X10^{-1}$	$1.6X10^{1}$	$6.0X10^{-1}$	$1.6X10^{1}$	$1.3X10^{5}$	$3.5X10^{6}$
In-111	Indium (49)	3.0	$8.1X10^{1}$	3.0	$8.1X10^{1}$	$1.5X10^{4}$	$4.2X10^{5}$
In-113m		4.0	$1.1X10^{2}$	2.0	$5.4X10^{1}$	$6.2X10^{5}$	$1.7X10^{7}$
In-114m (a)		$1.0X10^{1}$	$2.7X10^{2}$	$5.0X10^{-1}$	$1.4X10^{1}$	$8.6X10^{2}$	$2.3X10^{4}$
In-115m		7.0	$1.9X10^{2}$	1.0	$2.7X10^{1}$	$2.2X10^{5}$	$6.1X10^{6}$
Ir-189 (a)	Iridium (77)	$1.0X10^{1}$	$2.7X10^{2}$	$1.0X10^{1}$	$2.7X10^{2}$	$1.9X10^{3}$	$5.2X10^{4}$
Ir-190		$7.0X10^{-1}$	$1.9X10^{1}$	$7.0X10^{-1}$	$1.9X10^{1}$	$2.3X10^{3}$	$6.2X10^{4}$
Ir-192		[c]1.0	[c]$2.7X10^{1}$	$6.0X10^{-1}$	$1.6X10^{1}$	$3.4X10^{2}$	$9.2X10^{3}$
Ir-194		$3.0X10^{-1}$	8.1	$3.0X10^{-1}$	8.1	$3.1X10^{4}$	$8.4X10^{5}$
K-40	Potassium (19)	$9.0X10^{-1}$	$2.4X10^{1}$	$9.0X10^{-1}$	$2.4X10^{1}$	$2.4X10^{-7}$	$6.4X10^{-6}$
K-42		$2.0X10^{-1}$	5.4	$2.0X10^{-1}$	5.4	$2.2X10^{5}$	$6.0X10^{6}$
K-43		$7.0X10^{-1}$	$1.9X10^{1}$	$6.0X10^{-1}$	$1.6X10^{1}$	$1.2X10^{5}$	$3.3X10^{6}$
Kr-79	Krypton (36)	4.0	$1.1X10^{2}$	2.0	$5.4X10^{1}$	$4.2X10^{4}$	$1.1X10^{6}$
Kr-81		$4.0X10^{1}$	$1.1X10^{3}$	$4.0X10^{1}$	$1.1X10^{3}$	$7.8X10^{-4}$	$2.1X10^{-2}$
Kr-85		$1.0X10^{1}$	$2.7X10^{2}$	$1.0X10^{1}$	$2.7X10^{2}$	$1.5X10^{1}$	$3.9X10^{2}$
Kr-85m		8.0	$2.2X10^{2}$	3.0	$8.1X10^{1}$	$3.0X10^{5}$	$8.2X10^{6}$
Kr-87		$2.0X10^{-1}$	5.4	$2.0X10^{-1}$	5.4	$1.0X10^{6}$	$2.8X10^{7}$
La-137	Lanthanum (57)	$3.0X10^{1}$	$8.1X10^{2}$	6.0	$1.6X10^{2}$	$1.6X10^{-3}$	$4.4X10^{-2}$
La-140		$4.0X10^{-1}$	$1.1X10^{1}$	$4.0X10^{-1}$	$1.1X10^{1}$	$2.1X10^{4}$	$5.6X10^{5}$
Lu-172	Lutetium (71)	$6.0X10^{-1}$	$1.6X10^{1}$	$6.0X10^{-1}$	$1.6X10^{1}$	$4.2X10^{3}$	$1.1X10^{5}$
Lu-173		8.0	$2.2X10^{2}$	8.0	$2.2X10^{2}$	$5.6X10^{1}$	$1.5X10^{3}$
Lu-174		9.0	$2.4X10^{2}$	9.0	$2.4X10^{2}$	$2.3X10^{1}$	$6.2X10^{2}$
Lu-174m		$2.0X10^{1}$	$5.4X10^{2}$	$1.0X10^{1}$	$2.7X10^{2}$	$2.0X10^{2}$	$5.3X10^{3}$
Lu-177		$3.0X10^{1}$	$8.1X10^{2}$	$7.0X10^{-1}$	$1.9X10^{1}$	$4.1X10^{3}$	$1.1X10^{5}$
Mg-28 (a)	Magnesium (12)	$3.0X10^{-1}$	8.1	$3.0X10^{-1}$	8.1	$2.0X10^{5}$	$5.4X10^{6}$
Mn-52	Manganese (25)	$3.0X10^{-1}$	8.1	$3.0X10^{-1}$	8.1	$1.6X10^{4}$	$4.4X10^{5}$
Mn-53		Unlimited	Unlimited	Unlimited	Unlimited	$6.8X10^{-5}$	$1.8X10^{-3}$
Mn-54		1.0	$2.7X10^{1}$	1.0	$2.7X10^{1}$	$2.9X10^{2}$	$7.7X10^{3}$

Symbol of radionuclide	Element and atomic number	A_1 (TBq)	A_1 (Ci)[b]	A_2 (TBq)	A_2 (Ci)[b]	Specific activity (TBq/g)	(Ci/g)
Mn-56		$3.0X10^{-1}$	8.1	$3.0X10^{-1}$	8.1	$8.0X10^{5}$	$2.2X10^{7}$
Mo-93	Molybdenum (42)	$4.0X10^{1}$	$1.1X10^{3}$	$2.0X10^{1}$	$5.4X10^{2}$	$4.1X10^{-2}$	1.1
Mo-99 (a) (h)		1.0	$2.7X10^{1}$	$6.0X10^{-1}$	$1.6X10^{1}$	$1.8X10^{4}$	$4.8X10^{5}$
N-13	Nitrogen (7)	$9.0X10^{-1}$	$2.4X10^{1}$	$6.0X10^{-1}$	$1.6X10^{1}$	$5.4X10^{7}$	$1.5X10^{9}$
Na-22	Sodium (11)	$5.0X10^{-1}$	$1.4X10^{1}$	$5.0X10^{-1}$	$1.4X10^{1}$	$2.3X10^{2}$	$6.3X10^{3}$
Na-24		$2.0X10^{-1}$	5.4	$2.0X10^{-1}$	5.4	$3.2X10^{5}$	$8.7X10^{6}$
Nb-93m	Niobium (41)	$4.0X10^{1}$	$1.1X10^{3}$	$3.0X10^{1}$	$8.1X10^{2}$	8.8	$2.4X10^{2}$
Nb-94		$7.0X10^{-1}$	$1.9X10^{1}$	$7.0X10^{-1}$	$1.9X10^{1}$	$6.9X10^{-3}$	$1.9X10^{-1}$
Nb-95		1.0	$2.7X10^{1}$	1.0	$2.7X10^{1}$	$1.5X10^{3}$	$3.9X10^{4}$
Nb-97		$9.0X10^{-1}$	$2.4X10^{1}$	$6.0X10^{-1}$	$1.6X10^{1}$	$9.9X10^{5}$	$2.7X10^{7}$
Nd-147	Neodymium (60)	6.0	$1.6X10^{2}$	$6.0X10^{-1}$	$1.6X10^{1}$	$3.0X10^{3}$	$8.1X10^{4}$
Nd-149		$6.0X10^{-1}$	$1.6X10^{1}$	$5.0X10^{-1}$	$1.4X10^{1}$	$4.5X10^{5}$	$1.2X10^{7}$
Ni-59	Nickel (28)	Unlimited	Unlimited	Unlimited	Unlimited	$3.0X10^{-3}$	$8.0X10^{-2}$
Ni-63		$4.0X10^{1}$	$1.1X10^{3}$	$3.0X10^{1}$	$8.1X10^{2}$	2.1	$5.7X10^{1}$
Ni-65		$4.0X10^{-1}$	$1.1X10^{1}$	$4.0X10^{-1}$	$1.1X10^{1}$	$7.1X10^{5}$	$1.9X10^{7}$
Np-235	Neptunium (93)	$4.0X10^{1}$	$1.1X10^{3}$	$4.0X10^{1}$	$1.1X10^{3}$	$5.2X10^{1}$	$1.4X10^{3}$
Np-236 (short-lived)		$2.0X10^{1}$	$5.4X10^{2}$	2.0	$5.4X10^{1}$	$4.7X10^{-4}$	$1.3X10^{-2}$
Np-236 (long-lived)		$9.0X10^{0}$	$2.4X10^{2}$	$2.0X10^{-2}$	$5.4X10^{-1}$	$4.7X10^{-4}$	$1.3X10^{-2}$
Np-237		$2.0X10^{1}$	$5.4X10^{2}$	$2.0X10^{-3}$	$5.4X10^{-2}$	$2.6X10^{-5}$	$7.1X10^{-4}$
Np-239		7.0	$1.9X10^{2}$	$4.0X10^{-1}$	$1.1X10^{1}$	$8.6X10^{3}$	$2.3X10^{5}$
Os-185	Osmium (76)	1.0	$2.7X10^{1}$	1.0	$2.7X10^{1}$	$2.8X10^{2}$	$7.5X10^{3}$
Os-191		$1.0X10^{1}$	$2.7X10^{2}$	2.0	$5.4X10^{1}$	$1.6X10^{3}$	$4.4X10^{4}$
Os-191m		$4.0X10^{1}$	$1.1X10^{3}$	$3.0X10^{1}$	$8.1X10^{2}$	$4.6X10^{4}$	$1.3X10^{6}$
Os-193		2.0	$5.4X10^{1}$	$6.0X10^{-1}$	$1.6X10^{1}$	$2.0X10^{4}$	$5.3X10^{5}$
Os-194 (a)		$3.0X10^{-1}$	8.1	$3.0X10^{-1}$	8.1	$1.1X10^{1}$	$3.1X10^{2}$
P-32	Phosphorus (15)	$5.0X10^{-1}$	$1.4X10^{1}$	$5.0X10^{-1}$	$1.4X10^{1}$	$1.1X10^{4}$	$2.9X10^{5}$
P-33		$4.0X10^{1}$	$1.1X10^{3}$	1.0	$2.7X10^{1}$	$5.8X10^{3}$	$1.6X10^{5}$
Pa-230 (a)	Protactinium (91)	2.0	$5.4X10^{1}$	$7.0X10^{-2}$	1.9	$1.2X10^{3}$	$3.3X10^{4}$
Pa-231		4.0	$1.1X10^{2}$	$4.0X10^{-4}$	$1.1X10^{-2}$	$1.7X10^{-3}$	$4.7X10^{-2}$
Pa-233		5.0	$1.4X10^{2}$	$7.0X10^{-1}$	$1.9X10^{1}$	$7.7X10^{2}$	$2.1X10^{4}$
Pb-201	Lead (82)	1.0	$2.7X10^{1}$	1.0	$2.7X10^{1}$	$6.2X10^{4}$	$1.7X10^{6}$
Pb-202		$4.0X10^{1}$	$1.1X10^{3}$	$2.0X10^{1}$	$5.4X10^{2}$	$1.2X10^{-4}$	$3.4X10^{-3}$
Pb-203		4.0	$1.1X10^{2}$	3.0	$8.1X10^{1}$	$1.1X10^{4}$	$3.0X10^{5}$
Pb-205		Unlimited	Unlimited	Unlimited	Unlimited	$4.5X10^{-6}$	$1.2X10^{-4}$
Pb-210 (a)		1.0	$2.7X10^{1}$	$5.0X10^{-2}$	1.4	2.8	$7.6X10^{1}$
Pb-212 (a)		$7.0X10^{-1}$	$1.9X10^{1}$	$2.0X10^{-1}$	5.4	$5.1X10^{4}$	$1.4X10^{6}$
Pd-103 (a)	Palladium (46)	$4.0X10^{1}$	$1.1X10^{3}$	$4.0X10^{1}$	$1.1X10^{3}$	$2.8X10^{3}$	$7.5X10^{4}$
Pd-107		Unlimited	Unlimited	Unlimited	Unlimited	$1.9X10^{-5}$	$5.1X10^{-4}$
Pd-109		2.0	$5.4X10^{1}$	$5.0X10^{-1}$	$1.4X10^{1}$	$7.9X10^{4}$	$2.1X10^{6}$
Pm-143	Promethium (61)	3.0	$8.1X10^{1}$	3.0	$8.1X10^{1}$	$1.3X10^{2}$	$3.4X10^{3}$
Pm-144		$7.0X10^{-1}$	$1.9X10^{1}$	$7.0X10^{-1}$	$1.9X10^{1}$	$9.2X10^{1}$	$2.5X10^{3}$
Pm-145		$3.0X10^{1}$	$8.1X10^{2}$	$1.0X10^{1}$	$2.7X10^{2}$	5.2	$1.4X10^{2}$
Pm-147		$4.0X10^{1}$	$1.1X10^{3}$	2.0	$5.4X10^{1}$	$3.4X10^{1}$	$9.3X10^{2}$
Pm-148m (a)		$8.0X10^{-1}$	$2.2X10^{1}$	$7.0X10^{-1}$	$1.9X10^{1}$	$7.9X10^{2}$	$2.1X10^{4}$
Pm-149		2.0	$5.4X10^{1}$	$6.0X10^{-1}$	$1.6X10^{1}$	$1.5X10^{4}$	$4.0X10^{5}$
Pm-151		2.0	$5.4X10^{1}$	$6.0X10^{-1}$	$1.6X10^{1}$	$2.7X10^{4}$	$7.3X10^{5}$
Po-210	Polonium (84)	$4.0X10^{1}$	$1.1X10^{3}$	$2.0X10^{-2}$	$5.4X10^{-1}$	$1.7X10^{2}$	$4.5X10^{3}$
Pr-142	Praseodymium (59)	$4.0X10^{-1}$	$1.1X10^{1}$	$4.0X10^{-1}$	$1.1X10^{1}$	$4.3X10^{4}$	$1.2X10^{6}$
Pr-143		3.0	$8.1X10^{1}$	$6.0X10^{-1}$	$1.6X10^{1}$	$2.5X10^{3}$	$6.7X10^{4}$
Pt-188 (a)	Platinum (78)	1.0	$2.7X10^{1}$	$8.0X10^{-1}$	$2.2X10^{1}$	$2.5X10^{3}$	$6.8X10^{4}$

Symbol of radionuclide	Element and atomic number	A_1 (TBq)	A_1 (Ci)[b]	A_2 (TBq)	A_2 (Ci)[b]	Specific activity (TBq/g)	(Ci/g)
Pt-191		4.0	$1.1X10^2$	3.0	$8.1X10^1$	$8.7X10^3$	$2.4X10^5$
Pt-193		$4.0X10^1$	$1.1X10^3$	$4.0X10^1$	$1.1X10^3$	1.4	$3.7X10^1$
Pt-193m		$4.0X10^1$	$1.1X10^3$	$5.0X10^{-1}$	$1.4X10^1$	$5.8X10^3$	$1.6X10^5$
Pt-195m		$1.0X10^1$	$2.7X10^2$	$5.0X10^{-1}$	$1.4X10^1$	$6.2X10^3$	$1.7X10^5$
Pt-197		$2.0X10^1$	$5.4X10^2$	$6.0X10^{-1}$	$1.6X10^1$	$3.2X10^4$	$8.7X10^5$
Pt-197m		$1.0X10^1$	$2.7X10^2$	$6.0X10^{-1}$	$1.6X10^1$	$3.7X10^5$	$1.0X10^7$
Pu-236	Plutonium (94)	$3.0X10^1$	$8.1X10^2$	$3.0X10^{-3}$	$8.1X10^{-2}$	$2.0X10^1$	$5.3X10^2$
Pu-237		$2.0X10^1$	$5.4X10^2$	$2.0X10^1$	$5.4X10^2$	$4.5X10^2$	$1.2X10^4$
Pu-238		$1.0X10^1$	$2.7X10^2$	$1.0X10^{-3}$	$2.7X10^{-2}$	$6.3X10^{-1}$	$1.7X10^1$
Pu-239		$1.0X10^1$	$2.7X10^2$	$1.0X10^{-3}$	$2.7X10^{-2}$	$2.3X10^{-3}$	$6.2X10^{-2}$
Pu-240		$1.0X10^1$	$2.7X10^2$	$1.0X10^{-3}$	$2.7X10^{-2}$	$8.4X10^{-3}$	$2.3X10^{-1}$
Pu-241 (a)		$4.0X10^1$	$1.1X10^3$	$6.0X10^{-2}$	1.6	3.8	$1.0X10^2$
Pu-242		$1.0X10^1$	$2.7X10^2$	$1.0X10^{-3}$	$2.7X10^{-2}$	$1.5X10^{-4}$	$3.9X10^{-3}$
Pu-244 (a)		$4.0X10^{-1}$	$1.1X10^1$	$1.0X10^{-3}$	$2.7X10^{-2}$	$6.7X10^{-7}$	$1.8X10^{-5}$
Ra-223 (a)	Radium (88)	$4.0X10^{-1}$	$1.1X10^1$	$7.0X10^{-3}$	$1.9X10^{-1}$	$1.9X10^3$	$5.1X10^4$
Ra-224 (a)		$4.0X10^{-1}$	$1.1X10^1$	$2.0X10^{-2}$	$5.4X10^{-1}$	$5.9X10^3$	$1.6X10^5$
Ra-225 (a)		$2.0X10^{-1}$	5.4	$4.0X10^{-3}$	$1.1X10^{-1}$	$1.5X10^3$	$3.9X10^4$
Ra-226 (a)		$2.0X10^{-1}$	5.4	$3.0X10^{-3}$	$8.1X10^{-2}$	$3.7X10^{-2}$	1.0
Ra-228 (a)		$6.0X10^{-1}$	$1.6X10^1$	$2.0X10^{-2}$	$5.4X10^{-1}$	$1.0X10^1$	$2.7X10^2$
Rb-81	Rubidium (37)	2.0	$5.4X10^1$	$8.0X10^{-1}$	$2.2X10^1$	$3.1X10^5$	$8.4X10^6$
Rb-83 (a)		2.0	$5.4X10^1$	2.0	$5.4X10^1$	$6.8X10^2$	$1.8X10^4$
Rb-84		1.0	$2.7X10^1$	1.0	$2.7X10^1$	$1.8X10^3$	$4.7X10^4$
Rb-86		$5.0X10^{-1}$	$1.4X10^1$	$5.0X10^{-1}$	$1.4X10^1$	$3.0X10^3$	$8.1X10^4$
Rb-87		Unlimited	Unlimited	Unlimited	Unlimited	$3.2X10^{-9}$	$8.6X10^{-8}$
Rb (nat)		Unlimited	Unlimited	Unlimited	Unlimited	$6.7X10^6$	$1.8X10^8$
Re-184	Rhenium (75)	1.0	$2.7X10^1$	1.0	$2.7X10^1$	$6.9X10^2$	$1.9X10^4$
Re-184m		3.0	$8.1X10^1$	1.0	$2.7X10^1$	$1.6X10^2$	$4.3X10^3$
Re-186		2.0	$5.4X10^1$	$6.0X10^{-1}$	$1.6X10^1$	$6.9X10^3$	$1.9X10^5$
Re-187		Unlimited	Unlimited	Unlimited	Unlimited	$1.4X10^{-9}$	$3.8X10^{-8}$
Re-188		$4.0X10^{-1}$	$1.1X10^1$	$4.0X10^{-1}$	$1.1X10^1$	$3.6X10^4$	$9.8X10^5$
Re-189 (a)		3.0	$8.1X10^1$	$6.0X10^{-1}$	$1.6X10^1$	$2.5X10^4$	$6.8X10^5$
Re (nat)		Unlimited	Unlimited	Unlimited	Unlimited	0.0	$2.4X10^{-8}$
Rh-99	Rhodium (45)	2.0	$5.4X10^1$	2.0	$5.4X10^1$	$3.0X10^3$	$8.2X10^4$
Rh-101		4.0	$1.1X10^2$	3.0	$8.1X10^1$	$4.1X10^1$	$1.1X10^3$
Rh-102		$5.0X10^{-1}$	$1.4X10^1$	$5.0X10^{-1}$	$1.4X10^1$	$4.5X10^1$	$1.2X10^3$
Rh-102m		2.0	$5.4X10^1$	2.0	$5.4X10^1$	$2.3X10^2$	$6.2X10^3$
Rh-103m		$4.0X10^1$	$1.1X10^3$	$4.0X10^1$	$1.1X10^3$	$1.2X10^6$	$3.3X10^7$
Rh-105		$1.0X10^1$	$2.7X10^2$	$8.0X10^{-1}$	$2.2X10^1$	$3.1X10^4$	$8.4X10^5$
Rn-222 (a)	Radon (86)	$3.0X10^{-1}$	8.1	$4.0X10^{-3}$	$1.1X10^{-1}$	$5.7X10^3$	$1.5X10^5$
Ru-97	Ruthenium (44)	5.0	$1.4X10^2$	5.0	$1.4X10^2$	$1.7X10^4$	$4.6X10^5$
Ru-103 (a)		2.0	$5.4X10^1$	2.0	$5.4X10^1$	$1.2X10^3$	$3.2X10^4$
Ru-105		1.0	$2.7X10^1$	$6.0X10^{-1}$	$1.6X10^1$	$2.5X10^5$	$6.7X10^6$
Ru-106 (a)		$2.0X10^{-1}$	5.4	$2.0X10^{-1}$	5.4	$1.2X10^2$	$3.3X10^3$
S-35	Sulphur (16)	$4.0X10^1$	$1.1X10^3$	3.0	$8.1X10^1$	$1.6X10^3$	$4.3X10^4$
Sb-122	Antimony (51)	$4.0X10^{-1}$	$1.1X10^1$	$4.0X10^{-1}$	$1.1X10^1$	$1.5X10^4$	$4.0X10^5$
Sb-124		$6.0X10^{-1}$	$1.6X10^1$	$6.0X10^{-1}$	$1.6X10^1$	$6.5X10^2$	$1.7X10^4$
Sb-125		2.0	$5.4X10^1$	1.0	$2.7X10^1$	$3.9X10^1$	$1.0X10^3$
Sb-126		$4.0X10^{-1}$	$1.1X10^1$	$4.0X10^{-1}$	$1.1X10^1$	$3.1X10^3$	$8.4X10^4$
Sc-44	Scandium (21)	$5.0X10^{-1}$	$1.4X10^1$	$5.0X10^{-1}$	$1.4X10^1$	$6.7X10^5$	$1.8X10^7$
Sc-46		$5.0X10^{-1}$	$1.4X10^1$	$5.0X10^{-1}$	$1.4X10^1$	$1.3X10^3$	$3.4X10^4$
Sc-47		$1.0X10^1$	$2.7X10^2$	$7.0X10^{-1}$	$1.9X10^1$	$3.1X10^4$	$8.3X10^5$
Sc-48		$3.0X10^{-1}$	8.1	$3.0X10^{-1}$	8.1	$5.5X10^4$	$1.5X10^6$

Symbol of radionuclide	Element and atomic number	A_1 (TBq)	A_1 (Ci)[b]	A_2 (TBq)	A_2 (Ci)[b]	Specific activity (TBq/g)	(Ci/g)
Se-75	Selenium (34)	3.0	$8.1X10^{1}$	3.0	$8.1X10^{1}$	$5.4X10^{2}$	$1.5X10^{4}$
Se-79		$4.0X10^{1}$	$1.1X10^{3}$	2.0	$5.4X10^{1}$	$2.6X10^{-3}$	$7.0X10^{-2}$
Si-31	Silicon (14)	$6.0X10^{-1}$	$1.6X10^{1}$	$6.0X10^{-1}$	$1.6X10^{1}$	$1.4X10^{6}$	$3.9X10^{7}$
Si-32		$4.0X10^{1}$	$1.1X10^{3}$	$5.0X10^{-1}$	$1.4X10^{1}$	3.9	$1.1X10^{2}$
Sm-145	Samarium (62)	$1.0X10^{1}$	$2.7X10^{2}$	$1.0X10^{1}$	$2.7X10^{2}$	$9.8X10^{1}$	$2.6X10^{3}$
Sm-147		Unlimited	Unlimited	Unlimited	Unlimited	$8.5X10^{-1}$	$2.3X10^{-8}$
Sm-151		$4.0X10^{1}$	$1.1X10^{3}$	$1.0X10^{1}$	$2.7X10^{2}$	$9.7X10^{-1}$	$2.6X10^{1}$
Sm-153		9.0	$2.4X10^{2}$	$6.0X10^{-1}$	$1.6X10^{1}$	$1.6X10^{4}$	$4.4X10^{5}$
Sn-113 (a)	Tin (50)	4.0	$1.1X10^{2}$	2.0	$5.4X10^{1}$	$3.7X10^{2}$	$1.0X10^{4}$
Sn-117m		7.0	$1.9X10^{2}$	$4.0X10^{-1}$	$1.1X10^{1}$	$3.0X10^{3}$	$8.2X10^{4}$
Sn-119m		$4.0X10^{1}$	$1.1X10^{3}$	$3.0X10^{1}$	$8.1X10^{2}$	$1.4X10^{2}$	$3.7X10^{3}$
Sn-121m (a)		$4.0X10^{1}$	$1.1X10^{3}$	$9.0X10^{-1}$	$2.4X10^{1}$	2.0	$5.4X10^{1}$
Sn-123		$8.0X10^{-1}$	$2.2X10^{1}$	$6.0X10^{-1}$	$1.6X10^{1}$	$3.0X10^{2}$	$8.2X10^{3}$
Sn-125		$4.0X10^{-1}$	$1.1X10^{1}$	$4.0X10^{-1}$	$1.1X10^{1}$	$4.0X10^{3}$	$1.1X10^{5}$
Sn-126 (a)		$6.0X10^{-1}$	$1.6X10^{1}$	$4.0X10^{-1}$	$1.1X10^{1}$	$1.0X10^{-3}$	$2.8X10^{-2}$
Sr-82 (a)	Strontium (38)	$2.0X10^{-1}$	5.4	$2.0X10^{-1}$	5.4	$2.3X10^{3}$	$6.2X10^{4}$
Sr-85		2.0	$5.4X10^{1}$	2.0	$5.4X10^{1}$	$8.8X10^{2}$	$2.4X10^{4}$
Sr-85m		5.0	$1.4X10^{2}$	5.0	$1.4X10^{2}$	$1.2X10^{6}$	$3.3X10^{7}$
Sr-87m		3.0	$8.1X10^{1}$	3.0	$8.1X10^{1}$	$4.8X10^{5}$	$1.3X10^{7}$
Sr-89		$6.0X10^{-1}$	$1.6X10^{1}$	$6.0X10^{-1}$	$1.6X10^{1}$	$1.1X10^{3}$	$2.9X10^{4}$
Sr-90 (a)		$3.0X10^{-1}$	8.1	$3.0X10^{-1}$	8.1	5.1	$1.4X10^{2}$
Sr-91 (a)		$3.0X10^{-1}$	8.1	$3.0X10^{-1}$	8.1	$1.3X10^{5}$	$3.6X10^{6}$
Sr-92 (a)		1.0	$2.7X10^{1}$	$3.0X10^{-1}$	8.1	$4.7X10^{5}$	$1.3X10^{7}$
T (H-3)	Tritium (1)	$4.0X10^{1}$	$1.1X10^{3}$	$4.0X10^{1}$	$1.1X10^{3}$	$3.6X10^{2}$	$9.7X10^{3}$
Ta-178 (long-lived)	Tantalum (73)	1.0	$2.7X10^{1}$	$8.0X10^{-1}$	$2.2X10^{1}$	$4.2X10^{6}$	$1.1X10^{8}$
Ta-179		$3.0X10^{1}$	$8.1X10^{2}$	$3.0X10^{1}$	$8.1X10^{2}$	$4.1X10^{1}$	$1.1X10^{3}$
Ta-182		$9.0X10^{-1}$	$2.4X10^{1}$	$5.0X10^{-1}$	$1.4X10^{1}$	$2.3X10^{2}$	$6.2X10^{3}$
Tb-157	Terbium (65)	$4.0X10^{1}$	$1.1X10^{3}$	$4.0X10^{1}$	$1.1X10^{3}$	$5.6X10^{-1}$	$1.5X10^{1}$
Tb-158		1.0	$2.7X10^{1}$	1.0	$2.7X10^{1}$	$5.6X10^{-1}$	$1.5X10^{1}$
Tb-160		1.0	$2.7X10^{1}$	$6.0X10^{-1}$	$1.6X10^{1}$	$4.2X10^{2}$	$1.1X10^{4}$
Tc-95m (a)	Technetium (43)	2.0	$5.4X10^{1}$	2.0	$5.4X10^{1}$	$8.3X10^{2}$	$2.2X10^{4}$
Tc-96		$4.0X10^{-1}$	$1.1X10^{1}$	$4.0X10^{-1}$	$1.1X10^{1}$	$1.2X10^{4}$	$3.2X10^{5}$
Tc-96m (a)		$4.0X10^{-1}$	$1.1X10^{1}$	$4.0X10^{-1}$	$1.1X10^{1}$	$1.4X10^{6}$	$3.8X10^{7}$
Tc-97		Unlimited	Unlimited	Unlimited	Unlimited	$5.2X10^{-5}$	$1.4X10^{-3}$
Tc-97m		$4.0X10^{1}$	$1.1X10^{3}$	1.0	$2.7X10^{1}$	$5.6X10^{2}$	$1.5X10^{4}$
Tc-98		$8.0X10^{-1}$	$2.2X10^{1}$	$7.0X10^{-1}$	$1.9X10^{1}$	$3.2X10^{-5}$	$8.7X10^{-4}$
Tc-99		$4.0X10^{1}$	$1.1X10^{3}$	$9.0X10^{-1}$	$2.4X10^{1}$	$6.3X10^{-4}$	$1.7X10^{-2}$
Tc-99m		$1.0X10^{1}$	$2.7X10^{2}$	4.0	$1.1X10^{2}$	$1.9X10^{5}$	$5.3X10^{6}$
Te-121	Tellurium (52)	2.0	$5.4X10^{1}$	2.0	$5.4X10^{1}$	$2.4X10^{3}$	$6.4X10^{4}$
Te-121m		5.0	$1.4X10^{2}$	3.0	$8.1X10^{1}$	$2.6X10^{2}$	$7.0X10^{3}$
Te-123m		8.0	$2.2X10^{2}$	1.0	$2.7X10^{1}$	$3.3X10^{2}$	$8.9X10^{3}$
Te-125m		$2.0X10^{1}$	$5.4X10^{2}$	$9.0X10^{-1}$	$2.4X10^{1}$	$6.7X10^{2}$	$1.8X10^{4}$
Te-127		$2.0X10^{1}$	$5.4X10^{2}$	$7.0X10^{-1}$	$1.9X10^{1}$	$9.8X10^{4}$	$2.6X10^{6}$
Te-127m (a)		$2.0X10^{1}$	$5.4X10^{2}$	$5.0X10^{-1}$	$1.4X10^{1}$	$3.5X10^{2}$	$9.4X10^{3}$
Te-129		$7.0X10^{-1}$	$1.9X10^{1}$	$6.0X10^{-1}$	$1.6X10^{1}$	$7.7X10^{5}$	$2.1X10^{7}$
Te-129m (a)		$8.0X10^{-1}$	$2.2X10^{1}$	$4.0X10^{-1}$	$1.1X10^{1}$	$1.1X10^{3}$	$3.0X10^{4}$
Te-131m (a)		$7.0X10^{-1}$	$1.9X10^{1}$	$5.0X10^{-1}$	$1.4X10^{1}$	$3.0X10^{4}$	$8.0X10^{5}$
Te-132 (a)		$5.0X10^{-1}$	$1.4X10^{1}$	$4.0X10^{-1}$	$1.1X10^{1}$	$1.1X10^{4}$	$3.0X10^{5}$
Th-227	Thorium (90)	$1.0X10^{1}$	$2.7X10^{2}$	$5.0X10^{-3}$	$1.4X10^{-1}$	$1.1X10^{3}$	$3.1X10^{4}$
Th-228 (a)		$5.0X10^{-1}$	$1.4X10^{1}$	$1.0X10^{-3}$	$2.7X10^{-2}$	$3.0X10^{1}$	$8.2X10^{2}$
Th-229		5.0	$1.4X10^{2}$	$5.0X10^{-4}$	$1.4X10^{-2}$	$7.9X10^{-3}$	$2.1X10^{-1}$

Symbol of radionuclide	Element and atomic number	A_1 (TBq)	A_1 (Ci)[b]	A_2 (TBq)	A_2 (Ci)[b]	Specific activity (TBq/g)	(Ci/g)
Th-230		$1.0X10^{1}$	$2.7X10^{2}$	$1.0X10^{-3}$	$2.7X10^{-2}$	$7.6X10^{-4}$	$2.1X10^{-2}$
Th-231		$4.0X10^{1}$	$1.1X10^{3}$	$2.0X10^{-2}$	$5.4X10^{-1}$	$2.0X10^{4}$	$5.3X10^{5}$
Th-232		Unlimited	Unlimited	Unlimited	Unlimited	$4.0X10^{-9}$	$1.1X10^{-7}$
Th-234 (a)		$3.0X10^{-1}$	8.1	$3.0X10^{-1}$	8.1	$8.6X10^{2}$	$2.3X10^{4}$
Th (natural)		Unlimited	Unlimited	Unlimited	Unlimited	$8.1X10^{-9}$	$2.2X10^{-7}$
Ti-44 (a)	Titanium (22)	$5.0X10^{-1}$	$1.4X10^{1}$	$4.0X10^{-1}$	$1.1X10^{1}$	6.4	$1.7X10^{2}$
Tl-200	Thallium (81)	$9.0X10^{-1}$	$2.4X10^{1}$	$9.0X10^{-1}$	$2.4X10^{1}$	$2.2X10^{4}$	$6.0X10^{5}$
Tl-201		$1.0X10^{1}$	$2.7X10^{2}$	4.0	$1.1X10^{2}$	$7.9X10^{3}$	$2.1X10^{5}$
Tl-202		2.0	$5.4X10^{1}$	2.0	$5.4X10^{1}$	$2.0X10^{3}$	$5.3X10^{4}$
Tl-204		$1.0X10^{1}$	$2.7X10^{2}$	$7.0X10^{-1}$	$1.9X10^{1}$	$1.7X10^{1}$	$4.6X10^{2}$
Tm-167	Thulium (69)	7.0	$1.9X10^{2}$	$8.0X10^{-1}$	$2.2X10^{1}$	$3.1X10^{3}$	$8.5X10^{4}$
Tm-170		3.0	$8.1X10^{1}$	$6.0X10^{-1}$	$1.6X10^{1}$	$2.2X10^{2}$	$6.0X10^{3}$
Tm-171		$4.0X10^{1}$	$1.1X10^{3}$	$4.0X10^{1}$	$1.1X10^{3}$	$4.0X10^{1}$	$1.1X10^{3}$
U-230 (fast lung absorption) (a)(d)	Uranium (92)	$4.0X10^{1}$	$1.1X10^{3}$	$1.0X10^{-1}$	2.7	$1.0X10^{3}$	$2.7X10^{4}$
U-230 (medium lung absorption) (a) (e)		$4.0X10^{1}$	$1.1X10^{3}$	$4.0X10^{-3}$	$1.1X10^{-1}$	$1.0X10^{3}$	$2.7X10^{4}$
U-230 (slow lung absorption) (a)(f)		$3.0X10^{1}$	$8.1X10^{2}$	$3.0X10^{-3}$	$8.1X10^{-2}$	$1.0X10^{3}$	$2.7X10^{4}$
U-232 (fast lung absorption) (d)		$4.0X10^{1}$	$1.1X10^{3}$	$1.0X10^{-2}$	$2.7X10^{-1}$	$8.3X10^{-1}$	$2.2X10^{1}$
U-232 (medium lung absorption) (e)		$4.0X10^{1}$	$1.1X10^{3}$	$7.0X10^{-3}$	$1.9X10^{-1}$	$8.3X10^{-1}$	$2.2X10^{1}$
U-232 (slow lung absorption) (f)		$1.0X10^{1}$	$2.7X10^{2}$	$1.0X10^{-3}$	$2.7X10^{-2}$	$8.3X10^{-1}$	$2.2X10^{1}$
U-233 (fast lung absorption) (d)		$4.0X10^{1}$	$1.1X10^{3}$	$9.0X10^{-2}$	2.4	$3.6X10^{-4}$	$9.7X10^{-3}$
U-233 (medium lung absorption) (e)		$4.0X10^{1}$	$1.1X10^{3}$	$2.0X10^{-2}$	$5.4X10^{-1}$	$3.6X10^{-4}$	$9.7X10^{-3}$
U-233 (slow lung absorption) (f)		$4.0X10^{1}$	$1.1X10^{3}$	$6.0X10^{-3}$	$1.6X10^{-1}$	$3.6X10^{-4}$	$9.7X10^{-3}$
U-234 (fast lung absorption) (d)		$4.0X10^{1}$	$1.1X10^{3}$	$9.0X10^{-2}$	2.4	$2.3X10^{-4}$	$6.2X10^{-3}$
U-234 (medium lung absorption) (e)		$4.0X10^{1}$	$1.1X10^{3}$	$2.0X10^{-2}$	$5.4X10^{-1}$	$2.3X10^{-4}$	$6.2X10^{-3}$
U-234 (slow lung absorption) (f)		$4.0X10^{1}$	$1.1X10^{3}$	$6.0X10^{-3}$	$1.6X10^{-1}$	$2.3X10^{-4}$	$6.2X10^{-3}$
U-235 (all lung		Unlimited	Unlimited	Unlimited	Unlimited	$8.0X10^{-8}$	$2.2X10^{-6}$

Symbol of radionuclide	Element and atomic number	A_1 (TBq)	A_1 (Ci)[b]	A_2 (TBq)	A_2 (Ci)[b]	Specific activity (TBq/g)	(Ci/g)
absorption types) (a),(d),(e),(f)							
U-236 (fast lung absorption) (d)		Unlimited	Unlimited	Unlimited	Unlimited	$2.4X10^{-6}$	$6.5X10^{-5}$
U-236 (medium lung absorption) (e)		$4.0X10^{1}$	$1.1X10^{3}$	$2.0X10^{-2}$	$5.4X10^{-1}$	$2.4X10^{-6}$	$6.5X10^{-5}$
U-236 (slow lung absorption) (f)		$4.0X10^{1}$	$1.1X10^{3}$	$6.0X10^{-3}$	$1.6X10^{-1}$	$2.4X10^{-6}$	$6.5X10^{-5}$
U-238 (all lung absorption types) (d),(e),(f)		Unlimited	Unlimited	Unlimited	Unlimited	$1.2X10^{-8}$	$3.4X10^{-7}$
U (natural)		Unlimited	Unlimited	Unlimited	Unlimited	$2.6X10^{-8}$	$7.1X10^{-7}$
U (enriched to 20% or less) (g)		Unlimited	Unlimited	Unlimited	Unlimited	See Table 6	See Table 6
U (dep)		Unlimited	Unlimited	Unlimited	Unlimited	See Table 6	See Table 5
V-48	Vanadium (23)	$4.0X10^{-1}$	$1.1X10^{1}$	$4.0X10^{-1}$	$1.1X10^{1}$	$6.3X10^{3}$	$1.7X10^{5}$
V-49		$4.0X10^{1}$	$1.1X10^{3}$	$4.0X10^{1}$	$1.1X10^{3}$	$3.0X10^{2}$	$8.1X10^{3}$
W-178 (a)	Tungsten (74)	9.0	$2.4X10^{2}$	5.0	$1.4X10^{2}$	$1.3X10^{3}$	$3.4X10^{4}$
W-181		$3.0X10^{1}$	$8.1X10^{2}$	$3.0X10^{1}$	$8.1X10^{2}$	$2.2X10^{2}$	$6.0X10^{3}$
W-185		$4.0X10^{1}$	$1.1X10^{3}$	$8.0X10^{-1}$	$2.2X10^{1}$	$3.5X10^{2}$	$9.4X10^{3}$
W-187		2.0	$5.4X10^{1}$	$6.0X10^{-1}$	$1.6X10^{1}$	$2.6X10^{4}$	$7.0X10^{5}$
W-188 (a)		$4.0X10^{-1}$	$1.1X10^{1}$	$3.0X10^{-1}$	8.1	$3.7X10^{2}$	$1.0X10^{4}$
Xe-122 (a)	Xenon (54)	$4.0X10^{-1}$	$1.1X10^{1}$	$4.0X10^{-1}$	$1.1X10^{1}$	$4.8X10^{4}$	$1.3X10^{6}$
Xe-123		2.0	$5.4X10^{1}$	$7.0X10^{-1}$	$1.9X10^{1}$	$4.4X10^{5}$	$1.2X10^{7}$
Xe-127		4.0	$1.1X10^{2}$	2.0	$5.4X10^{1}$	$1.0X10^{3}$	$2.8X10^{4}$
Xe-131m		$4.0X10^{1}$	$1.1X10^{3}$	$4.0X10^{1}$	$1.1X10^{3}$	$3.1X10^{3}$	$8.4X10^{4}$
Xe-133		$2.0X10^{1}$	$5.4X10^{2}$	$1.0X10^{1}$	$2.7X10^{2}$	$6.9X10^{3}$	$1.9X10^{5}$
Xe-135		3.0	$8.1X10^{1}$	2.0	$5.4X10^{1}$	$9.5X10^{4}$	$2.6X10^{6}$
Y-87 (a)	Yttrium (39)	1.0	$2.7X10^{1}$	1.0	$2.7X10^{1}$	$1.7X10^{4}$	$4.5X10^{5}$
Y-88		$4.0X10^{-1}$	$1.1X10^{1}$	$4.0X10^{-1}$	$1.1X10^{1}$	$5.2X10^{2}$	$1.4X10^{4}$
Y-90		$3.0X10^{-1}$	8.1	$3.0X10^{-1}$	8.1	$2.0X10^{4}$	$5.4X10^{5}$
Y-91		$6.0X10^{-1}$	$1.6X10^{1}$	$6.0X10^{-1}$	$1.6X10^{1}$	$9.1X10^{2}$	$2.5X10^{4}$
Y-91m		2.0	$5.4X10^{1}$	2.0	$5.4X10^{1}$	$1.5X10^{6}$	$4.2X10^{7}$
Y-92		$2.0X10^{-1}$	5.4	$2.0X10^{-1}$	5.4	$3.6X10^{5}$	$9.6X10^{6}$
Y-93		$3.0X10^{-1}$	8.1	$3.0X10^{-1}$	8.1	$1.2X10^{5}$	$3.3X10^{6}$
Yb-169	Ytterbium (70)	4.0	$1.1X10^{2}$	1.0	$2.7X10^{1}$	$8.9X10^{2}$	$2.4X10^{4}$
Yb-175		$3.0X10^{1}$	$8.1X10^{2}$	$9.0X10^{-1}$	$2.4X10^{1}$	$6.6X10^{3}$	$1.8X10^{5}$
Zn-65	Zinc (30)	2.0	$5.4X10^{1}$	2.0	$5.4X10^{1}$	$3.0X10^{2}$	$8.2X10^{3}$
Zn-69		3.0	$8.1X10^{1}$	$6.0X10^{-1}$	$1.6X10^{1}$	$1.8X10^{6}$	$4.9X10^{7}$
Zn-69m (a)		3.0	$8.1X10^{1}$	$6.0X10^{-1}$	$1.6X10^{1}$	$1.2X10^{5}$	$3.3X10^{6}$
Zr-88	Zirconium (40)	3.0	$8.1X10^{1}$	3.0	$8.1X10^{1}$	$6.6X10^{2}$	$1.8X10^{4}$
Zr-93		Unlimited	Unlimited	Unlimited	Unlimited	$9.3X10^{-5}$	$2.5X10^{-3}$
Zr-95 (a)		2.0	$5.4X10^{1}$	$8.0X10^{-1}$	$2.2X10^{1}$	$7.9X10^{2}$	$2.1X10^{4}$
Zr-97 (a)		$4.0X10^{-1}$	$1.1X10^{1}$	$4.0X10^{-1}$	$1.1X10^{1}$	$7.1X10^{4}$	$1.9X10^{6}$

[a] A_1 and/or A_2 values include contributions from daughter nuclides with half-lives less than 10 days as listed in Table 4-A.

[b] The values of A_1 and A_2in Curies (Ci) are approximate and for information only; the regulatory standard units are Terabecquerels (TBq).

[c] The activity of Ir-192 in special form may be determined from a measurement of the rate of decay or a measurement of the radiation level at a prescribed distance from the source.

[d] These values apply only to compounds of uranium that take the chemical form of UF_6, UO_2F_2 and $UO_2(NO_3)_2$ in both normal and accident conditions of transport.

[e] These values apply only to compounds of uranium that take the chemical form of UO_3, UF_4, UCl_4 and hexavalent compounds in both normal and accident conditions of transport.

[f] These values apply to all compounds of uranium other than those specified in notes (d) and (e) of this table.

[g] These values apply to unirradiated uranium only.

[h] A_2 = 0.74 TBq (20 Ci) for Mo-99 for domestic use.

TABLE 4-A DAUGHTER NUCLIDES WITH HALF-LIVES LESS THAN 10 DAYS

Parent Nuclide	Daughter Nuclide(s)						
Mg-28	Al-28						
Ca-47	Sc-47						
Ti-44	Sc-44						
Fe-52	Mn-52m						
Fe-60	Co-60m						
Zn-69m	Zn-69						
Ge-68	Ga-68						
Rb-83	Kr-83m						
Sr-82	Rb-82						
Sr-90	Y-90						
Sr-91	Y-91m						
Sr-92	Y-92						
Y-87	Sr-87m						
Zr-95	Nb-95m						
Zr-97	Nb-97m	Nb-97					
Mo-99	Tc-99m						
Tc-95m	Tc-95						
Tc-96m	Tc-96						
Ru-103	Rh-103m						
Ru-106	Rh-106						
Pd-103	Rh-103m						
Ag-108m	Ag-108						
Ag-110m	Ag-110						
Cd-115	In-115m						
In-114m	In-114						
Sn-113	In-113m						
Sn-121m	Sn-121						
Sn-126	Sb-126m						
Te-127m	Te-127						

Parent Nuclide	Daughter Nuclide(s)						
Te-129m	Te-129						
Te-131m	Te-131						
Te-132	I-132						
I-135	Xe-135m						
Xe-122	I-122						
Cs-137	Ba-137m						
Ba-131	Cs-131						
Ba-140	La-140						
Ce-144	Pr-144m	Pr-144					
Pm-148m	Pm-148						
Gd-146	Eu-146						
Dy-166	Ho-166						
Hf-172	Lu-172						
W-178	Ta-178						
W-188	Re-188						
Re-189	Os-189m						
Os-194	Ir-194						
Ir-189	Os-189m						
Pt-188	Ir-188						
Hg-194	Au-194						
Hg-195m	Hg-195						
Pb-210	Bi-210						
Pb-212	Bi-212	Tl-208	Po-212				
Bi-210m	Tl-206						
Bi-212	Tl-208	Po-212					
At-211	Po-211						
Rn-222	Po-218	Pb-214	At-218	Bi-214	Po-214		
Ra-223	Rn-219	Po-215	Pb-211	Bi-211	Po-211	Tl-207	
Ra-224	Rn-220	Po-216	Pb-212	Bi-212	Tl-208	Po-212	
Ra-225	Ac-225	Fr-221	At-217	Bi-213	Tl-209	Po-213	Pb-209
Ra-226	Rn-222	Po-218	Pb-214	At-218	Bi-214	Po-214	
Ra-228	Ac-228						
Ac-225	Fr-221	At-217	Bi-213	Tl-209	Po-213	Pb-209	
Ac-227	Fr-223						
Th-228	Ra-224	Rn-220	Po-216	Pb-212	Bi-212	Tl-208	Po-212
Th-234	Pa-234m	Pa-234					
Pa-230	Ac-226	Th-226	Fr-222	Ra-222	Rn-218	Po-214	
U-230	Th-226	Ra-222	Rn-218	Po-214			
U-235	Th-231						
Pu-241	U-237						
Pu-244	U-240	Np-240m					
Am-242m	Am-242	Np-238					
Am-243	Np-239						
Cm-247	Pu-243						
Bk-249	Am-245						

TABLE 5 - GENERAL VALUES FOR A_1 AND A_2								
Contents	A_1		A_2		Activity concentration for exempt material (Bq/g)	Activity concentration for exempt material (Ci/g)	Activity limits for exempt consignments (Bq)	Activity limits for exempt consignments (Ci)
	(TBq)	(Ci)	(TBq)	(Ci)				
Only beta or gamma emitting radionuclides are known to be present	$1x10^{-1}$	2.7×10^{0}	$2x10^{-2}$	5.4×10^{-1}	$1x10^{1}$	2.7×10^{-10}	$1x10^{4}$	2.7×10^{-7}
Alpha emitting nuclides, but no neutron emitters, are known to be present[a]	$2x10^{-1}$	5.4×10^{0}	$9x10^{-5}$	2.4×10^{-3}	$1x10^{-1}$	2.7×10^{-12}	$1x10^{3}$	2.7×10^{-8}
Neutron emitting nuclides are known to be present or no relevant data are available	$1x10^{-3}$	2.7×10^{-2}	$9x10^{-5}$	2.4×10^{-3}	$1x10^{-1}$	2.7×10^{-12}	$1x10^{3}$	2.7×10^{-8}

[a] If beta or gamma emitting nuclides are known to be present, the A_1 value of 0.1 TBq (2.7 Ci) should be used.

TABLE 6 - ACTIVITY-MASS RELATIONSHIPS FOR URANIUM

Uranium Enrichment[1] wt % U-235 present	Specific Activity TBq/g	Ci/g
0.45	1.8×10^{-8}	5.0×10^{-7}
0.72	2.6×10^{-8}	7.1×10^{-7}
1	2.8×10^{-8}	7.6×10^{-7}
1.5	3.7×10^{-8}	1.0×10^{-6}
5	1.0×10^{-8}	2.7×10^{-6}
10	1.8×10^{-8}	4.8×10^{-6}
20	3.7×10^{-8}	1.0×10^{-5}
35	7.4×10^{-8}	2.0×10^{-5}
50	9.3×10^{-8}	2.5×10^{-5}
90	2.2×10^{-6}	5.8×10^{-5}
93	2.6×10^{-6}	7.0×10^{-5}
95	3.4×10^{-6}	9.1×10^{-5}

[1] The figures for uranium include representative values for the activity of the uranium-234 that is concentrated during the enrichment process.

Table 7 - EXEMPT MATERIAL ACTIVITY CONCENTRATIONS AND EXEMPT CONSIGNMENT ACTIVITY LIMITS FOR RADIONUCLIDES

Symbol of radionuclide	Element and atomic number	Activity concentration for exempt material (Bq/g)	Activity concentration for exempt material (Ci/g)	Activity limit for exempt consignment (Bq)	Activity limit for exempt consignment (Ci)
Ac-225	Actinium (89)	$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{4}$	$2.7X10^{-7}$
Ac-227		$1.0X10^{-1}$	$2.7X10^{-12}$	$1.0X10^{3}$	$2.7X10^{-8}$
Ac-228		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Ag-105	Silver (47)	$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Ag-108m (b)		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Ag-110m		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Ag-111		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{6}$	$2.7X10^{-5}$
Al-26	Aluminum (13)	$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{5}$	$2.7X10^{-6}$
Am-241	Americium (95)	1.0	$2.7X10^{-11}$	$1.0X10^{4}$	$2.7X10^{-7}$
Am-242m (b)		1.0	$2.7X10^{-11}$	$1.0X10^{4}$	$2.7X10^{-7}$
Am-243 (b)		1.0	$2.7X10^{-11}$	$1.0X10^{3}$	$2.7X10^{-8}$
Ar-37	Argon (18)	$1.0X10^{6}$	$2.7X10^{-5}$	$1.0X10^{8}$	$2.7X10^{-3}$
Ar-39		$1.0X10^{7}$	$2.7X10^{-4}$	$1.0X10^{4}$	$2.7X10^{-7}$
Ar-41		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{9}$	$2.7X10^{-2}$
As-72	Arsenic (33)	$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{5}$	$2.7X10^{-6}$
As-73		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{7}$	$2.7X10^{-4}$
As-74		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
As-76		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{5}$	$2.7X10^{-6}$
As-77		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{6}$	$2.7X10^{-5}$
At-211	Astatine (85)	$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{7}$	$2.7X10^{-4}$
Au-193	Gold (79)	$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{7}$	$2.7X10^{-4}$
Au-194		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Au-195		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{7}$	$2.7X10^{-4}$
Au-198		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Au-199		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Ba-131	Barium (56)	$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Ba-133		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Ba-133m		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Ba-140 (b)		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{5}$	$2.7X10^{-6}$
Be-7	Beryllium (4)	$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{7}$	$2.7X10^{-4}$
Be-10		$1.0X10^{4}$	$2.7X10^{-7}$	$1.0X10^{6}$	$2.7X10^{-5}$
Bi-205	Bismuth (83)	$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Bi-206		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{5}$	$2.7X10^{-6}$
Bi-207		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Bi-210		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{6}$	$2.7X10^{-5}$
Bi-210m		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{5}$	$2.7X10^{-6}$
Bi-212 (b)		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{5}$	$2.7X10^{-6}$
Bk-247	Berkelium (97)	1.0	$2.7X10^{-11}$	$1.0X10^{4}$	$2.7X10^{-7}$
Bk-249		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{6}$	$2.7X10^{-5}$
Br-76	Bromine (35)	$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{5}$	$2.7X10^{-6}$
Br-77		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Br-82		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
C-11	Carbon (6)	$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
C-14		$1.0X10^{4}$	$2.7X10^{-7}$	$1.0X10^{7}$	$2.7X10^{-4}$
Ca-41	Calcium (20)	$1.0X10^{5}$	$2.7X10^{-6}$	$1.0X10^{7}$	$2.7X10^{-4}$

Symbol of radionuclide	Element and atomic number	Activity concentration for exempt material (Bq/g)	Activity concentration for exempt material (Ci/g)	Activity limit for exempt consignment (Bq)	Activity limit for exempt consignment (Ci)
Ca-45		$1.0X10^{4}$	$2.7X10^{-7}$	$1.0X10^{7}$	$2.7X10^{-4}$
Ca-47		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Cd-109	Cadmium (48)	$1.0X10^{4}$	$2.7X10^{-7}$	$1.0X10^{6}$	$2.7X10^{-5}$
Cd-113m		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{6}$	$2.7X10^{-5}$
Cd-115		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Cd-115m		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{6}$	$2.7X10^{-5}$
Ce-139	Cerium (58)	$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Ce-141		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{7}$	$2.7X10^{-4}$
Ce-143		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Ce-144 (b)		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{5}$	$2.7X10^{-6}$
Cf-248	Californium (98)	$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{4}$	$2.7X10^{-7}$
Cf-249		1.0	$2.7X10^{-11}$	$1.0X10^{3}$	$2.7X10^{-8}$
Cf-250		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{4}$	$2.7X10^{-7}$
Cf-251		1.0	$2.7X10^{-11}$	$1.0X10^{3}$	$2.7X10^{-8}$
Cf-252		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{4}$	$2.7X10^{-7}$
Cf-253		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{5}$	$2.7X10^{-6}$
Cf-254		1.0	$2.7X10^{-11}$	$1.0X10^{3}$	$2.7X10^{-8}$
Cl-36	Chlorine (17)	$1.0X10^{4}$	$2.7X10^{-7}$	$1.0X10^{6}$	$2.7X10^{-5}$
Cl-38		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{5}$	$2.7X10^{-6}$
Cm-240	Curium (96)	$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{5}$	$2.7X10^{-6}$
Cm-241		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Cm-242		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{5}$	$2.7X10^{-6}$
Cm-243		1.0	$2.7X10^{-11}$	$1.0X10^{4}$	$2.7X10^{-7}$
Cm-244		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{4}$	$2.7X10^{-7}$
Cm-245		1.0	$2.7X10^{-11}$	$1.0X10^{3}$	$2.7X10^{-8}$
Cm-246		1.0	$2.7X10^{-11}$	$1.0X10^{3}$	$2.7X10^{-8}$
Cm-247		1.0	$2.7X10^{-11}$	$1.0X10^{4}$	$2.7X10^{-7}$
Cm-248		1.0	$2.7X10^{-11}$	$1.0X10^{3}$	$2.7X10^{-8}$
Co-55	Cobalt (27)	$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Co-56		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{5}$	$2.7X10^{-6}$
Co-57		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Co-58		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Co-58m		$1.0X10^{4}$	$2.7X10^{-7}$	$1.0X10^{7}$	$2.7X10^{-4}$
Co-60		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{5}$	$2.7X10^{-6}$
Cr-51	Chromium (24)	$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{7}$	$2.7X10^{-4}$
Cs-129	Cesium (55)	$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{5}$	$2.7X10^{-6}$
Cs-131		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{6}$	$2.7X10^{-5}$
Cs-132		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{5}$	$2.7X10^{-6}$
Cs-134		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{4}$	$2.7X10^{-7}$
Cs-134m		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{5}$	$2.7X10^{-6}$
Cs-135		$1.0X10^{4}$	$2.7X10^{-7}$	$1.0X10^{7}$	$2.7X10^{-4}$
Cs-136		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{5}$	$2.7X10^{-6}$
Cs-137 (b)		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{4}$	$2.7X10^{-7}$
Cu-64	Copper (29)	$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Cu-67		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Dy-159	Dysprosium (66)	$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{7}$	$2.7X10^{-4}$
Dy-165		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{6}$	$2.7X10^{-5}$
Dy-166		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{6}$	$2.7X10^{-5}$
Er-169	Erbium (68)	$1.0X10^{4}$	$2.7X10^{-7}$	$1.0X10^{7}$	$2.7X10^{-4}$
Er-171		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$

Symbol of radionuclide	Element and atomic number	Activity concentration for exempt material (Bq/g)	Activity concentration for exempt material (Ci/g)	Activity limit for exempt consignment (Bq)	Activity limit for exempt consignment (Ci)
Eu-147	Europium (63)	$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Eu-148		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Eu-149		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{7}$	$2.7X10^{-4}$
Eu-150 (short lived)		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{6}$	$2.7X10^{-5}$
Eu-150 (long lived)		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Eu-152		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Eu-152m		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Eu-154		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Eu-155		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{7}$	$2.7X10^{-4}$
Eu-156		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
F-18	Fluorine (9)	$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Fe-52	Iron (26)	$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Fe-55		$1.0X10^{4}$	$2.7X10^{-7}$	$1.0X10^{6}$	$2.7X10^{-5}$
Fe-59		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Fe-60		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{5}$	$2.7X10^{-6}$
Ga-67	Gallium (31)	$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Ga-68		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{5}$	$2.7X10^{-6}$
Ga-72		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{5}$	$2.7X10^{-6}$
Gd-146	Gadolinium (64)	$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Gd-148		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{4}$	$2.7X10^{-7}$
Gd-153		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{7}$	$2.7X10^{-4}$
Gd-159		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{6}$	$2.7X10^{-5}$
Ge-68	Germanium (32)	$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{5}$	$2.7X10^{-6}$
Ge-71		$1.0X10^{4}$	$2.7X10^{-7}$	$1.0X10^{8}$	$2.7X10^{-3}$
Ge-77		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{5}$	$2.7X10^{-6}$
Hf-172	Hafnium (72)	$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Hf-175		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Hf-181		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Hf-182		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Hg-194	Mercury (80)	$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Hg-195m		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Hg-197		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{7}$	$2.7X10^{-4}$
Hg-197m		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Hg-203		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{5}$	$2.7X10^{-6}$
Ho-166	Holmium (67)	$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{5}$	$2.7X10^{-6}$
Ho-166m		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
I-123	Iodine (53)	$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{7}$	$2.7X10^{-4}$
I-124		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
I-125		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{6}$	$2.7X10^{-5}$
I-126		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
I-129		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{5}$	$2.7X10^{-6}$
I-131		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
I-132		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{5}$	$2.7X10^{-6}$
I-133		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
I-134		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{5}$	$2.7X10^{-6}$
I-135		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
In-111	Indium (49)	$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
In-113m		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$

Symbol of radionuclide	Element and atomic number	Activity concentration for exempt material (Bq/g)	Activity concentration for exempt material (Ci/g)	Activity limit for exempt consignment (Bq)	Activity limit for exempt consignment (Ci)
In-114m		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
In-115m		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Ir-189	Iridium (77)	$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{7}$	$2.7X10^{-4}$
Ir-190		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Ir-192		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{4}$	$2.7X10^{-7}$
Ir-194		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{5}$	$2.7X10^{-6}$
K-40	Potassium (19)	$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
K-42		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
K-43		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Kr-79	Krypton (36)	$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{5}$	$2.7X10^{-6}$
Kr-81		$1.0X10^{4}$	$2.7X10^{-7}$	$1.0X10^{7}$	$2.7X10^{-4}$
Kr-85		$1.0X10^{5}$	$2.7X10^{-6}$	$1.0X10^{4}$	$2.7X10^{-7}$
Kr-85m		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{10}$	$2.7X10^{-1}$
Kr-87		$1.0X10^{1}$	$2.7X10^{-9}$	$1.0X10^{9}$	$2.7X10^{-2}$
La-137	Lanthanum (57)	$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{7}$	$2.7X10^{-4}$
La-140		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{5}$	$2.7X10^{-6}$
Lu-172	Lutetium (71)	$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Lu-173		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{7}$	$2.7X10^{-4}$
Lu-174		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{7}$	$2.7X10^{-4}$
Lu-174m		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{7}$	$2.7X10^{-4}$
Lu-177		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{7}$	$2.7X10^{-4}$
Mg-28	Magnesium (12)	$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{5}$	$2.7X10^{-6}$
Mn-52	Manganese (25)	$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{5}$	$2.7X10^{-6}$
Mn-53		$1.0X10^{4}$	$2.7X10^{-7}$	$1.0X10^{9}$	$2.7X10^{-2}$
Mn-54		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Mn-56		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{5}$	$2.7X10^{-6}$
Mo-93	Molybdenum (42)	$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{8}$	$2.7X10^{-3}$
Mo-99		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
N-13	Nitrogen (7)	$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{9}$	$2.7X10^{-2}$
Na-22	Sodium (11)	$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Na-24		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{5}$	$2.7X10^{-6}$
Nb-93m	Niobium (41)	$1.0X10^{4}$	$2.7X10^{-7}$	$1.0X10^{7}$	$2.7X10^{-4}$
Nb-94		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Nb-95		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Nb-97		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Nd-147	Neodymium (60)	$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Nd-149		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Ni-59	Nickel (28)	$1.0X10^{4}$	$2.7X10^{-7}$	$1.0X10^{8}$	$2.7X10^{-3}$
Ni-63		$1.0X10^{5}$	$2.7X10^{-6}$	$1.0X10^{8}$	$2.7X10^{-3}$
Ni-65		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Np-235	Neptunium (93)	$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{7}$	$2.7X10^{-4}$
Np-236 (short-lived)		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{7}$	$2.7X10^{-4}$
Np-236 (long-lived)		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{5}$	$2.7X10^{-6}$
Np-237 (b)		1.0	$2.7X10^{-11}$	$1.0X10^{3}$	$2.7X10^{-8}$
Np-239		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{7}$	$2.7X10^{-4}$
Os-185	Osmium (76)	$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Os-191		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{7}$	$2.7X10^{-4}$
Os-191m		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{7}$	$2.7X10^{-4}$

Symbol of radionuclide	Element and atomic number	Activity concentration for exempt material (Bq/g)	Activity concentration for exempt material (Ci/g)	Activity limit for exempt consignment (Bq)	Activity limit for exempt consignment (Ci)
Os-193		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Os-194		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{5}$	$2.7X10^{-6}$
P-32	Phosphorus (15)	$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{5}$	$2.7X10^{-6}$
P-33		$1.0X10^{5}$	$2.7X10^{-6}$	$1.0X10^{8}$	$2.7X10^{-3}$
Pa-230	Protactinium (91)	$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Pa-231		1.0	$2.7X10^{-11}$	$1.0X10^{3}$	$2.7X10^{-8}$
Pa-233		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{7}$	$2.7X10^{-4}$
Pb-201	Lead (82)	$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Pb-202		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{6}$	$2.7X10^{-5}$
Pb-203		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Pb-205		$1.0X10^{4}$	$2.7X10^{-7}$	$1.0X10^{7}$	$2.7X10^{-4}$
Pb-210 (b)		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{4}$	$2.7X10^{-7}$
Pb-212 (b)		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{5}$	$2.7X10^{-6}$
Pd-103	Palladium (46)	$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{8}$	$2.7X10^{-3}$
Pd-107		$1.0X10^{5}$	$2.7X10^{-6}$	$1.0X10^{8}$	$2.7X10^{-3}$
Pd-109		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{6}$	$2.7X10^{-5}$
Pm-143	Promethium (61)	$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Pm-144		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Pm-145		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{7}$	$2.7X10^{-4}$
Pm-147		$1.0X10^{4}$	$2.7X10^{-7}$	$1.0X10^{7}$	$2.7X10^{-4}$
Pm-148m		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Pm-149		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{6}$	$2.7X10^{-5}$
Pm-151		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Po-210	Polonium (84)	$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{4}$	$2.7X10^{-7}$
Pr-142	Praseodymium (59)	$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{5}$	$2.7X10^{-6}$
Pr-143		$1.0X10^{4}$	$2.7X10^{-7}$	$1.0X10^{6}$	$2.7X10^{-5}$
Pt-188	Platinum (78)	$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Pt-191		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Pt-193		$1.0X10^{4}$	$2.7X10^{-7}$	$1.0X10^{7}$	$2.7X10^{-4}$
Pt-193m		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{7}$	$2.7X10^{-4}$
Pt-195m		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Pt-197		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{6}$	$2.7X10^{-5}$
Pt-197m		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Pu-236	Plutonium (94)	$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{4}$	$2.7X10^{-7}$
Pu-237		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{7}$	$2.7X10^{-4}$
Pu-238		1.0	$2.7X10^{-11}$	$1.0X10^{4}$	$2.7X10^{-7}$
Pu-239		1.0	$2.7X10^{-11}$	$1.0X10^{4}$	$2.7X10^{-7}$
Pu-240		1.0	$2.7X10^{-11}$	$1.0X10^{3}$	$2.7X10^{-8}$
Pu-241		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{5}$	$2.7X10^{-6}$
Pu-242		1.0	$2.7X10^{-11}$	$1.0X10^{4}$	$2.7X10^{-7}$
Pu-244		1.0	$2.7X10^{-11}$	$1.0X10^{4}$	$2.7X10^{-7}$
Ra-223 (b)	Radium (88)	$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{5}$	$2.7X10^{-6}$
Ra-224 (b)		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{5}$	$2.7X10^{-6}$
Ra-225		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{5}$	$2.7X10^{-6}$
Ra-226 (b)		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{4}$	$2.7X10^{-7}$
Ra-228 (b)		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{5}$	$2.7X10^{-6}$
Rb-81	Rubidium (37)	$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Rb-83		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Rb-84		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$

Symbol of radionuclide	Element and atomic number	Activity concentration for exempt material (Bq/g)	Activity concentration for exempt material (Ci/g)	Activity limit for exempt consignment (Bq)	Activity limit for exempt consignment (Ci)
Rb-86		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{5}$	$2.7X10^{-6}$
Rb-87		$1.0X10^{4}$	$2.7X10^{-7}$	$1.0X10^{7}$	$2.7X10^{-4}$
Rb (nat)		$1.0X10^{4}$	$2.7X10^{-7}$	$1.0X10^{7}$	$2.7X10^{-4}$
Re-184	Rhenium (75)	$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Re-184m		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Re-186		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{6}$	$2.7X10^{-5}$
Re-187		$1.0X10^{6}$	$2.7X10^{-5}$	$1.0X10^{9}$	$2.7X10^{-2}$
Re-188		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{5}$	$2.7X10^{-6}$
Re-189		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Re (nat)		$1.0X10^{6}$	$2.7X10^{-5}$	$1.0X10^{9}$	$2.7X10^{-2}$
Rh-99	Rhodium (45)	$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Rh-101		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{7}$	$2.7X10^{-4}$
Rh-102		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Rh-102m		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Rh-103m		$1.0X10^{4}$	$2.7X10^{-7}$	$1.0X10^{8}$	$2.7X10^{-3}$
Rh-105		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{7}$	$2.7X10^{-4}$
Rn-222 (b)	Radon (86)	$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{8}$	$2.7X10^{-3}$
Ru-97	Ruthenium (44)	$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{7}$	$2.7X10^{-4}$
Ru-103		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Ru-105		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Ru-106 (b)		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{5}$	$2.7X10^{-6}$
S-35	Sulphur (16)	$1.0X10^{5}$	$2.7X10^{-6}$	$1.0X10^{8}$	$2.7X10^{-3}$
Sb-122	Antimony (51)	$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{4}$	$2.7X10^{-7}$
Sb-124		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Sb-125		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Sb-126		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{5}$	$2.7X10^{-6}$
Sc-44	Scandium (21)	$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{5}$	$2.7X10^{-6}$
Sc-46		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Sc-47		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Sc-48		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{5}$	$2.7X10^{-6}$
Se-75	Selenium (34)	$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Se-79		$1.0X10^{4}$	$2.7X10^{-7}$	$1.0X10^{7}$	$2.7X10^{-4}$
Si-31	Silicon (14)	$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{6}$	$2.7X10^{-5}$
Si-32		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{6}$	$2.7X10^{-5}$
Sm-145	Samarium (62)	$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{7}$	$2.7X10^{-4}$
Sm-147		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{4}$	$2.7X10^{-7}$
Sm-151		$1.0X10^{4}$	$2.7X10^{-7}$	$1.0X10^{8}$	$2.7X10^{-3}$
Sm-153		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Sn-113	Tin (50)	$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{7}$	$2.7X10^{-4}$
Sn-117m		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Sn-119m		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{7}$	$2.7X10^{-4}$
Sn-121m		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{7}$	$2.7X10^{-4}$
Sn-123		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{6}$	$2.7X10^{-5}$
Sn-125		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{5}$	$2.7X10^{-6}$
Sn-126		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{5}$	$2.7X10^{-6}$
Sr-82	Strontium (38)	$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{5}$	$2.7X10^{-6}$
Sr-85		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Sr-85m		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{7}$	$2.7X10^{-4}$
Sr-87m		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Sr-89		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{6}$	$2.7X10^{-5}$

Symbol of radionuclide	Element and atomic number	Activity concentration for exempt material (Bq/g)	Activity concentration for exempt material (Ci/g)	Activity limit for exempt consignment (Bq)	Activity limit for exempt consignment (Ci)
Sr-90 (b)		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{4}$	$2.7X10^{-7}$
Sr-91		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{5}$	$2.7X10^{-6}$
Sr-92		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
T (H-3)	Tritium (1)	$1.0X10^{6}$	$2.7X10^{-5}$	$1.0X10^{9}$	$2.7X10^{-2}$
Ta-178 (long-lived)	Tantalum (73)	$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Ta-179		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{7}$	$2.7X10^{-4}$
Ta-182		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{4}$	$2.7X10^{-7}$
Tb-157	Terbium (65)	$1.0X10^{4}$	$2.7X10^{-7}$	$1.0X10^{7}$	$2.7X10^{-4}$
Tb-158		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Tb-160		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Tc-95m	Technetium (43)	$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Tc-96		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Tc-96m		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{7}$	$2.7X10^{-4}$
Tc-97		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{8}$	$2.7X10^{-3}$
Tc-97m		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{7}$	$2.7X10^{-4}$
Tc-98		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Tc-99		$1.0X10^{4}$	$2.7X10^{-7}$	$1.0X10^{7}$	$2.7X10^{-4}$
Tc-99m		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{7}$	$2.7X10^{-4}$
Te-121	Tellurium (52)	$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Te-121m		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Te-123m		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{7}$	$2.7X10^{-4}$
Te-125m		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{7}$	$2.7X10^{-4}$
Te-127		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{6}$	$2.7X10^{-5}$
Te-127m		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{7}$	$2.7X10^{-4}$
Te-129		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Te-129m		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{6}$	$2.7X10^{-5}$
Te-131m		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Te-132		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{7}$	$2.7X10^{-4}$
Th-227	Thorium (90)	$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{4}$	$2.7X10^{-7}$
Th-228 (b)		1.0	$2.7X10^{-11}$	$1.0X10^{4}$	$2.7X10^{-7}$
Th-229 (b)		1.0	$2.7X10^{-11}$	$1.0X10^{3}$	$2.7X10^{-8}$
Th-230		1.0	$2.7X10^{-11}$	$1.0X10^{4}$	$2.7X10^{-7}$
Th-231		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{7}$	$2.7X10^{-4}$
Th-232		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{4}$	$2.7X10^{-7}$
Th-234 (b)		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{5}$	$2.7X10^{-6}$
Th (nat) (b)		1.0	$2.7X10^{-11}$	$1.0X10^{3}$	$2.7X10^{-8}$
Ti-44	Titanium (22)	$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{5}$	$2.7X10^{-6}$
Tl-200	Thallium (81)	$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Tl-201		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Tl-202		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Tl-204		$1.0X10^{4}$	$2.7X10^{-7}$	$1.0X10^{4}$	$2.7X10^{-7}$
Tm-167	Thulium (69)	$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Tm-170		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{6}$	$2.7X10^{-5}$
Tm-171		$1.0X10^{4}$	$2.7X10^{-7}$	$1.0X10^{8}$	$2.7X10^{-3}$
U-230 (fast lung absorption) (b),(d)	Uranium (92)	$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{5}$	$2.7X10^{-6}$
U-230 (medium lung absorption) (e)		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{4}$	$2.7X10^{-7}$

Symbol of radionuclide	Element and atomic number	Activity concentration for exempt material (Bq/g)	Activity concentration for exempt material (Ci/g)	Activity limit for exempt consignment (Bq)	Activity limit for exempt consignment (Ci)
U-230 (slow lung absorption) (f)		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{4}$	$2.7X10^{-7}$
U-232 (fast lung absorption) (b),(d)		1.0	$2.7X10^{-11}$	$1.0X10^{3}$	$2.7X10^{-8}$
U-232 (medium lung absorption) (e)		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{4}$	$2.7X10^{-7}$
U-232 (slow lung absorption) (f)		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{4}$	$2.7X10^{-7}$
U-233 (fast lung absorption) (d)		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{4}$	$2.7X10^{-7}$
U-233 (medium lung absorption) (e)		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{5}$	$2.7X10^{-6}$
U-233 (slow lung absorption) (f)		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{5}$	$2.7X10^{-6}$
U-234 (fast lung absorption) (d)		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{4}$	$2.7X10^{-7}$
U-234 (medium lung absorption) (e)		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{5}$	$2.7X10^{-6}$
U-234 (slow lung absorption) (f)		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{5}$	$2.7X10^{-6}$
U-235 (all lung absorption types) (b),(d),(e),(f)		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{4}$	$2.7X10^{-7}$
U-236 (fast lung absorption) (d)		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{4}$	$2.7X10^{-7}$
U-236 (medium lung absorption) (e)		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{5}$	$2.7X10^{-6}$
U-236 (slow lung absorption) (f)		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{4}$	$2.7X10^{-7}$
U-238 (all lung absorption types) (b),(d),(e),(f)		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{4}$	$2.7X10^{-7}$
U (natural) (b)		1.0	$2.7X10^{-11}$	$1.0X10^{3}$	$2.7X10^{-8}$
U (enriched to 20% or less) (g)		1.0	$2.7X10^{-11}$	$1.0X10^{3}$	$2.7X10^{-8}$
U (dep)		1.0	$2.7X10^{-11}$	$1.0X10^{3}$	$2.7X10^{-8}$
V-48	Vanadium (23)	$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{5}$	$2.7X10^{-6}$
V-49		$1.0X10^{4}$	$2.7X10^{-7}$	$1.0X10^{7}$	$2.7X10^{-4}$
W-178	Tungsten (74)	$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
W-181		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{7}$	$2.7X10^{-4}$
W-185		$1.0X10^{4}$	$2.7X10^{-7}$	$1.0X10^{7}$	$2.7X10^{-4}$
W-187		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
W-188		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{5}$	$2.7X10^{-6}$
Xe-122	Xenon (54)	$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{9}$	$2.7X10^{-2}$
Xe-123		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{9}$	$2.7X10^{-2}$
Xe-127		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{5}$	$2.7X10^{-6}$
Xe-131m		$1.0X10^{4}$	$2.7X10^{-7}$	$1.0X10^{4}$	$2.7X10^{-7}$

Symbol of radionuclide	Element and atomic number	Activity concentration for exempt material (Bq/g)	Activity concentration for exempt material (Ci/g)	Activity limit for exempt consignment (Bq)	Activity limit for exempt consignment (Ci)
Xe-133		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{4}$	$2.7X10^{-7}$
Xe-135		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{10}$	$2.7X10^{-1}$
Y-87	Yttrium (39)	$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Y-88		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Y-90		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{5}$	$2.7X10^{-6}$
Y-91		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{6}$	$2.7X10^{-5}$
Y-91m		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Y-92		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{5}$	$2.7X10^{-6}$
Y-93		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{5}$	$2.7X10^{-6}$
Yb-169	Ytterbium (70)	$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{7}$	$2.7X10^{-4}$
Yb-175		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{7}$	$2.7X10^{-4}$
Zn-65	Zinc (30)	$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Zn-69		$1.0X10^{4}$	$2.7X10^{-7}$	$1.0X10^{6}$	$2.7X10^{-5}$
Zn-69m		$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Zr-88	Zirconium (40)	$1.0X10^{2}$	$2.7X10^{-9}$	$1.0X10^{6}$	$2.7X10^{-5}$
Zr-93 (b)		$1.0X10^{3}$	$2.7X10^{-8}$	$1.0X10^{7}$	$2.7X10^{-4}$
Zr-95		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{6}$	$2.7X10^{-5}$
Zr-97 (b)		$1.0X10^{1}$	$2.7X10^{-10}$	$1.0X10^{5}$	$2.7X10^{-6}$

[a] [Reserved].

[b] Parent nuclides and their progeny included in secular equilibrium are listed in the following:

Sr-90	Y-90
Zr-93	Nb-93m
Zr-97	Nb-97
Ru-106	Rh-106
Cs-137	Ba-137m
Ce-144	Pr-144
Ba-140	La-140
Bi-212	Tl-208 (0.36), Po-212 (0.64)
Pb-210	Bi-210, Po-210
Pb-212	Bi-212, Tl-208 (0.36), Po-212 (0.64)
Rn-222	Po-218, Pb-214, Bi-214, Po-214
Ra-223	Rn-219, Po-215, Pb-211, Bi-211, Tl-207
Ra-224	Rn-220, Po-216, Pb-212, Bi-212, Tl-208(0.36), Po-212 (0.64)
Ra-226	Rn-222, Po-218, Pb-214, Bi-214, Po-214, Pb-210, Bi-210, Po-210
Ra-228	Ac-228
Th-228	Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Tl-208 (0.36), Po-212 (0.64)
Th-229	Ra-225, Ac-225, Fr-221, At-217, Bi-213, Po-213, Pb-209
Th-nat	Ra-228, Ac-228, Th-228, Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Tl-208 (0.36), Po-212(0.64)
Th-234	Pa-234m
U-230	Th-226, Ra-222, Rn-218, Po-214
U-232	Th-228, Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Tl-208 (0.36), Po-212 (0.64)
U-235	Th-231
U-238	Th-234, Pa-234m
U-nat	Th-234, Pa-234m, U-234, Th-230, Ra-226, Rn-222, Po-218, Pb-214, Bi-214, Po-214, Pb-210, Bi-210, Po-210
Np-237	Pa-233
Am-242m	Am-242

Sr-90	Y-90
Am-243	Np-239

[c] [Reserved].

[d] These values apply only to compounds of uranium that take the chemical form of UF_6, UO_2F_2 and $UO_2(NO_3)_2$ in both normal and accident conditions of transport.

[e] These values apply only to compounds of uranium that take the chemical form of UO_3, UF_4, UCl_4 and hexavalent compounds in both normal and accident conditions of transport.

[f] These values apply to all compounds of uranium other than those specified in notes (d) and (e) of this table.

[g] These values apply to unirradiated uranium only.

[1] The term "exclusive use" is used interchangeably with the terms "sole use" or "full load" in other regulations, such as Title 49 of the Code of Federal Regulations.

[2] Department jurisdiction extends only to special nuclear material if quantities are not sufficient to form a critical mass as defined in Rule .01(2)(ddddd) of these Regulations.

[3] The definition of nuclear waste in this Part is used in the same way as in 49 CFR 173.403.

[4] Notification of an incident shall be filed with, or made to, the Department as prescribed in 49 CFR, regardless of and in addition to notification made to DOT or to other agencies.

[5] A flat-bed style vehicle with a personnel barrier shall have radiation levels determined at vertical planes. If no personnel barrier is in place, the package cannot exceed 200 millirem per hour (2 mSv/hr) at any accessible surface.

[6] A list of the mailing addresses of the governors and governors' designees is available upon request from the Director, State Programs, NRC, Washington, D.C., 20555. The list will be published in the Federal Register on or about June 30 of each year to reflect any changes in information.

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391-3-17-.08 Regulation and Licensing of Naturally-Occurring Radioactive Materials (NORM)

(1) **Purpose.** This Rule, 391-3-17-.08, establishes radiation protection standards for the possession, use, transfer, and disposal of naturally-occurring radioactive materials (NORM) not subject to regulation under the Atomic Energy Act of 1954, as amended. All numbered and lettered references within this Rule refer to parts of this Rule, unless stated otherwise.

(2) **Scope.**

(a) This Rule applies to any person who engages in the extraction, mining, storage, beneficiating, processing, use, transfer, or disposal of NORM in such a manner as to alter the chemical properties or physical state of the NORM or its potential exposure pathways to humans.

(b) This Rule addresses the introduction of NORM into products in which neither the NORM nor the radiation emitted from the NORM is considered to be beneficial to the products. The manufacture and distribution of products containing NORM in which the NORM and/or its associated radiation(s) is considered to be a beneficial attribute are licensed under the provisions of Rule .02 of this Chapter.

(c) This Rule also addresses waste management and disposal standards.

(3) **Definitions.** As used in this Rule, the following definitions apply:

(a) "Beneficial attribute" or "Beneficial to the product" means that the radioactivity of the product is necessary to the use of the product.

(b) "Beneficiating" means the processing of materials for the purpose of altering the chemical or physical properties to improve the quality, purity, or assay grade.

(c) "General environment" means the total terrestrial, atmospheric, and aquatic environments outside sites within which any activity, operation, or process authorized by a general or specific license issued under this Rule is performed.

(d) "Naturally-occurring radioactive material" (NORM) means any nuclide which is radioactive in its natural physical state (i.e., not man-made), but does not include byproduct, source, or special nuclear material.

(e) "Product" means something produced, made, manufactured, refined, or beneficiated.

(f) "Recycling" means a process by which materials that have served their intended use are collected, separated, or processed and returned to use in the form of raw materials in the production of new products. Recycling shall not include the use of a material in a manner that constitutes disposal in accordance with Rule .03(12).

(g) "Technologically-enhanced" means the chemical properties or physical state of natural sources of radiation have been altered or the potential exposure pathways of natural sources of radiation to humans have been altered.

(h) "Working Level" (WL) means any combination of short-lived radon decay products in one liter of air that will result in the ultimate emission of alpha particles with a total energy of 130 billion electron volts (2.1×10^{-8}J).

(4) **Exemptions.**

(a) Persons who receive, possess, use, process, store, transfer, commercially distribute, or dispose of NORM are exempt from the requirements of this Chapter if the materials contain or are contaminated by concentrations of:

1. Either:

(i) 30 picocuries (1.11 Bq) per gram or less of technologically-enhanced radium-226 or radium-228 in soil, averaged over any 100 square meters and averaged over the first 15 centimeters of soil below the surface, provided that the radon emanation rate is less than 20 pCi (.74 Bq) per square meter per second, or

(ii) 30 pCi (1.11 Bq) per gram or less of technologically-enhanced radium-226 or radium-228 in media other than soil, provided that the radon emanation rate is less than 20 pCi (.74 Bq) per square meter per second;

2. Either:

(i) 5 pCi (.185 Bq) per gram or less of technologically-enhanced radium-226 or radium-228 in soil, averaged over any 100 square meters and averaged over the first 15 centimeters of soil below the surface, in which the radon emanation rate is equal to or greater than 20 pCi (.74 Bq) per square meter per second, or

(ii) 5 pCi (.185 Bq) per gram or less of technologically-enhanced radium-226 or radium-228 in media other than soil, in which the radon emanation rate is equal to or greater than 20 pCi (.74 Bq) per square meter per second; or

3. Either:

(i) 150 pCi (5.55 Bq) or less per gram of any other NORM radionuclide in soil, averaged over any 100 square meters and averaged over the first 15 centimeters of soil below the surface, provided that these concentrations are not exceeded at any time, or

(ii) 150 pCi (5.55 Bq) or less per gram of any other NORM radionuclide in media other than soil, provided that these concentrations are not exceeded at any time.

(b) Persons who receive products or materials containing NORM distributed in accordance with a specific license issued by the Director pursuant to (12)(c) are exempt from this Chapter.

(c) The manufacturing, commercial distribution, use, and disposal of the following products/materials are exempt from the requirements of this Chapter:

1. Potassium and potassium compounds which have not been isotopically enriched in the radionuclide K-40;

2. Brazil nuts; and

3. Byproducts from fossil fuel combustion (bottom ash, fly ash, and flue-gas emission control byproducts);

4. Materials used for building and highway construction, industrial processes, sand blasting, metal casings, or other material containing NORM, in which the radionuclide content has not been concentrated to levels higher than found in its natural state.

(d) The wholesale and retail distribution (including custom blending), possession, and use of the following products/materials are exempt from the requirements of this Chapter:

1. Phosphate and potash fertilizer;

2. Phosphogypsum for agricultural uses; and

3. Materials used for building and highway construction, industrial processes, sand blasting, metal casings, or other material containing NORM, in which the radionuclide content has not been concentrated to levels higher than found in its natural state.

(e) The possession, storage, transportation, commercial distribution, and use of natural gas and natural gas products and crude oil and crude oil products as a fuel are exempt from the requirements of this Chapter. The distribution of natural gas and crude oil and the manufacturing and distribution of natural gas and crude oil products are exempt from the specific license requirements of this Rule but are subject to the general license requirements in (7), (8), and (9).

(f) Materials in the recycling process, including scale or residue not otherwise exempted, and other equipment containing NORM are exempt from the requirements of this Rule if the maximum radiation exposure level does not exceed 50 microroentgens per hour including the background radiation level at any accessible point.

(g) Possession of produced waters from crude oil and natural gas production is exempt from the requirements of this Rule if the produced waters are reinjected in a well approved by the Division or if the produced waters are discharged under the authority of the Division.

(5) **Radiation Survey Instruments.**

(a) Radiation survey instruments used to determine exemptions pursuant to (4)(f) and radiation survey instruments used to make surveys in accordance with (7) shall be able to measure from 1 microroentgen per hour through at least 500 microroentgens per hour.

(b) Radiation survey instruments used to make surveys required by this Rule shall be calibrated, appropriate, and operable.

(c) Each radiation survey instrument shall be calibrated:

1. By a person licensed by the Director, another Agreement State or by the U.S. Nuclear Regulatory Commission to perform such service;

2. At energies appropriate for the licensee's use;

3. At intervals not to exceed 12 months, and after each instrument servicing other than battery replacement; and

4. To demonstrate an accuracy within plus or minus 20 percent using a reference source provided by a person authorized pursuant to (5)(c)1.

(d) Records of these calibrations shall be maintained for Division inspection for 5 years after the calibration date.

(6) **Effective Date.** The provisions and requirements of this Rule shall take effect upon March 26, 1994, and shall apply to all facilities or sites owned or controlled by a person on that date. Products distributed and disposals made prior to that date are not subject to the provisions of this Rule.

(7) **General License.**

(a) A general license is hereby issued to mine, extract, receive, possess, own, use, store, transfer, process, and dispose of NORM not exempted in (4) without regard to quantity. This general license does not authorize the manufacturing or commercial distribution of products containing NORM in concentrations greater than those specified in (4) nor the disposal of wastes from other persons.

(b) Facilities and equipment contaminated with NORM in excess of the levels set forth in the Appendix of this Rule shall not be released for unrestricted use. The decontamination of equipment and facilities shall be performed only by persons specifically licensed by the Director to conduct such work. Each general licensee shall establish written

procedures for the evaluation (or screening) of equipment, components, and facilities prior to release for unrestricted use to ensure that the levels in this Appendix are not exceeded.

(c) No person shall transfer land for unrestricted use where the concentration of radium-226 or radium-228 in soil averaged over any 100 square meters exceeds the background level by more than:

1. 5 pCi/g (185 Bq/kg), averaged over the first 15 cm of soil below the surface; and

2. 15 pCi/g (555 Bq/kg), averaged over 15 cm thick layers of soil more than 15 cm below the surface.

(d) The handling or processing by a general licensee of NORM-contaminated materials not otherwise exempted from these Rules for the purpose of recycling is authorized by the Division if the radiation level 18 inches from the NORM-contaminated material does not exceed 2 millirem per hour.

(e) Equipment contaminated with NORM in excess of the levels set forth in the Appendix of this Rule may be released for maintenance and/or overhaul provided the recipient is specifically licensed to perform the activity on contaminated equipment.

(f) The decontamination of equipment, facilities, and land, as described in (10)(b), shall only be performed by persons specifically licensed by the Director to conduct such work.

(g) Transfer of NORM.

1. The transfer of NORM not exempt from this Chapter from one general licensee to another general licensee may be authorized by the Division if:

(i) The equipment and facilities contaminated with NORM are to be used by the recipient for the same purpose or at the same time,

(ii) The transfer of control or ownership of land contaminated with NORM includes an annotation in the deed records to indicate the presence of NORM,

(iii) The materials being transferred are ores or raw materials for processing or refinement, or

(iv) The material being transferred is in the recycling process.

2. Transfers made under (7)(g)1. do not relieve the general licensee who makes the transfer from the responsibilities of assessing the extent of NORM contamination or material present, evaluating the hazards of the NORM, informing the general licensee receiving the NORM of these assessments and evaluations, and maintaining records required by this Chapter.

(8) **Protection of Workers and the General Population During Operations.** Each person subject to a general license in (7) or to a specific license shall conduct operations in compliance with the standards for radiation protection set forth in Rules .03 and .07 of this Chapter, except for disposal, which shall be governed by (9).

(9) **Disposal and Transfer of Waste for Disposal.**

(a) Each person subject to the general license in (7) or a specific license shall manage and dispose of wastes containing NORM:

1. In accordance with the applicable requirements of the U.S. Environmental Protection Agency for disposal of such wastes;

2. In a manner equivalent to the requirements for uranium and thorium byproduct materials in 40 CFR 192;

3. By transfer of the wastes for disposal to a land disposal facility licensed by the U.S. Nuclear Regulatory Commission or an Agreement State; or

4. In accordance with alternate methods authorized by the Division upon application or upon the Division's initiative.

(b) Records of disposal, including manifests, shall be maintained pursuant to the provisions of Rule .03 of this Chapter.

(c) Transfers of waste containing NORM for disposal shall be made only to a person specifically authorized to receive such waste.

(10) **Specific Licenses.**

(a) Unless otherwise exempted under the provisions of (4) or licensed under the provisions of Rule .02 of this Chapter, the manufacturing and commercial distribution of any material or product containing NORM shall be specifically licensed pursuant to the requirements of this Rule or pursuant to equivalent regulations of the U.S. Nuclear Regulatory Commission or another Agreement State.

(b) Persons conducting the following activities involving equipment or facilities contaminated with NORM in excess of the levels set forth in the Appendix of this Rule or land contaminated in excess of the limits set forth in (7)(c) shall be specifically licensed pursuant to the requirements of this Rule:

1. Decontamination of equipment, facilities, and land; or

2. Disposal or storage of the resulting waste.

(11) **Filing Application for Specific Licenses.**

(a) Applications for specific licenses shall be filed in a manner and on a form prescribed by the Division.

(b) The Division may at any time after the filing of the original application, and before the expiration of the license, require further statements in order to enable the Division to determine whether the application should be granted or denied or whether a license should be modified or revoked.

(c) Each application shall be signed by the applicant or licensee or a person duly authorized to act for and on behalf of the licensee.

(d) An application for a specific license may include a request for a license authorizing one or more activities.

(e) In an application, the applicant may incorporate by reference information contained in previous applications, statements, or reports filed with the Division provided such references are clear and specific by page and paragraph.

(f) Applications and documents submitted to the Division may be made available for public inspection pursuant to the open records act, O.C.G.A. Section 50-18-70, et seq., except that the Division may withhold any document or part thereof from public inspection if disclosure of its contents is not required by law.

(12) **Requirements for the Issuance of Specific Licenses.**

(a) An application for a specific license will be approved if the Division determines that:

1. The applicant is qualified by reason of training and experience to use the NORM in question for the purpose requested in accordance with these Rules in such a manner as to minimize danger to public health and safety, the environment, or property;

2. The applicant's proposed equipment, facilities, and procedures are adequate to minimize danger to public health and safety, the environment, and property;

3. The issuance of the license will not be inimical to the health and safety of the public;

4. The applicant satisfied any applicable special requirement in this Rule;

5. The applicant has met the financial surety requirements of (21); and

6. The applicant has appointed a qualified Radiation Safety Officer (RSO). The applicant, through the RSO, shall ensure that Radiation Safety activities are being performed in accordance with approved procedures and regulatory requirements in the daily operation of the applicant's program.

(i) The Radiation Safety Officer shall:

(I) Investigate overexposures, accidents, spills, losses, thefts, unauthorized receipts, uses, transfers, and disposals, and other deviations from approved radiation safety practices. The RSO shall have the authority to assume control and implement corrective actions, including shut down of operations when emergency or unsafe conditions exist.

(II) Have a thorough knowledge of the licensee's management policies and administrative procedures.

(III) Implement policies and procedures for:

I. Keeping an inventory record of radioactive material;

II. Using radioactive material safely and in accordance with the ALARA philosophy;

III. Taking emergency action if control of radioactive material is lost;

IV. Performing periodic radiation surveys;

V. Performing checks and calibrations of survey instruments and other safety equipment;

VI. Disposing of radioactive material;

VII. Training personnel who work in or frequent areas where radioactive material is used or stored; and

VIII. Keeping a copy of all records and reports required by the Regulations, a copy of this Chapter, a copy of each licensing request, the license and its amendments, and the written policy and procedures required by the Regulations.

(ii) The RSO's qualifications shall be submitted to the Division and shall include:

(I) Possession of a high school diploma or a certificate of high school equivalency based on the GED test;

(II) Completion of the training and testing requirements of the activities for which the license application is submitted; and

(III) Training and experience necessary to supervise the Radiation Safety aspects of the licensed activity.

(b) An application for a specific license to decontaminate equipment, land, or facilities contaminated with NORM in excess of the levels set forth in (4), (7)(c), or the Appendix of this Rule, as applicable, and to dispose of the resulting waste will be approved if:

1. The applicant satisfies the general requirements specified in (12)(a); and

2. The applicant has adequately addressed the following items in the application:

(i) Procedures and equipment for monitoring and protection of workers;

(ii) An evaluation of the radiation levels and concentrations of contamination expected during normal operations;

(iii) Operating and emergency procedures, including procedures for waste reduction and quality assurance of items released for unrestricted use; and

(iv) Method of disposing of the NORM removed from contaminated equipment, facilities, and/or land.

(c) An application for a specific license to manufacture and/or distribute products or materials containing NORM to persons exempted from this Chapter pursuant to (4)(b) will be approved if:

1. The applicant satisfied the general requirements specified in (12)(a);

2. The NORM is not contained in any food, beverage, cosmetic, drug, or other commodity designed for ingestion or inhalation by, or application to, a human being without approval by the U.S. Food and Drug Administration; and

3. The applicant submits sufficient information relating to the design, manufacture, prototype testing, quality control procedures, labeling or marking, and conditions of handling, storage, use, and disposal of the NORM material or product to demonstrate that the material or product will meet the safety criteria set forth in (13). The information shall include:

(i) A description of the material or product and its intended use or uses;

(ii) The type, quantity, and concentration of NORM in each material or product;

(iii) The chemical and physical form of the NORM in the material or product, and changes in chemical and physical form that may occur during the useful life of the material or product;

(iv) An analysis of the solubility in water and body fluids of the NORM in the material or product;

(v) The details of manufacture and design of the material or Rule product relating to containment and shielding of the NORM and other safety features under normal and severe conditions of handling, storage, use, reuse, and disposal of the material or product;

(vi) The type and degree of access of human beings to the material or product during normal handling, use, and disposal;

(vii) The total quantity of NORM expected to be distributed annually in the material or product;

(viii) The expected useful life of the material or product;

(ix) The proposed method of labeling or marking each unit of the material or product with identification of the manufacturer and/or initial transferor of the product and the radionuclide(s) and quantity of NORM in the material or product;

(x) The procedures for prototype testing of the material or product to demonstrate the effectiveness of the containment, shielding, and other safety features under both normal and severe conditions of handling, storage, use, reuse, and disposal;

(xi) The results of the prototype testing of the material or product, including any change in the form of the NORM contained in it, the extent to which the NORM may be released to the environment, any change in radiation levels, and any other changes in safety features;

(xii) The estimated external radiation doses and dose commitments relevant to the safety criteria in (13) and the basis for such estimates;

(xiii) A determination that the probabilities with respect to doses referred to in (13) meet the safety criteria;

(xiv) The quality control procedures to be followed in the production of production lots of the material or product, and the quality control standards the material or product will be required to meet; and

(xv) Any additional information, including experimental studies and tests, required by the Division to facilitate a determination of the radiation safety of the material or product.

(d) Notwithstanding the provisions of (13)(b), the Director may deny an application for a specific license if the end uses of the product are frivolous or cannot be reasonably foreseen.

(13) **Safety Criteria for Specific Licenses.**

An applicant for a specific license under (12)(c) shall demonstrate that the product is designed and will be manufactured so that:

(a) In normal use, handling, storage, and disposal, the dose to any individual likely to be exposed to radiation from the material or product will not exceed the limits set forth in Rule .03 of this Chapter.

(b) In normal use, disposal, handling, and storage, it is unlikely that the radon released from the material or product will result in an increase in the average radon concentration in air of more than 0.4 picocurie (.0148 Bq) per liter.

(c) It is unlikely that there will be a significant reduction in the effectiveness of the containment, shielding, or other safety features of the material or product from wear and abuse likely to occur in normal handling and use of the material or product during its useful life.

(14) **Issuance of Specific Licenses.**

(a) Upon a determination that an application meets the requirements of the Act and Rules of the Division, the Director will issue a specific license authorizing the proposed activity in such form and containing such conditions and limitations as it deems appropriate or necessary.

(b) The Director may incorporate in any license at the time of issuance, or thereafter by amendment, such additional requirements and conditions with respect to the licensee's receipt, possession, use, and transfer of NORM subject to this Rule as it deems appropriate or necessary in order to:

1. Minimize danger to public health and safety, to property, and to the environment;

2. Require such reports, require the keeping of such records, and to provide for such inspections of activities under the license as may be appropriate or necessary; and

3. Prevent loss or theft of NORM subject to this Rule.

(15) **Conditions of Specific Licenses Issued Under (12).**

(a) General Terms and Conditions.

1. Each license issued pursuant to this Rule shall be subject to all the provisions of the Act, now or hereafter in effect, and to all Rules, Regulations, and Orders of the Director.

2. No license issued or granted under this Rule and no right to possess or utilize NORM granted by any license issued pursuant to this Rule shall be transferred, assigned, or in any manner disposed of, either voluntarily or involuntarily, directly or indirectly, through transfer of control of any license to any person unless the Division shall,

after securing full information, find that the transfer is in accordance with the provisions of the Act, and shall give its consent in writing.

3. Each person licensed by the Director pursuant to this Rule shall confine use and possession of the NORM licensed to the locations and purposes authorized in the license.

4. Each person licensed by the Director pursuant to this Rule is subject to the license provisions of (8) and (9).

5. Notification.

(i) Each licensee shall notify the Division in writing, immediately following the filing of a voluntary or involuntary petition for bankruptcy under the Chapters of Title 11 (Bankruptcy) of the United States Code (11 U.S.C.) by or against:

(I) A licensee;

(II) An entity [as that term is defined in 11 U.S.C. 101(14)] controlling a licensee or listing the license or licensee as property of the estate; or

(III) An affiliate [as that term is defined in 11 U.S.C. 101(2)] of the licensee.

(ii) This notification must indicate:

(I) The bankruptcy court in which the petition for bankruptcy was filed; and

(II) The date of the filing of the petition.

(b) Quality Control, Labeling, and Reports of Transfer. Each person listed under (12)(c) shall:

1. Carry out adequate control procedures in the manufacture of the material or product to assure that each production lot meets the quality control standards approved by the Division;

2. Label or mark each unit so that the manufacturer, processor, producer, or initial transferor of the material or product and the NORM in the material or product can be identified; and

3. Maintain records identifying, by name and address, each person to whom NORM is transferred for use under (4)(b) or the equivalent regulations of the U.S. Nuclear Regulatory Commission or another Agreement State and stating the kinds, quantities, and uses of the NORM transferred. An annual summary report stating the total quantity of each radionuclide transferred under the specific license shall be filed with the Division. Each report shall cover the year ending December 31, and shall be filed within 30 days thereafter. If no transfers of NORM have been made pursuant to (13)(c) during the reporting period, the report shall so indicate.

(16) **Expiration and Termination of Specific Licenses.**

(a) Except as provided in (17)(b) and (16)(d)6., each specific license shall expire at the end of the specified day in the month and year stated therein.

(b) Each licensee shall notify the Division immediately, in writing, and request termination of the license when the licensee decides to terminate all activities involving NORM authorized under the specific license or when the licensee decides to terminate a licensed location. This notification and request for termination of the license must include the reports and information specified in (16)(d)4. The licensee is subject to the provisions of (16)(d) and (16)(e), as applicable.

(c) No less than 30 days before the expiration date specified in a specific license, the licensee shall either:

1. Submit an application for license renewal under (17), or

2. Notify the Division in writing, under (16)(b), if the licensee decides to discontinue all activities involving NORM.

(d) If the licensee terminates a licensed location, or if a licensee does not submit an application for license renewal under (17), the licensee shall on or before the expiration date specified in the specific license:

1. Terminate use of NORM;

2. Remove NORM contamination to the extent practicable;

3. Properly dispose of the NORM; and

4. Submit a report of the disposal of NORM and radiation survey(s) to confirm the absence of NORM or to establish the levels of residual NORM contamination. The licensee shall, as appropriate:

(i) Report levels of radiation in units of microrads (μGy) per hour of beta and gamma radiation at one centimeter and gamma radiation at one meter from surfaces and report levels of radioactivity in units of disintegrations per minute (or microcuries or becquerels) per 100 square centimeters removable and fixed on surfaces, microcuries (becquerels) per milliliter in water, and picocuries per gram (Bq/kg) in contaminated solids such as soils or concrete; and

(ii) Specify the instrument(s) used and certify that each instrument is properly calibrated and tested.

5. If no radioactivity attributable to activities conducted under the license is detected, the licensee shall submit a certification that no detectable NORM contamination was found. If the Division determines that the information submitted under (16)(d)2. and (16)(d)4. is adequate and surveys confirm the findings, the Director will notify the licensee in writing that the license is terminated.

6. If detectable levels of residual NORM attributable to activities conducted under the license are found, the specific license continues in effect beyond the expiration date, if necessary, with respect to possession of residual NORM until the Director notifies the licensee in writing that the license is terminated. During this time, the licensee is subject to the provisions of (16)(e). In addition to the information submitted under (16)(d)4., the licensee shall submit a plan, if appropriate, for decontaminating the location(s) and disposing of the residual NORM.

(e) Each licensee who possesses residual NORM under (16)(d)6., following the expiration date specified in the specific license, shall:

1. Be limited to actions involving NORM related to preparing the location(s) for release for unrestricted use; and

2. Continue to control entry to restricted areas until the location(s) is (are) suitable for release for unrestricted use and the Director notifies the licensee in writing that the license is terminated.

(17) **Renewal of Specific Licenses.**

(a) Applications for renewal of specific licenses shall be filed in accordance with (11).

(b) In any case in which a licensee, not less than 30 days prior to the expiration of an existing specific license, has filed an application in proper form for renewal or for a new specific license authorizing the same activities, such existing license shall not expire until final action by the Director.

(18) **Amendment of Specific Licenses at Request of Licensee.** Applications for amendment of a license shall be filed in accordance with (11) and shall specify the respects in which the licensee desires the license to be amended and the grounds for such amendment.

(19) **Action on Applications to Renew and Amend Specific Licenses.** In considering an application by a licensee to renew or amend the specific license, the Division will apply the criteria set forth in (12).

(20) **Reciprocal Recognition of Licenses.**

Subject to this Chapter, any person who holds a specific license from the U.S. Nuclear Regulatory Commission or another Agreement State, and issued by the agency having jurisdiction where the licensee maintains an office for directing the licensed activity and at which radiation safety records are normally maintained, is hereby granted a general license to conduct the activities authorized in such licensing document within this State for a period not in excess of 180 days in any calendar year provided that:

(a) The licensing document does not limit the activity authorized by such document to specified installations or locations;

(b) The out-of-state licensee notifies the Division in writing at least 3 days prior to engaging in such activity. Such notification shall indicate the location, period, and type of proposed possession and use within the State, and shall be accompanied by a copy of the pertinent licensing document. If, for a specific case, the 3-day period would impose an undue hardship on the out-of-state licensee, the licensee may, upon application to the Division, obtain permission to proceed sooner. The Division may waive the requirement for filing additional written notifications during the remainder of the calendar year following the receipt of the initial notification from a person engaging in activities under the general license provided in (20)(a);

(c) The out-of-state licensee complies with all applicable Rules of the Division and with all the terms and conditions of the licensing document, except any such terms and conditions which may be inconsistent with applicable Rules of the Division;

(d) The out-of-state licensee supplies such other information as the Division may request; and

(e) The out-of-state licensee shall not transfer or dispose of NORM possessed or used under the general license provided in (20)(a) except by transfer to a person:

1. Specifically licensed by the Director to receive such NORM; or

2. Exempt from the requirements for a license for such NORM under (4).

(21) **Financial Surety Arrangements for Specific Licenses.**

(a) Each licensee or applicant for a specific license under (12) shall post with the Director financial surety, or security, according to the requirements of Rule .02(8)(g), of this Chapter to ensure the protection of the public health and safety, property, and the environment in the event of abandonment, default, or other inability or unwillingness of the licensee to meet the requirements of the Act and this Chapter. Financial surety arrangements shall:

1. Consist of surety bonds, cash deposits, certificates of deposit, government securities, irrevocable letters or lines of credit, or any combination of these.

2. Be in an amount sufficient to meet the applicant's or licensee's obligations under the Act and this Chapter and shall be based upon Division-approved cost estimates.

3. Be established prior to issuance of the specific license or the commencement of operations to assure that sufficient funds will be available to carry out the decontamination and decommissioning of the facility.

4. Be continuous for the duration of the license and for a period coincident with the applicant/licensee's responsibility under the Act and this Chapter.

5. Be available in Georgia subject to judicial process and execution in the event required for the purposes set forth.

6. Be established within 90 days of April 1, 1994, for licenses in effect on that date.

(b) No later than 90 days after the licensee notifies the Division that decontamination and decommissioning have been completed, the Division shall determine if these have been conducted in accordance with this Chapter and the conditions of the specific license. If the Division finds that the requirements have been met, the Director shall direct the return or release of the licensee's security in full plus any accumulated interest. If the Division finds that the requirements have not been met, the Division will notify the licensee in writing of the steps necessary for compliance.

(22) **Modification and Revocation of Licenses.**

(a) The terms and conditions of all licenses shall be subject to amendment, revision, or modification or the license may be suspended or revoked by reason of amendments to the Act, by reason of rules or Regulations promulgated by the Board, and Orders issued by the Director.

(b) Any license may be revoked, suspended, or modified, in whole or in part, for any material false statement in the application or any material false statement of fact required under provisions of the Act or this Chapter, or because of conditions revealed by such application or statement of fact or any report, record, or inspection or other means which would warrant the Director to refuse to grant a license on an original application, or for violation of, or failure to observe, any of the terms and conditions of the Act, of the license, or of any Rule, Regulation, or Order of the Director.

(c) Except in cases of willfulness or those in which the public health, interest, or safety requires otherwise, no license shall be modified, suspended, or revoked unless, prior to the institution of proceedings therefor, facts or conduct which may warrant such action shall have been called to the attention of the licensee in writing and the licensee shall have been accorded an opportunity to demonstrate or achieve compliance with all lawful requirements.

APPENDIX

ACCEPTABLE SURFACE CONTAMINATION LEVELS FOR NORM

NUCLIDE[a]	AVERAGE[bcf]	MAXIMUM[bdf]	REMOVABLE[bcef]
U-nat, U-235, and associated products (including Po-210), except Ra-226, Th-230, Ac-227, and Pa-231	5,000 dpm alpha/100 cm^2	15,000 dpm alpha/100 cm^2	11,000 dpm alpha/100 cm^2
Transuranics, Ra-226, Ra-228, Th-230, Th-228 Pa-231, Ac-227	100 dpm/100 cm^2	300 dpm/100 cm^2	20 dpm/100 cm^2
Beta-/gamma-emitters (nuclides with decay modes other than alpha emission or spontaneous fission, including Pb-210), except others noted above.	5,000 dpm beta, gamma/100 cm^2	15,000 dpm beta, gamma/100 cm^2	1,000 dpm beta, gamma/100 cm^2

[a] Surfaces contaminated with alpha- and beta-emitting naturally-occurring radionuclides may be surveyed with a detector that responds to both types of radiation. The same method may be employed when evaluating wipe samples for removable contamination.

[b] As used in this table, dpm (disintegrations per minute) means the rate of emission by naturally-occurring radioactive material as determined by correcting the counts per minute observed by an appropriate detector for background, efficiency, and geometric factors associated with the instrumentation using a ratemeter or scaler and detector appropriate for the type and energy of emissions being monitored. The detector shall be capable of responding to alpha, beta, and/or gamma radiation.

[c] Measurements of average contamination level should not be averaged over more than one square meter. For objects of less surface area, the average should be derived for each object.

[d] The maximum contamination level applies to an area of not more than 100 cm^2.

[e] The amount of removable radioactive material per 100 cm^2 of surface area should be determined by wiping that area with dry filter or soft absorbent paper, applying moderate pressure, and assessing the amount of radioactive material on the wipe with an appropriate instrument of known efficiency. When removable contamination on objects of less surface area is determined, the pertinent levels should be reduced proportionally and the entire surface should be wiped.

[f] All surveys and efficiency determinations shall be made with the detector's active surface no greater than 1 centimeter from the surface being surveyed, wipe being analyzed, or source being used. A scaler must be used when evaluating wipe samples and count times must be sufficient to detect 10 percent of the applicable limit with 95 percent confidence that the activity would be detected.

[g] Notwithstanding the levels in the table above, equipment containing NORM shall not exceed a maximum radiation exposure level of 50 microroentgens per hour, including the background radiation level at any accessible point.

Cite as Ga. Comp. R. & Regs. R. 391-3-17-.08

AUTHORITY: O.C.G.A. § 31-13-1 et seq., as amended.

HISTORY: Original Rule entitled "Administration" adopted. F. May 2, 1991; eff. May 22, 1991.

Repealed: New Rule entitled "Regulation and Licensing of Naturally-Occurring Radioactive Materials (NORM)" adopted. F. Feb. 24, 1994; eff. Mar. 16, 1994.

Amended: F. Oct. 4, 1994; eff. Oct. 24, 1994.

Amended: F. Mar. 29, 2002; eff. Apr. 18, 2002.

Amended: New title, "Regulation and Licensing of Naturally-Occurring Radioactive Materials (Norm)," as cited on SOS Rules and Regulations Website, corrected to "Regulation and Licensing of Naturally-Occurring Radioactive Materials (NORM)." F. Jan. 28, 2019; eff. Feb. 17, 2019.

Amended: F. Mar. 24, 2021; eff. Apr. 13, 2021.

391-3-17-.13 Physical Protection of Category 1 and Category 2 Quantities of Radioactive Materials

(1) Except as set forth in (2) and (3) below, this Rule incorporates by reference 10 CFR Part 37 with an Effective Date of December 30, 2019.

(2) The following provisions of 10 CFR Part 37 are not incorporated by reference. If there is a cross reference to a Federal citation specifically entirely excluded from incorporation, then the cross referenced citation is not incorporated by virtue of the cross reference:

(a) 10 CFR 37.1, Purpose.

(b) 10 CFR 37.3, Scope.

(c) 10 CFR 37.7, Communications.

(d) 10 CFR 37.9, Interpretations.

(e) 10 CFR 37.11(a-b), Specific Exemptions.

(f) 10 CFR 37.13, Information collection requirements: OMB approval.

(g) 10 CFR 37.105, Inspections.

(h) 10 CFR 37.109, Criminal penalties.

(3) The following provisions of 10 CFR Part 37 are incorporated by reference with the specified changes:

(a) "Commission," "Nuclear Regulatory Commission," "NRC," and "U.S. Nuclear Regulatory Commission," as used in the provisions of Part 37 of the Code of Federal Regulations that are incorporated by reference, mean the Georgia Environmental Protection Division, except:

1. 10 CFR 37.5 Definitions for: *Commission, Fingerprint orders, Person*,

2. 10 CFR 37.25(b) *Grandfathering*,

3. 10 CFR 37.27(a) and (c) *General performance objective and requirements, Procedures for processing fingerprint checks*,

4. 10 CFR 37.29(a),

5. 10 CFR 37.71 referring to NRC's license verification system,

6. 10 CFR 37.71 "licensee of the Commission or an Agreement State" shall be deemed to be a reference to "licensee of the Georgia Environmental Protection Division, NRC or an Agreement State."

(4) In lieu of the address given in 10 CFR 37.27(c), licensee shall submit fingerprint cards or records to U.S. Nuclear Regulatory Commission, Criminal History Program, Division of Facilities and Security, 11545 Rockville Pike, Mail Stop T-7D04M, Rockville, MD 20852.

(5) Reference in 10 CFR 37 to the following NRC regulation shall be deemed a reference to the identified section(s) in Georgia DNR Chapter 391-3-17:

(a) NRC Regulation (10 CFR) 30.41(d) refers to 391-3-17-.02(19).

(6) License required reports of events or notifications as specified in the following sections shall be submitted to Georgia Department of Natural Resources, Environmental Protection Division, as specified in Georgia DNR Chapter 391-3-17:

(a) 10 CFR 37.41,

(b) 10 CFR 37.45,

(c) 10 CFR 37.57,

(d) 10 CFR 37.77(a)-(d),

(e) 10 CFR 37.81.

Cite as Ga. Comp. R. & Regs. R. 391-3-17-.13

AUTHORITY: O.C.G.A. § 31-13-1 et seq., as amended.

HISTORY: Original Rule entitled "Physical Protection of Category 1 and Category 2 Quantities of Radioactive Materials" adopted. F. Dec. 14, 2017; eff. Jan. 3, 2018.

Amended: F. Jan. 28, 2019; eff. Feb. 17, 2019.

Amended: F. Mar. 24, 2021; eff. Apr. 13, 2021.

Department 391. RULES OF GEORGIA DEPARTMENT OF NATURAL RESOURCES

Chapter 391-3. ENVIRONMENTAL PROTECTION

Subject 391-3-20. ENHANCED INSPECTION AND MAINTENANCE

391-3-20-.01 Definitions

The following terms as used in these rules shall have the meaning hereinafter respectively ascribed, except that to the extent terms are not defined in these rules, the Act's definitions control; and provided that definitions within any subsequent rule or subdivision thereof, which are expressly made applicable to the rule or subdivision within which they appear, shall apply for purposes of such specific rule or subdivision thereof.

(a) "Act" means O.C.G.A. § 12-9-40 et seq., as amended, "The Georgia Motor Vehicle Emission Inspection and Maintenance Act."

(b) "Calibration" means, in the case of the Georgia Analyzer System (GAS), the process of establishing or verifying that the test values of the GAS emissions bench are accurate by using the applicable calibration gases. In the case of a fuel cap tester, "calibration" means the process of verifying that the measured pressure drop over time is between the upper and lower control limits.

(c) "Certificate" means the license issued by the Director to a person authorizing him or her to perform emission inspections in accordance with the requirements of the Act and this Chapter.

(d) "Certificate of Authorization" means a certificate issued by the Director to each establishment or location designated as an official emission inspection station.

(e) "Certificate of Emissions Inspection" means an official certificate that exhaust emissions, evaporative emissions, emission control equipment, and on-board diagnostic equipment have been inspected and approved in accordance with the Act and this Chapter. Such certificates will be furnished to official emission inspection stations by EPD to be completed and issued by such stations to the owner or operator of a responsible motor vehicle upon inspection and approval certifying that such responsible motor vehicle has been inspected and complies with the inspection and maintenance required by the Act and this Chapter.

(f) "DLC" means the data or diagnostic link connector for a vehicle's on-board diagnostic system.

(g) "Dedicated data transmission line" means a unique communication line identifiable by a transmitted digital identification number which allows the Vehicle Information Database or (VID) to identify the Georgia Analyzer System (GAS) unit communicating with the VID.

(h) "Department" means the Department of Natural Resources.

(i) "Diagnostic Trouble Codes (DTC)" means that for vehicles equipped with on-board diagnostic (OBD) computer systems, a five digit code that is associated with a specific test of the OBD system.

(j) "Director" means the Director of the Environmental Protection Division of the Department of Natural Resources.

(k) "E-Certs" means blank Electronic Certificates of Emission Inspection that are pre-purchased by official emissions inspection stations for the purpose of performing emission inspections.

(l) "Emission Inspection" means all tests and inspections required by the Act and this Chapter, including an exhaust emission test, a fuel cap test, a tampering inspection, and an on-board diagnostic system check where applicable.

(m) "Emissions Inspector Certification Training Program Manual", means the manual supplied to inspectors during their initial and re-certification classes; the most current version of this manual is available on the Georgia Clean Air Force website at www.cleanairforce.com.

(n) "Emission Recall Compliance Check" means determining whether a recall campaign has been issued by the original equipment manufacturer of a vehicle.

(o) "E-VIN" means the Electronic Vehicle Identification Number embedded in the OBD computer system on 1996 and later model year vehicles.

(p) "EPD" means the Environmental Protection Division of the Georgia Department of Natural Resources.

(q) "Exhaust Emission Test" means the determination of the amount of specified gases in a vehicle's exhaust by use of the 2-speed idle (TSI) test.

(r) "Fleet Vehicle" means a motor vehicle owned or leased by a person engaged in a commercial activity, utility service, or government service; or a motor vehicle offered for sale, rent, or lease at a business which is licensed to sell, rent, or lease motor vehicles.

(s) "Fuel Cap Test" means the determination of the ability of the fuel cap(s) to retain pressure.

(t) "Gas Calibration" means the calibration of the Georgia Analyzer System (GAS) by the use of a manufactured calibration gas.

(u) "Georgia Analyzer System" (GAS) means the test systems approved by EPD for use in performing emission inspections in Georgia in accordance with the Act and this Chapter.

(v) "Georgia Analyzer System Hardware and Software Specifications" (GAS Specs) means the Georgia Analyzer System Hardware and Software Specifications, Phase V, August 31, 2016, which contains the hardware and software requirements for a GAS.

(w) "Georgia's Clean Air Force" (GCAF) means the partnership between EPD and the Management Contractor to implement Georgia's Enhanced Motor Vehicle Emission Inspection and Maintenance Program (I/M Program).

(x) "Grandfathered Vehicle" means a vehicle manufactured outside of the United States and certified to meet foreign emission standards, but which has subsequently been legally imported into the United States and is subject to the provisions of the Act and this Chapter. Such vehicles are approved by EPD to comply with alternative tail pipe emission standards for that Model Year vehicle.

(y) "Gray Market Vehicle" means vehicles which are manufactured for use outside of, and imported into, the United States.

(z) "GVWR" means the gross vehicle weight rating, i.e., the weight of the vehicle and contents when loaded to its maximum capacity, as established by the vehicle manufacturer.

(aa) "Hot Rod" means a vehicle in which the original engine has been replaced with an engine from another manufacturer, or with a different type of engine from the same manufacturer which was never installed in that model vehicle. For the purposes of this definition, a different type of engine will include engines with a different number of cylinders from any engine which was originally installed in that make of vehicle. It will not include engines of the same family, e.g., Chevrolet V8s of 283, 305, 327, 350 and 400 cubic inch displacement, nor will it include engines different from the original, but which were also installed in that make of vehicle, e.g., gasoline for diesel engine swaps in General Motors or Volkswagen vehicles, or V8 for V6 swaps where both engines were installed in that model vehicle by the manufacturer for retail sale.

(bb) "Idle RPM" means for vehicles equipped with a manual transmission, the manufacturer's recommended engine speed with the transmission in neutral or with the clutch disengaged. For vehicles equipped with an automatic transmission, idle revolutions per minute (RPM) means the manufacturer's recommended engine speed with the transmission in neutral or park.

(cc) "Inspection Term" means the period of time a certificate of emission inspection shall be considered valid. The specific period of an inspection term is established in this Chapter.

(dd) "Inspector" means a person certified by the Director to perform emission inspections in accordance with the requirements of the Act and this Chapter.

(ee) "Kit Car" means a motor vehicle which does not utilize a chassis from a vehicle certified by the manufacturer to meet emission control standards or for which the original manufacturer's identification has been eliminated due to the replacement of the vehicle's body with one of a different make and/or style.

(ff) "Light Duty Truck" means any motor vehicle with a GVWR of 8500 pounds or less which has a vehicle curb weight of 6,000 pounds or less and which has a basic vehicle frontal area of 45 square feet or less, which is:

1. Designed primarily for purposes of transportation of property or is a derivation of such a vehicle, or

2. Designed primarily for transportation of persons and has a capacity of more than 12 persons, or

3. Available with special features enabling off-street or off-highway operation and use.

(gg) "Light Duty Vehicle" means a passenger car or passenger car derivative, capable of seating 12 passengers or less with a GVWR of 8500 pounds or less.

(hh) "Management Contractor" means the person, corporation or entity under contract to design and operate the data management system and to perform other functions for the I/M Program.

(ii) "Malfunction Indicator Light (MIL)" means a light on the dashboard of OBD equipped vehicles that notifies the driver that an emission related fault has been detected and the vehicle should be repaired as soon as possible.

(jj) "Non-conforming Vehicle" means vehicles that were not built to standards set by the EPA.

(kk) "On-Board Diagnostic (OBD) System" means a computer system installed on 1996 or later model year vehicles as required by Section 202(m) of the Clean Air Act (42 U.S.C. 7521) which is designed to identify engine or primary emission control component problems which cause excess emissions.

(ll) "On-Board Diagnostic (OBD) System Check" means the determination of readiness codes and diagnostic trouble codes stored within the memory of the on-board diagnostic system.

(mm) "Primary Emission Control Component" means the catalytic converter, air injection system, exhaust gas recirculation system or other major component, as determined by the Director, which is installed on a vehicle primarily for the purpose of emission control.

(nn) "Public Vehicle" means a motor vehicle that is not a fleet vehicle.

(oo) "Recognized Repair Technician" means any person professionally engaged in vehicle repair, employed by an ongoing business whose purpose is vehicle repair or possessing a nationally recognized certification for vehicle emission related diagnosis and repair.

(pp) "Responsible Motor Vehicle" means any motor vehicle defined as a light duty vehicle or a light duty truck, excluding any motor vehicle exempted from the Act and this Chapter such as vehicles not in a Covered County as defined in 391-3-20-.02.

(qq) "Revolutions per Minute" (RPM) means the number of times the crankshaft of an engine makes a complete 360 degree turn in one minute (60 seconds).

(rr) "State-Certified Emissions Inspection Station" means a facility that has met all the qualifications of this Act and this Chapter and is certified by the Director.

(ss) "Station Owner" means the individual, partnership, firm, corporation, association, municipality, governmental agency, lessee, or other entity having ownership of or control of the daily operation of an inspection station.

(tt) "Tampering Inspection" means the determination of whether the catalytic converter(s) as installed by the original manufacturer has been removed from the vehicle or modified.

(uu) "Time Extension" means any time extension as defined in section "Extensions and Reciprocal Inspections." of these rules and issued by EPD, the Management Contractor or an authorized agent of EPD to the owner of a responsible motor vehicle certifying that such owner and vehicle have met the requirements in the Act and this Chapter for extending the time to comply with the emission inspection requirement.

(vv) "Vehicle" means a motor vehicle.

(ww) "Vehicle Information Database" (VID) means the data collection and management system for Georgia's Enhanced Motor Vehicle Emission Inspection and Maintenance Program (I/M Program) that contains current and historical program data. The VID is comprised of data collection tables, including the table of inspection records. The term "VID" is used to refer to the VID as a whole or to any part, e.g., Enforcement database, Audit database, Emission Inspections database, and Waiver database.

(xx) "Waiver" means the official form issued by EPD, the Management Contractor or an authorized agent of EPD to the owner of a responsible motor vehicle certifying that such owner and vehicle have met the requirements in the Act and this Chapter for obtaining a waiver of the emission inspection requirement.

(yy) "2-speed idle (TSI) test" means an exhaust emission test where the vehicle under test is run at an idle revolutions per minute (RPM) speed and a higher RPM speed as defined in the GAS Specs.

Cite as Ga. Comp. R. & Regs. R. 391-3-20-.01

AUTHORITY: O.C.G.A. § 12-9-40, et seq., as amended.

HISTORY: Original Rule entitled "Definitions" adopted. F. Nov. 1, 1993; eff. Nov. 21, 1993.

Amended: F. May 24, 1994; eff. June 13, 1994.

Amended: F. Aug. 31, 1994; eff. Sept. 20, 1994.

Repealed: New Rule of same title adopted. F. Aug. 28, 1995; eff. Sept. 17, 1995.

Amended: ER. 391-3-20-0.33-.01 adopted. F. June 4, 1996; eff. May 29, 1996, the date of adoption.

Amended: Permanent Rule adopted. F. Aug. 26, 1996; eff. Sept. 15, 1996.

Amended: F. June 3, 1997; eff. June 23, 1997.

Amended: ER. 391-3-20-0.38-.01 adopted. F. Dec. 5, 1997; eff. Dec. 3, 1997, the date of adoption.

Amended: F. Dec. 5, 1997; eff. Dec. 25, 1997.

Amended: F. Mar. 27, 1998; eff. Apr. 16, 1998.

Amended: F. Oct. 23, 1998; eff. Nov. 12, 1998.

Amended: F. June 18, 1999; eff. July 8, 1999.

Amended: F. Sept. 17, 1999; eff. Oct. 7, 1999.

Amended: F. Dec. 8, 2000; eff. Dec. 28, 2000.

Amended: F. June 28, 2001; eff. July 18, 2001.

Amended: F. Dec. 6, 2001; eff. Dec. 26, 2001.

Amended: F. Dec. 5, 2003; eff. Dec. 25, 2003.

Amended: F. Dec. 20, 2004; eff. Jan. 9, 2005.

Amended: F. Dec. 21, 2006; eff. Jan. 10, 2007.

Amended: F. May 30, 2014; eff. Jun. 19, 2014.

Amended: F. Nov. 2, 2016; eff. Nov. 22, 2016.

Amended: F. Mar. 8, 2018; eff. Mar. 28, 2018.

Amended: F. Jan. 28, 2019; eff. Feb. 17, 2019.

Amended: F. Mar. 24, 2021; eff. Apr. 13, 2021.

391-3-20-.04 Emission Inspection Procedures

(1) Prior to performing an emission inspection, the inspector shall determine whether the vehicle has leaking fluids, tires with cords exposed, is overheating, or is otherwise unsafe to inspect. The inspector shall not perform an emission inspection on any vehicle which is unsafe to inspect.

(2) Inspectors shall perform a complete emission inspection on any responsible motor vehicle presented for an initial inspection, in accordance with the requirements of the Act and this Chapter and the procedures as prompted by the GAS, including the following:

(a) For OBD equipped vehicles.

1. A tampering inspection.

2. An OBD system check. On occasion, when activated by EPD, the GAS will prompt the inspector at the conclusion of the OBD system check to perform the 2-speed idle test to collect exhaust emission data. The exhaust emission data will not be used to determine Pass/Fail results of the vehicle.

3. A fuel cap test.

(b) For non-OBD equipped vehicles.

1. A tampering inspection.

2. An exhaust emission test. The inspector may perform a 2-speed idle test on vehicles as prompted by the GAS.

3. A fuel cap test.

(c) For grandfathered vehicles.

1. A tampering inspection. The inspector shall perform a tampering inspection only for those vehicles given grandfathered status by EPD that were originally equipped with a catalytic converter by the vehicle manufacturer or that have been subsequently equipped with a catalytic converter.

2. An exhaust emission test. The inspector shall perform a 2-speed idle test on all vehicles that have been given grandfathered status by EPD.

3. A fuel cap test.

(3) The station owner and inspector shall take all reasonable precautions to avoid damage to vehicles during the emission inspection.

(4) EPD may require alternate procedures for certain types or classes of vehicles when it determines that such alternate procedures are necessary to safely and effectively inspect such vehicles.

(5) Emission inspections may be performed on any vehicle when done "at motorist's request," for reasons such as performing a reciprocal inspection for a motorist to meet the emission inspection requirements in his or her state of residence, as allowed by the Georgia Analyzer System software. The inspection procedure to be performed by certified inspectors shall be as prompted by the GAS.

(6) Inspectors shall perform a reinspection of the portions previously failed during an emission inspection on any vehicle presented for an after repairs inspection, in accordance with the requirements of the Act and this Chapter and the procedures as prompted by the GAS.

Cite as Ga. Comp. R. & Regs. R. 391-3-20-.04

AUTHORITY: O.C.G.A. § 12-9-40**, et seq., as amended.**

HISTORY: Original Rule entitled "Emission Inspection Procedures" adopted. F. Nov. 1, 1993; eff. Nov. 21, 1993.

Amended: F. May 24, 1994; eff. June 13, 1994.

Amended: F. Aug. 31, 1994; eff. Sept. 20, 1994.

Repealed: New Rule of same title adopted. F. Aug. 28, 1995; eff. Sept. 17, 1995.

Amended: ER. 391-3-20-0.33-.04 adopted. F. June 4, 1996; eff. May 29, 1996, the date of adoption.

Amended: Permanent Rule adopted. F. Aug. 26, 1996; eff. Sept. 15, 1996.

Amended: F. June 3, 1997; eff. June 23, 1997.

Amended: ER. 391-3-20-0.36-.04 adopted. F. Oct. 17, 1997; eff. Oct. 15, 1997, the date of adoption.

Amended: ER. 391-3-20-0.38-.04 adopted. F. Dec. 5, 1997; eff. Dec. 3, 1997, the date of adoption.

Amended: F. Mar. 27, 1998; eff. Apr. 16, 1998.

Amended: F. Aug. 27, 1998; eff. Sept. 16, 1998.

Amended: F. Sept. 17, 1999; eff. Oct. 7, 1999.

Amended: F. Dec. 8, 2000; eff. Dec. 28, 2000.

Amended: F. June 28, 2001; eff. July 18, 2001.

Amended: F. Dec. 6, 2001; eff. Dec. 26, 2001.

Amended: F. Dec. 10, 2002; eff. Dec. 30, 2002.

Amended: F. Dec. 20, 2004; eff. Jan. 9, 2005.

Amended: F. May 30, 2014; eff. Jun. 19, 2014.

Amended: F. Nov. 2, 2016; eff. Nov. 22, 2016.

Amended: F. Mar. 8, 2018; eff. Mar. 28, 2018.

Amended: F. Mar. 24, 2021; eff. Apr. 13, 2021.

391-3-20-.05 Emission Standards

(1) An inspector shall not perform a tampering inspection, an exhaust emission test, a fuel cap test, or an OBD system check on a vehicle which:

(a) has a missing exhaust system, or

(b) is unsafe to inspect.

(2) The inspector shall not issue a Certificate of Emission Inspection indicating an overall passing result for the emission inspection unless the inspector has inspected the vehicle in accordance with the requirements of the Act and this Chapter and the vehicle has passed the tampering inspection, the exhaust emission test, the fuel cap test, and the OBD system check where applicable.

(a) The vehicle shall pass the tampering inspection if:

1. the catalytic converter(s) has not been removed or disconnected;

2. no catalytic converter was installed by the original equipment manufacturer as determined from the vehicle emission control label;

3. in the case of a vehicle which has been converted from a single exhaust system to a dual exhaust system and a catalytic converter(s) was part of the original single exhaust system configuration, a catalytic converter has been installed in each pipe of the dual exhaust system;

4. in the case of a hot rod for which either the original vehicle or the replacement engine was equipped with a catalytic converter(s), a catalytic converter(s) has been installed; or

5. a catalytic converter(s) installed by the original equipment manufacturer has been removed and replaced with another catalytic converter(s).

(b) The vehicle shall pass the exhaust emission test if:

1. in the case of a vehicle subject to a 2-speed idle test any simultaneous pair of values for hydrocarbons and carbon monoxide, in each mode, do not exceed the exhaust levels established in the GAS, and the combined value for carbon monoxide and carbon dioxide is equal to or more than the minimum combined value established in the GAS; or

2. in the case of a gray market vehicle, kit car, hot rod, or non-conforming vehicle that has been given grandfathered status by EPD under this Chapter, any simultaneous pair of values for hydrocarbon and carbon monoxide, in each mode of the 2-speed idle test, do not exceed the exhaust levels established in the GAS for 1975 model year vehicles, or for the model year of the vehicle, and the combined value for carbon monoxide and carbon dioxide is equal to or more than the minimum combined value established in the GAS.

(c) The vehicle shall pass the fuel cap test if:

1. the vehicle's primary fuel cap and, when equipped, one secondary fuel cap, holds pressure in accordance with the standard established by the GAS; and

2. where a vehicle has two or more fuel caps, each fuel cap is present.

(d) The vehicles shall pass the OBD system check if:

1. the Georgia Analyzer System (GAS) is able to communicate with the vehicle's OBD system;

2. the MIL illuminates with the ignition key in the "on" position and the engine not running, which is known as Key On Engine Off (KOEO);

3. the OBD system does not command the MIL to illuminate with the ignition key in the on position with the engine running;

4. all nonexempt OBD system monitors, as specified in the GAS, are set to "ready";

5. the OBD system does not contain any fault codes which command the MIL to illuminate, as specified by the vehicle manufacturer, indicating problems with the emissions control parameters monitored by the OBD system; and

6. the MIL does not illuminate with the ignition key in the "on" position and the engine running, which is known as Key On Engine Running (KOER).

Cite as Ga. Comp. R. & Regs. R. 391-3-20-.05

AUTHORITY: O.C.G.A. § 12-9-40, et seq., as amended.

HISTORY: Original Rule entitled "Emission Standards" adopted. F. Nov. 1, 1993; eff. Nov. 21, 1993.

Amended: F. Aug. 31, 1994; eff. Sept. 20, 1994.

Repealed: New Rule of same title adopted. F. Aug. 28, 1995; eff. Sept. 17, 1995.

Amended: ER. 391-3-20-0.33-.05 adopted. F. June 4, 1996; eff. May 29, 1996, the date of adoption.

Amended: Permanent Rule adopted. F. Aug. 26, 1996; eff. Sept. 15, 1996.

Amended: F. June 3, 1997; eff. June 23, 1997.

Amended: ER. 391-3-20-0.38-.05 adopted. F. Dec. 5, 1997; eff. Dec. 3, 1997, the date of adoption.

Amended: F. Mar. 27, 1998; eff. Apr. 16, 1998.

Amended: F. June 18, 1999; eff. July 8, 1999.

Amended: F. Sept. 17, 1999; eff. Oct. 7, 1999.

Amended: F. Dec. 8, 2000; eff. Dec. 28, 2000.

Amended: F. June 28, 2001; eff. July 18, 2001.

Amended: F. Dec. 6, 2001; eff. Dec. 26, 2001.

Amended: F. Dec. 20, 2004; eff. Jan. 9, 2005.

Amended: F. May 30, 2014; eff. Jun. 19, 2014.

Amended: F. Nov. 2, 2016; eff. Nov. 22, 2016.

Amended: F. Mar. 8, 2018; eff. Mar. 28, 2018.

Amended: F. Mar. 24, 2021; eff. Apr. 13, 2021.

391-3-20-.07 Inspection Equipment System Specifications

(1) Georgia Analyzer Systems (GAS) Approval.

(a) EPD shall approve a test system which meets all specifications established in the Georgia Analyzer System Hardware and Software Specifications, Phase V, August 31, 2016 (GAS Specs) as a Georgia Analyzer System (GAS). Station owners may select from any GAS approved by EPD for their class of station.

(b) Regular inspection station owners shall acquire an EPD-approved GAS which meets the OBD and TSI requirements of this Chapter.

(c) Fleet inspection station owners that inspect vehicles shall acquire an EPD-approved GAS which meets the OBD and TSI requirements of this Chapter.

(2) EPD-approved GAS shall contain features to prevent tampering by unauthorized personnel. No unauthorized person shall override or circumvent or attempt to override or circumvent said anti-tampering features.

(3) No person shall modify or install parts in a GAS unless such modification or installation of parts has been approved in writing by EPD.

(4) Station owners shall acquire all available fuel cap adapters and the most recent Fuel Cap Testing Application Chart, as published by the fuel cap manufacturers: Stant and/or Hickok Waekon, for the adapters being used for those model year vehicles that are subject to this Chapter and are authorized to be inspected at that station.

Cite as Ga. Comp. R. & Regs. R. 391-3-20-.07

AUTHORITY: O.C.G.A. § 12-9-40, et seq., as amended.

HISTORY: Original Rule entitled "Inspection Equipment System Specifications" adopted. F. Nov. 1, 1993; eff. Nov. 21, 1993.

Amended: F. Aug. 31, 1994; eff. Sept. 20, 1994.

Repealed: New Rule of same title adopted. F. Aug. 28, 1995; eff. Sept. 17, 1995.

Amended: ER. 391-3-20-0.33-.07 adopted. F. June 4, 1996; eff. May 29, 1996, the date of adoption.

Amended: Permanent Rule adopted. F. Aug. 26, 1996; eff. Sept. 15, 1996.

Amended: F. June 3, 1997; eff. June 23, 1997.

Amended: F. Mar. 27, 1998; eff. Apr. 16, 1998.

Amended: F. Sept. 17, 1999; eff. Oct. 7, 1999.

Amended: F. Dec. 8, 2000; eff. Dec. 28, 2000.

Amended: F. June 28, 2001; eff. July 18, 2001.

Amended: F. Dec. 6, 2001; eff. Dec. 26, 2001.

Amended: F. Dec. 20, 2004; eff. Jan. 9, 2005.

Amended: F. May 30, 2014; eff. Jun. 19, 2014.

Amended: F. Mar. 8, 2018; eff. Mar. 28, 2018.

Amended: F. Mar. 24, 2021; eff. Apr. 13, 2021.

391-3-20-.09 Inspection Station Requirements

(1) Classes of stations - There shall be two classes of inspection stations: regular inspection stations and fleet inspection stations. Regular inspection stations shall be public inspection stations and may inspect no more than ten (10) vehicles per year which are owned incidental to the operation of the business.

(a) Regular Inspection Stations.

1. A regular inspection station is authorized to inspect any vehicle subject to the I/M Program.

(b) Fleet Inspection Stations.

1. Vehicle owners who operate a fleet vehicle may apply for a Certificate of Authorization under this Chapter to inspect their own fleet vehicles, but must meet certain additional requirements beyond those established for public regular inspection stations. Fleet inspection stations are only allowed to inspect fleet vehicles that they own or operate. No inspection of public vehicles is allowed by a fleet inspection station.

(2) General Requirements for Inspection Stations.

(a) Persons wishing to obtain or renew a Certificate of Authorization to operate one or more inspection stations shall apply to EPD in a format established by EPD. One application must be submitted for each inspection station. Each application shall include all information required by the Director to determine that the proposed inspection station will meet the requirements of the Act and this Chapter and shall identify all persons having any ownership, financial and/or operational interest in the station. Additional information that may be requested includes, but is not limited to:

1. Explicit permission of all persons having any financial or operational interest in the station, as named in the application, authorizing the director to conduct a background check, including criminal history, on the named individuals;

2. Facility purchase or lease agreement(s);

3. Georgia Analyzer System (GAS) purchase or lease agreement(s);

4. Proof of a filed bond or a copy of accepted certificate of liability insurance;

5. Copy of approved business license or application for same showing signature(s) of the business owner(s); and

6. Other documents as deemed necessary by EPD to determine all persons having any ownership, financial and/or operational interest in the inspection station.

(b) A station owner shall obtain all permits and licenses necessary for the establishment of each inspection station. The station shall conform to all applicable federal, state and local code requirements including, but not limited to, planning and building codes, carbon monoxide levels, ventilation, safety, and fire regulations. All permits, licenses, leases, and/or other requirements for the station shall be maintained for the duration of the Certificate of Authorization. An update shall be filed with the Management Contractor, in a format approved by EPD, no later than the next business day for any change in the information in or submitted with the application and/or any change in the permits, licenses and/or other requirements for the station.

(c) Mobile Georgia Analyzer Systems (GAS).

1. EPD may approve a station owner to operate a mobile GAS only at a fleet or car dealer location for the purpose of performing emission inspections only on fleet vehicles subject to the I/M Program that are owned or operated by that fleet or car dealer. A public inspection station owner with an approved mobile test system shall make all invoices submitted to fleet owners and/or car dealers for emission inspections using a mobile test system available to EPD or the Management Contractor.

2. A station owner that has been approved to operate a mobile GAS at a fleet or car dealer location shall comply with all requirements for mobile inspecting as established in these rules. A station owner that has been approved to operate a mobile GAS shall provide the Management Contractor and EPD, if directed to do so by EPD, with advance notice of scheduled emission inspections of fleet or car dealer locations by 2 PM of the previous business day and shall update such notice as the schedule is changed. The station owner may delete locations from the schedule of fleet or car dealer locations after 2 PM of the previous business day, but may not add fleet or car dealer locations to the schedule. EPD may approve an alternate procedure that provides equivalent quality assurance in lieu of a submitted schedule.

3. A public inspection station owner that has received an approval to operate a mobile GAS shall not perform emission inspections on public vehicles at a location other than at the public inspection station location identified on the Certificate of Authorization.

(d) Public inspection station owners shall provide an area adequate to allow four (4) vehicles per inspection lane to wait for an emissions inspection.

(e) A public inspection station owner shall display a sign approved by EPD that indicates that the facility is a State-Certified Emissions Inspection Station and that shows the fee charged for performing the emission inspection. The station owner shall erect the sign in a location visible to the motoring public. All sign locations must meet State and local code requirements. Signs that are illegible, damaged or contain unapproved modifications shall be replaced with an approved sign.

(f) Lanes at each inspection station must be of adequate length, width, and height to accommodate all normal-sized vehicles which are presented for inspection.

(g) A station owner shall provide adequate protection for the GAS to allow it to operate within specifications in all weather conditions. Any component of the GAS, which could affect the emission inspection results, shall not be subjected to temperatures outside the manufacturer's specifications. The air intakes on the GAS and the vehicle being inspected shall at all times during the inspection be exposed to the same ambient temperature, pressure and humidity conditions. The station owner shall maintain all GAS in fully operational condition.

(h) A public inspection station owner shall provide to its customers:

1. a public waiting area, which will allow the motorist to observe the emissions inspection of his or her vehicle;

2. a response to inquiries and complaints in person and over the telephone during business hours;

3. EPD public information materials:

(i) The current, quarterly Repair Watch Public Report provided by EPD or the Management Contractor on repair facilities that have a documented history of emission related repairs on vehicles which have failed the emission inspection;

(ii) The program Motorist Rights Poster provided at the time of station certification; and

(iii) The program Q&A brochure.

(iv) The station owner shall maintain such item(s) in legible condition and either posted or made available for motorists' uninhibited viewing.

(i) A station owner shall:

1. be responsible for all emission inspections conducted at the inspection station(s);

2. be responsible for providing adequate oversight to ensure the station and station personnel comply with the requirements of the Act and this Chapter;

3. obtain and maintain in working order a secure static internet connection for each GAS at the station to tie into the VID;

4. transmit all vehicle inspection data and quality assurance data that is collected to the VID;

5. ensure that the GAS is connected to the secure static internet connection at all times, except in the case of a mobile or mobile capable GAS operating offsite at a fleet or car dealer location which shall be connected to the data transmission line within 72 hours of any emission inspection;

(i) Mobile capable GAS shall have the GAS connected at all times to a secure static internet connection while being used as a non-mobile GAS.

6. collect, store and submit to the Management Contractor all Emission Repair Forms for each reinspection performed at the inspection station;

7. obtain and maintain in legible condition any published OBD DLC Location Chart available or copy which is available on the GCAF website- www.cleanairforce.com, at each station capable of performing OBD system checks;

8. obtain and maintain at all times in legible condition a current copy of the Emissions Inspector Certification Training Program Manual, Version 1.4 or later or copy which is available on the GCAF website- www.cleanairforce.com, at each station; and

(j) The station owner shall pay a per-paid-inspection program administration fee. This fee will be collected through the sale of E-Certs or other method determined by the Director. This fee will cover the cost to administer the program, including:

1. the services of the Management Contractor,

2. the cost of EPD administration,

3. the cost to affected county tax offices of monitoring vehicle registrations, and

4. any other costs allowed by the Act.

(k) Liability Insurance.

1. Inspection station owners, except fleet inspection station owners, conducting inspections on vehicles as defined in this Chapter shall provide proof of $100,000 bond or liability insurance for the period of the Certificate of Authorization.

2. Inspection station owners shall notify the Management Contractor no later than the next business day upon termination of or any change in insurance coverage.

(l) Hours of Operation.

1. Public inspection station owners shall post the inspection station hours of operation, including hours regularly closed for meals if applicable, on the inspection station's State-Certified Emissions Inspection Station sign. Inspection station owners shall provide emissions inspections at all times during the posted hours. Public inspection station owners may provide inspections by appointment only but shall notify the Management Contractor and indicate such on the station's State-Certified Emissions Inspection Station sign.

2. The station owner shall post a "Closed" sign over the station's State-Certified Emissions Inspection Station sign when the inspection station is closed and unstaffed during posted hours.

(m) A public inspection station owner shall display the Certificate of Authorization issued to the inspection station pursuant to this Chapter at said inspection station in a convenient location visible to the public.

(n) Whenever an inspector ceases employment with an inspection station, either through resignation, termination, or by other means, the station owner shall notify the Management Contractor, in a format approved by EPD, within three (3) business days of the inspector ceasing employment.

(o) No station owner, facility owner, station personnel, or facility personnel shall interfere with EPD or the Management Contractor when they are conducting an audit of the inspection station or GAS(s), or when they are conducting an investigation of the emission inspection activities at a station or at any facility claiming or appearing to be an emission inspection station.

(p) During an audit of the inspection station or GAS(s) by EPD or the Management Contractor, or during an investigation of the emission inspection activities at a station, the station owner shall:

1. provide prompt access to the premises, at reasonable times, where inspections are performed and to the GAS(s);

2. provide prompt access to all station related documents and materials necessary to complete the audit or investigation; and

3. provide prompt assistance in operating and calibrating the GAS(s) as necessary to facilitate the audit or investigation, or sign a release of liability that allows EPD or the Management Contractor to operate and calibrate the GAS(s) during the audit or investigation.

(q) The station owner shall maintain a current mailing address, telephone number, email address and other contact information on file with EPD so that EPD may communicate with the owner on all matters regarding the station, including compliance and enforcement issues. The station owner may designate, in the station application or a written update thereto, another person to receive such communication from EPD. In that case, the station owner shall also provide that person's contact information, including email address, will be presumed to have received all communications from EPD through the person he or she has designated, and remains responsible for compliance with the requirements of the Act and this Chapter.

(3) Additional Requirements for Fleet Inspection Stations.

(a) The administrative fee charged to fleet inspection stations shall be at least as much as the fee charged to public inspection stations. This fee may be increased to cover any additional cost of increased monitoring requirements for fleet inspection stations.

(4) Quality Assurance for Fleet Vehicles.

(a) EPD or the Management Contractor may require fleet inspection stations and mobile inspection stations while on-site to re-inspect randomly selected fleet or car dealer vehicles to verify that emissions inspections are being performed properly.

(b) EPD may require fleet inspection stations and mobile inspection stations to install a video camera surveillance system on the GAS to record all emissions inspections.

Cite as Ga. Comp. R. & Regs. R. 391-3-20-.09

AUTHORITY: O.C.G.A. § 12-9-40, et seq., as amended.

HISTORY: Original Rule entitled "Inspection Stations" adopted. F. Nov. 1, 1993; eff. Nov. 21, 1993.

Amended: F. May 24, 1994; eff. June 13, 1994.

Amended: Rule re-titled "IM240 Program Inspection Station Requirements." F. Aug. 31, 1994; eff. Sept. 20, 1994.

Repealed: New Rule entitled "Inspection Stations Requirements" adopted. F. Aug. 28, 1995; eff. Sept. 17, 1995.

Amended: ER. 391-3-20-0.33-.09 adopted. F. June 4, 1996; eff. May 29, 1996, the date of adoption.

Amended: Permanent Rule adopted. F. Aug. 26, 1996; eff. Sept. 15, 1996.

Amended: F. June 3, 1997; eff. June 23, 1997.

Amended: ER. 391-3-20-0.36-.09 adopted. F. Oct. 17, 1997; eff. Oct. 15, 1997, the date of adoption.

Amended: ER. 391-3-20-0.38-.09 adopted. F. Dec. 5, 1997; eff. Dec. 3, 1997, the date of adoption.

Amended: F. Mar. 27, 1998; eff. Apr. 16, 1998.

Amended: F. Aug. 27, 1998; eff. Sept. 16, 1998.

Amended: F. Sept. 17, 1999; eff. Oct. 7, 1999.

Amended: F. Dec. 2, 1999; eff. Dec. 22, 1999.

Amended: F. Dec. 8, 2000; eff. Dec. 28, 2000.

Amended: F. June 28, 2001; eff. July 18, 2001.

Amended: F. Dec. 6, 2001; eff. Dec. 26, 2001.

Amended: F. Dec. 20, 2004; eff. Jan. 9, 2005.

Amended: F. May 30, 2014; eff. Jun. 19, 2014.

Amended: F. Nov. 2, 2016; eff. Nov. 22, 2016.

Amended: F. Mar. 8, 2018; eff. Mar. 28, 2018.

Amended: F. Jan. 28, 2019; eff. Feb. 17, 2019.

Amended: F. Mar. 24, 2021; eff. Apr. 13, 2021.

391-3-20-.11 Inspector Qualifications and Certification

(1) No person shall perform an emission inspection, or any part of an emission inspection, or issue a Certificate of Emission Inspection, unless he or she:

(a) has submitted an Inspector Certification Application to EPD in a format established by EPD. The application shall include all information required by the Director to determine that the applicant meets the requirements of the Act and this Chapter. An update shall be filed with the Management Contractor, in a format approved by EPD, no later than the next business day for any change in the information in or submitted with the application.

(b) has obtained the age of 18 prior to attending the inspector training class;

(c) has completed the appropriate EPD-approved training program for the type of inspection he or she will be performing;

(d) has obtained training on the proper operation of inspection equipment from the manufacturer of the GAS that will be used to perform the emission inspections;

(e) has passed a written and practical test of proficiency, and,

(f) holds a valid Certificate as a certified emission inspector issued by the Director.

(2) The EPD-approved training program will include information on:

(a) air pollution, its causes and effects;

(b) the purpose and functions of the I/M Program;

(c) inspection regulations and procedures, including technical details and the rationale for their design;

(d) emission control devices, their functions, configuration, identification and inspection;

(e) Georgia Analyzer System (GAS) operation, calibration and maintenance;

(f) quality control procedures and their purpose;

(g) public relations; and

(h) safety and health issues related to inspections.

(3) Inspectors must demonstrate knowledge and proficiency in proper inspection procedures. Inspectors must pass (with 80% correct answers) a written test on all aspects of the training. Inspectors must also pass a practical test by demonstrating that they have knowledge about conducting all parts of the inspection correctly.

(4) The Director shall issue a Certificate and one Inspector picture ID card to inspectors who satisfactorily complete the EPD-approved training program and pass the written and hands-on tests. Certificates may be suspended or revoked at any time, after notice and offer of a hearing, for failure to conduct inspections properly or to otherwise comply with the Act or this Chapter.

(5) Unless suspended, revoked or voluntarily surrendered, a Certificate issued by the Director is valid for two years from the date of issuance.

(a) A complete application for renewal of an inspector's Certificate must be submitted at least 30 calendar days prior to the expiration of the existing Certificate.

(b) The Director shall renew the Certificate upon timely receipt of a renewal application, determination that there is no cause to deny the renewal in accordance with the Act or Chapter 391-3-20 of the Rules, the inspector successfully completing an EPD approved retraining program, and the inspector passing the written test.

(6) No inspector shall perform an emissions inspection unless he or she is wearing his or her EPD-issued Inspector picture ID card in a clearly visible location on his or her front upper body area. Replacement of a lost, missing, damaged or illegible ID card is the responsibility of the inspector at a cost of twenty-five dollars ($25.00) paid to the Management Contractor.

(7) No inspector shall hold, or attempt to fraudulently obtain two (2) or more valid Certificates.

(8) Whenever an inspector, after applying for and receiving a Certificate, moves from the address listed in his or her application, the inspector shall notify the Management Contractor of his or her change of address no later than the next business day. The address in the application or as updated by the inspector shall serve as the address for any and all notice required by law.

(9) No person shall use a certified emission inspector's personal access code to perform any part of an emission inspection. No certified emission inspector shall use the personal access code of another certified emission inspector to perform any part of an emission inspection.

(10) An inspector shall not divulge or authorize the use of his or her personal access code by any other person(s). An inspector shall be held responsible for all inspections performed by any person using his or her personal access code.

(11) Before an inspector may perform emissions inspections at a station, the Management Contractor must allow the inspector access to the test system(s) at the station. Inspectors must notify the Management Contractor at least three (3) business days before they begin employment at a given station, and no later than the next business day when they cease employment at a station.

(12) The Director may deny issuance or renewal of a Certificate for cause, including, but not limited to, the inspector's compliance history.

Cite as Ga. Comp. R. & Regs. R. 391-3-20-.11

AUTHORITY: O.C.G.A. § 12-9-40, et seq., as amended.

HISTORY: Original Rule entitled "Schedules for Emission Tests" adopted. F. Nov. 1, 1993; eff. Nov. 21, 1993.

Amended: Rule retitled "Inspector Qualifications and Certification." F. Aug. 31, 1994; eff. Sept. 20, 1994.

Repealed: New Rule of same title adopted. F. Aug. 28, 1995; eff. Sept. 17, 1995.

Amended: ER. 391-3-20-0.33-.11 adopted. F. June 4, 1996; eff. May 29, 1996.

Amended: Permanent Rule adopted. F. Aug. 26, 1996; eff. Sept. 15, 1996.

Amended: F. June 3, 1997; eff. June 23, 1997.

Amended: F. Mar. 27, 1998; eff. Apr. 16, 1998.

Amended: F. Sept. 17, 1999; eff. Oct. 7, 1999.

Amended: F. Dec. 2, 1999; eff. Dec. 22, 1999.

Amended: F. Dec. 8, 2000; eff. Dec. 28, 2000.

Amended: F. Dec. 6, 2001; eff. Dec. 26, 2001.

Amended: F. Dec. 20, 2004; eff. Jan. 9, 2005.

Amended: F. May 30, 2014; eff. Jun. 19, 2014.

Amended: F. Mar. 8, 2018; eff. Mar. 28, 2018.

Amended: F. Jan. 28, 2019; eff. Feb. 17, 2019.

Amended: F. Mar. 24, 2021; eff. Apr. 13, 2021.

Department 391. RULES OF GEORGIA DEPARTMENT OF NATURAL RESOURCES

Chapter 391-3. ENVIRONMENTAL PROTECTION

Subject 391-3-33. RULES FOR PUBLIC WATER SYSTEMS TO IMPROVE WATER SUPPLY EFFICIENCY

391-3-33-.05 Water Supply Efficiency Improvement

(1) **Water Loss Control Program.** By July 1, 2016, Public water systems shall develop and conduct a water loss control program to investigate, assess, and implement efforts to improve water supply efficiency. Water loss control programs shall be updated periodically as needed. Water loss control programs may include, but are not limited to, the following:

(a) Leakage Management, including distribution system water leakage detection and repairs;

(b) Finished Water Meter Flow Verification;

(c) Customer Water Meter Testing and Calibration;

(d) Resource Allocation, including planned preventive maintenance; and

(e) Revenue Recovery Activities.

(2) **Individualized Goals.** Each public water system shall establish individual goals to set measures of water supply efficiency and to improve water supply efficiency. These measures may include, but are not limited to:

(a) Infrastructure Leakage Index;

(b) Water Audit Data Validity Score;

(c) Operational Basic Apparent Losses;

(d) Operational Basic Real Losses; and

(e) Economic Level of Leakage.

(3) **Demonstration of Progress.**

(a) Public water systems shall make progress toward improving water supply efficiency. Progress may be demonstrated through process and performance measures:

1. Improvement in data validity score to the extent practicable for a specific utility as a process measure of data reliability;

2. The development and implementation of the water loss control program;

3. Improvement in performance measures once a reliable level of validity score has been achieved:

- Operational Basic Real Losses;

- Operational Basic Apparent Losses; and

4. Economic Level of Leakage has been achieved and maintained.

(b) Demonstration of progress shall be documented by public water systems upon application to the Division for a water withdrawal permit or a Permit to Operate a Public Water System as listed below, and may be evaluated by the Division as part of the review of the following applications:

1. An application to renew a water withdrawal permit under the Georgia Groundwater Use Act of 1972, O.C.G.A. Section 12-5-90 et seq., or the Georgia Water Quality Control Act, O.C.G.A. Section 12-5-20 et seq.;

2. An application to modify an existing water withdrawal permit which includes an increase in the permitted water supply under the Georgia Groundwater Use Act of 1972, O.C.G.A. Section 12-5-90 et seq., or the Georgia Water Quality Control Act, O.C.G.A. Section 12-5-20 et seq.;

3. An application to renew a Permit to Operate a Public Water System for a purchased water system (one that does not otherwise hold a water withdrawal permit from the Division) under the Georgia Safe Drinking Water Act of 1977, O.C.G.A. Section 12-5-170 et seq.; or

4. An application to increase the number of permitted service connections issued to a public water system under the Georgia Safe Drinking Water Act of 1977, O.C.G.A. Section 12-5-170 et seq.

(c) For applications submitted after July 1, 2016 as described under paragraph (3)(b) above, failure to demonstrate progress toward improving water supply efficiency may result in an action by the Director including, but not limited to, the following:

1. A reduction under paragraph (3)(b)1. above in the permitted water quantity for a water withdrawal permit issued to the public water system under the Georgia Groundwater Use Act of 1972, O.C.G.A. Section 12-5-90 et seq., or the Georgia Water Quality Control Act, O.C.G.A. Section 12-5-20 et seq.;

2. A denial under paragraph (3)(b)2. above of an application to modify any water withdrawal permit issued to the public water system under the Georgia Groundwater Use Act of 1972, O.C.G.A. Section 12-5-90 et seq., or the Georgia Water Quality Control Act, O.C.G.A. Section 12-5-20 et seq.;

3. A denial under paragraph (3)(b)3. above of an application to renew a Permit to Operate a Public Water System for a purchased water system under the Georgia Safe Drinking Water Act of 1977, O.C.G.A. Section 12-5-170 et seq.; or

4. A denial under paragraph (3)(b)4. above of an application to increase the number of permitted service connections issued to the public water system under the Georgia Safe Drinking Water Act of 1977, O.C.G.A. Section 12-5-170 et seq.

(4) **Administration and Enforcement.**

The administration and enforcement of this Rule shall be in accordance with the Georgia Water Quality Control Act, the Georgia Groundwater Use Act, the Georgia Safe Drinking Water Act, and the Georgia Administrative Procedure Act.

Cite as Ga. Comp. R. & Regs. R. 391-3-33-.05

AUTHORITY: O.C.G.A. §§ 12-5-4**,** 12-5-4.1**,** 12-5-20 **et seq., 12-5-90 et seq., 12-5-170 et seq.**

HISTORY: Original Rule entitled "Water Supply Efficiency Improvement" adopted. F. July 15, 2015; eff. Aug. 4, 2015.

Amended: F. Mar. 24, 2021; eff. Apr. 13, 2021.

Department 391. RULES OF GEORGIA DEPARTMENT OF NATURAL RESOURCES

Chapter 391-5. HISTORIC PRESERVATION

Subject 391-5-8. [Repealed]

391-5-8-.01 [Repealed]

Cite as Ga. Comp. R. & Regs. R. 391-5-8-.01

AUTHORITY: O.C.G.A. §§ 12-2-1, 12-2-2, 12-2-24, 12-3-50.1, 12-3-50.2, 12-3-55, 12-3-56, 12-3-57, 12-3-58, 12-3-80 ***et seq*., 12-5-323, 28-5-122, 50-13-3, 50-13-4, 50-13-9.**

HISTORY: Original Rule entitled "Definitions" was filed on April 2, 1985; effective April 22, 1985.

Amended: F. Aug. 27, 1998; eff. Sept. 16, 1998.

Repealed: F. Mar. 22, 2021; eff. Apr. 11, 2021.

391-5-8-.02 [Repealed]

Cite as Ga. Comp. R. & Regs. R. 391-5-8-.02

AUTHORITY: O.C.G.A. §§ 12-2-1, 12-2-2, 12-2-24, 12-3-50.1, 12-3-50.2, 12-3-55, 12-3-56, 12-3-57, 12-3-58, 12-3-80 ***et seq*., 12-5-323, 28-5-122, 50-13-3, 50-13-4, 50-13-9.**

HISTORY: Original Rule entitled "Criteria for Designation" was filed on April 2, 1985; effective April 22, 1985.

Repealed: F. Mar. 22, 2021; eff. Apr. 11, 2021.

391-5-8-.03 [Repealed]

Cite as Ga. Comp. R. & Regs. R. 391-5-8-.03

AUTHORITY: O.C.G.A. §§ 12-2-1, 12-2-2, 12-2-24, 12-3-50.1, 12-3-50.2, 12-3-55, 12-3-56, 12-3-57, 12-3-58, 12-3-80 ***et seq*., 12-5-323, 28-5-122, 50-13-3, 50-13-4, 50-13-9**.

HISTORY: Original Rule entitled "Application Procedures" was filed on April 2, 1985; effective April 22, 1985.

Amended: F. Aug. 27, 1998; eff. Sept. 16, 1998.

Repealed: F. Mar. 22, 2021; eff. Apr. 11, 2021.

Department 391. RULES OF GEORGIA DEPARTMENT OF NATURAL RESOURCES

Chapter 391-5. HISTORIC PRESERVATION

Subject 391-5-9. SUBMERGED CULTURAL RESOURCES

391-5-9-.01 Organization

(1) The State Archaeologist is responsible for administering and enforcing all laws, rules, and regulations as provided in, or promulgated pursuant to, O.C.G.A. Sections 12-3-80 through 12-3-83, relating to submerged cultural resources.

(2) For the purposes of providing notice, to request information or forms, and to submit materials, all communications may be directed to: Department of Natural Resources, Attn: State Archaeologist, 2610 GA Hwy 155, SW, Stockbridge, Georgia 30281. Phone: 770-389-7844.

Cite as Ga. Comp. R. & Regs. R. 391-5-9-.01

AUTHORITY: O.C.G.A. § 12-3-80 ***et seq*.**

HISTORY: Original Rule entitled "Organization" adopted. F. Feb. 9, 1987; eff. Mar. 1, 1987.

Amended: F. Aug. 27, 1998; eff. Sept. 16, 1998.

Amended: F. Mar. 22, 2021; eff. Apr. 11, 2021.

391-5-9-.02 Definitions

As used in this Chapter, the term:

(a) "Department" means the Department of Natural Resources, State of Georgia.

(b) "Exploration" means all activities involving the search for and determination of the nature of submerged cultural resources located on, or imbedded in, the bottoms of the Atlantic Ocean within the three-mile territorial limit of the state or within navigable waters of the state.

(c) "Operation" means any project, activity, work, exploration, recovery, or conduct for which a permit is required by O.C.G.A. § 12-3-82.(a) and these rules.

(d) "Person" means any association, individual, partnership, corporation, public or private authority or local unit of government and shall include the State of Georgia and all its departments, authorities, and any other governmental agencies or instrumentalities, and any other legal entity.

(e) "Recovery" means all activities involving the collection, excavation, dislodgement, displacement, disassembly, salvage, or any other removal of submerged cultural resources or associated artifacts from their natural or cultural disposition setting or surroundings.

(f) "State Archaeologist" means that person appointed by the Department to perform those duties set forth in O.C.G.A. § 12-5-53.

(g) "Submerged Cultural Resources" means all prehistoric and historic sites, ruins, artifacts, treasure, treasure-trove, shipwrecks or vessels and their cargo or tackle which have remained on the bottom for more than 50 years, and similar sites and objects found in the Atlantic Ocean within the three-mile territorial limit of the state or within its navigable waters. This term may include, but not be limited to, sites listed in, or eligible for listing, in the National Register of Historic Places (16 U.S.C. 470).

Cite as Ga. Comp. R. & Regs. R. 391-5-9-.02

AUTHORITY: O.C.G.A. § 12-3-80 ***et seq*.**

HISTORY: Original Rule entitled "Definitions" adopted. F. Feb. 9, 1987; eff. Mar. 1, 1987.

Amended: F. Aug. 27, 1998; eff. Sept. 16, 1998.

Amended: F. Mar. 22, 2021; eff. Apr. 11, 2021.

391-5-9-.03 Reporting Requirement

All findings or sightings of submerged cultural resources or suspended submerged cultural resources shall be reported to the State Archaeologist as provided in these rules within two days of such finding, sighting, Saturdays, Sundays, and legal holidays excluded.

Cite as Ga. Comp. R. & Regs. R. 391-5-9-.03

AUTHORITY: O.C.G.A. § 12-3-80 ***et seq*.**

HISTORY: Original Rule entitled "Reporting Requirement" adopted. F. Feb. 9, 1987; eff. Mar. 1, 1987.

Amended: F. Mar. 22, 2021; eff. Apr. 11, 2021.

391-5-9-.05 Permit Procedures

(1) Application for Permit.

(a) All applications for permits must be on forms prescribed by the State Archaeologist and contain the following information:

1. Applicant's name, address, corporate designation and registered agent for service if applicable;

2. A description of the location(s) of the proposed operation, including Universal Transverse Mercator (UTM) Grid System coordinates of latitude and longitude;

3. A U.S. Geological Survey quadrangle (1:24,000 scale) map or a U.S. National Oceanic & Atmospheric Administration "Intra-coastal Waterway (Inside Route) Chart" (1:40,000 scale) depicting the location of the operation;

4. A brief statement of the purposes and objectives of the operation;

5. A clear description of the exact nature and scope of the proposed operation, including, but not limited to, research design, methods, techniques, and equipment to be employed;

6. A description of the methods, materials, and procedures to be used at the conclusion of the operation to stabilize, reclaim, and protect the area of the operation;

7. Name, and address of the professional archaeologist who will supervise or conduct the operation;

8. Evidence of financial responsibility to complete the operation and to stabilize, reclaim, and protect the area of the operation;

9. The name(s) and location(s) of the facility(ies) where all recovered artifacts or other submerged cultural resources will be stored, analyzed, and conserved;

10. The name(s) and location(s) of the facility(ies) where all recovered submerged cultural resources, artifacts, notes, records, data, photographs, maps, plans, drawings, or other materials will be curated after conclusion of all conservation, analysis, or other tasks of the operation;

11. An application fee in the amount of $30.00, by check or money order made payable to the Georgia Department of Natural Resources; and

12. Any and all other relevant data required by the State Archaeologist.

(b) An application is complete when it contains all of the information, documents, forms, fees, and materials required in this Rule.

(2) Consideration of Application.

(a) Once an application is complete, it shall be submitted to the State Archaeologist for review and consideration. Within 10 days of receipt of a completed application, the State Archaeologist, shall determine in their discretion whether an application presents issues of significant public interest such that public notice and a public hearing should be provided. If no public hearing is deemed necessary, then the State Archaeologist shall formulate a recommendation to the Department on each such application within 45 days of receipt. The Department shall grant, deny, or condition the required permit based upon the standards and criteria set forth in O.C.G.A. § 12-3-82., and as more particularly provided by these rules.

(b) If a public hearing is scheduled following 30 days' public notice, then the State Archaeologist, or his designee, shall conduct such hearing in the vicinity of the state nearest the subject cultural resources to receive public comments on the application subject to consideration. Any applicant for a permit or other interested person shall be given a reasonable period of time to state their views regarding a pending application. Following this hearing, the State Archaeologist shall consider the public comments and formulate a written recommendation to the Department, along with a summary of the public comments.

(c) If following the receipt of public comments and the recommendations of the State Archaeologist the Department determines that the public interest will be served in accordance with the standards and criteria established by these rules and O.C.G.A. § 12-3-82., then the Department shall grant, deny, or condition the required permit subject to such terms and conditions as provided by these rules and as are necessary and appropriate for the protection of the public interest and the preservation and protection of submerged cultural resources. All applications shall be acted upon by the Department within 90 days of the filing of a completed application.

(3) Standards and Criteria for Permit Review.

(a) A permit for exploration, survey, etc. of submerged cultural resources shall be issued only when:

1. the proposed operation, including all terms and conditions of any permit, is for the purpose of furthering archaeological or historical knowledge and is in the public interest;

2. the applicant is a scientific or educational institution or an individual with evidence of financial responsibility sufficient to determine that the operation can be completed as proposed;

3. state-owned waterbottoms will be restored or stabilized and submerged cultural resources will be utilized in the state's best interest;

4. the applicant has retained at least one professional archaeologist to supervise the operation with knowledge and experience in the proposed operation;

5. the proposed operation will utilize professionally accepted techniques for identification, exploration, recovery, recording, conservation, preservation, and analysis of submerged cultural resources or other archaeological resources;

6. the methods, techniques, and procedures to be utilized will maximize the retrieval of data associated with the operation;

7. the methods, techniques, and procedures to be utilized at the conclusion of the operation are adequate to protect any residual scientific values associated with any recovered or remaining submerged cultural resource;

8. adequate measures have been taken to secure facilities and plan for the conservation, analysis, and curation of all artifacts, records, and other materials resulting from the proposed operation; and

9. the proposed operation is consistent with all other federal, state and local laws, ordinances, and regulations, specifically including relevant provision of the Georgia Water Quality Control Act (O.C.G.A. § 12-5-20., *et seq*.) and the Clean Water Act of 1977 (33 U.S.C. §1251., *et seq*.).

(b) Where there are two or more applications for a permit for explorations, survey, etc., of the same submerged cultural resources, a preference shall be afforded to the first application in hand received by the Department and to the applicant who can demonstrate to the satisfaction of the Department that the applicant first discovered the subject submerged cultural resource.

Cite as Ga. Comp. R. & Regs. R. 391-5-9-.05

AUTHORITY: O.C.G.A. § 12-3-80 ***et seq*.**

HISTORY: Original Rule entitled "Permit Procedures" was filed on February 9, 1987; effective March 1, 1987.

Amended: F. Mar. 22, 2021; eff. Apr. 11, 2021.

391-5-9-.06 Permit Conditions

(1) The Department may condition any permit as necessary to protect the best interests of the State.

(2) Each permit shall be conditioned upon the permittee's compliance with all applicable federal, state and local laws and regulations.

(3) Each permit shall be effective for a period of one year from the date of issuance; provided however, that upon a written request submitted in advance of the date of termination, the Department may in its discretion extend such permit for periods not to exceed 6 months.

(4) A permit may be conditioned upon the requirement that the permittee maintain and submit copies of a daily log of all activities, including but not limited to, the type of equipment used, site conditions, and other site-specific data.

(5) Each permit shall be conditioned upon the requirement that the permittee submit a draft report to the Department within 120 days of completion of all field work and analysis which details and describes the significant activities and results of the operation. Such draft report shall be reviewed by the State Archaeologist and returned with any comments to the permittee. A final report acceptable to the Department shall be submitted within one year of the completion of all field work and analysis. All final reports shall become a part of the permanent public record of the permitted activity.

(6) Each permit shall be conditioned upon the requirement that the permittee agree to indemnify, hold harmless, and defend the State Archaeologist, State of Georgia, Department and its agents, employees or officers from and against

all claims, losses, damages, expenses, fines, liabilities, payment of any sum or sums of money to any person whomsoever, damage to property, including property of third person, the Department of Natural Resources, State of Georgia, the permittee(s), arising out of, or in connection with, their performance and prosecution of the operation permitted hereunder, whether caused by the claimed, actual, or sole negligence of the permittee(s). Except that this requirement shall not be applicable to state agencies or the Board of Regents.

(7) A permit may be conditioned upon an agreement with the permittee that in reasonable consideration of permittee's efforts to further the public interest of exploration, survey, protection, preservation, or recovery of other related submerged cultural resources, the State agrees to allow the permittee to retain a portion of the recovered submerged cultural resources; provided, however, that without such an express agreement, each permit shall require that all specimens, artifacts, materials, copies of field notes and photographs, documents, and information collected or produced as a result of the permitted operation will remain the property of the State of Georgia and shall be kept as a collection in an appropriate facility(ies), available for future study, research, analysis, or display.

(8) A permit may be conditioned upon the permittee's commencement within a certain period of time from date of issuance, and further conditioned upon the permittee's diligent pursuit of all operations.

(9) Each permit shall be conditioned upon the right of the Department to enter upon and into all facilities, vessels, or other premises directly associated with the permitted operation for the purpose of inspection and in order to make determinations of compliance with the terms of any permit, these rules, and all other applicable laws and rules.

(10) Each permit shall be conditioned upon the requirement that if the Department determines that the permittee has violated the permit, these rules, or other applicable laws then the permit may be either immediately suspended or revoked. By accepting a permit the permittee acknowledges that irreparable harm and damage to state property can occur if the terms of the permit are not followed; therefore, all permits are conditioned upon immediate suspension or revocation which the permittee accepts as an express condition to its operation; provided that permittee accepts as adequate protection of its interests that it may appeal any such immediate suspension or revocation in the manner provided in O.C.G.A. § 12-3-52(d) and these rules.

(11) Each permit shall provide conditions as follows:

(a) No permit may be transferred or assigned without the written permission of the Department;

(b) The State Archaeologist will be notified by telephone at least 24 hours in advance of commencement of any on-site recovery operations; and

(c) The State Archaeologist shall be notified by telephone within three days of completion of all on-site operations.

Cite as Ga. Comp. R. & Regs. R. 391-5-9-.06

AUTHORITY: O.C.G.A. § 12-3-80 ***et seq*.**

HISTORY: Original Rule entitled "Permit Conditions" adopted. F. Feb. 9, 1987; eff. Mar. 1, 1987.

Amended: F. Mar. 22, 2021; eff. Apr. 11, 2021.

Department 391. RULES OF GEORGIA DEPARTMENT OF NATURAL RESOURCES

Chapter 391-5. HISTORIC PRESERVATION

Subject 391-5-10. [Repealed]

391-5-10-.01 [Repealed]

Cite as Ga. Comp. R. & Regs. R. 391-5-10-.01

AUTHORITY: O.C.G.A. §§ 12-2-1**,** 12-2-2**,** 12-2-24**,** 12-3-50.1**,** 12-3-50.2**,** 12-3-55**,** 12-3-56**,** 12-3-57**,** 12-3-58**,** 12-3-80 ***et seq*****., 12-5-323, 28-5-122, 50-13-3, 50-13-4, 50-13-9.**

HISTORY: Original Rule entitled "Definitions" adopted. F. Jun. 12, 1990; eff. Aug. 1, 1990.

Amended: F. Apr. 15, 1991; eff. May 5, 1991.

Amended: F. Aug. 27, 1998; eff. Sept. 16, 1998.

Repealed: F. Mar. 22, 2021; eff. Apr. 11, 2021.

391-5-10-.02 [Repealed]

Cite as Ga. Comp. R. & Regs. R. 391-5-10-.02

AUTHORITY: O.C.G.A. §§ 12-2-1**,** 12-2-2**,** 12-2-24**,** 12-3-50.1**,** 12-3-50.2**,** 12-3-55**,** 12-3-56**,** 12-3-57**,** 12-3-58**,** 12-3-80 ***et seq*****., 12-5-323, 28-5-122, 50-13-3, 50-13-4, 50-13-9.**

HISTORY: Original Rule entitled "Criteria for Evaluation of Properties for the Georgia Register" adopted. F. Jul. 12, 1990; eff. Aug. 1, 1990.

Amended: F. Apr. 15, 1991; eff. May 5, 1991.

Repealed: F. Mar. 22, 2021; eff. Apr. 11, 2021.

391-5-10-.03 [Repealed]

Cite as Ga. Comp. R. & Regs. R. 391-5-10-.03

AUTHORITY: O.C.G.A. §§ 12-2-1**,** 12-2-2**,** 12-2-24**,** 12-3-50.1**,** 12-3-50.2**,** 12-3-55**,** 12-3-56**,** 12-3-57**,** 12-3-58**,** 12-3-80 ***et seq*****., 12-5-323, 28-5-122, 50-13-3, 50-13-4, 50-13-9.**

HISTORY: Original Rule entitled "Relationship of Georgia Register to National Register" adopted. F. Jul. 12, 1990; eff. Aug. 1, 1990.

Amended: F. Apr. 15, 1991; eff. May 5, 1991.

Repealed: F. Mar. 22, 2021; eff. Apr. 11, 2021.

391-5-10-.04 [Repealed]

Cite as Ga. Comp. R. & Regs. R. 391-5-10-.04

AUTHORITY: O.C.G.A. §§ 12-2-1**,** 12-2-2**,** 12-2-24**,** 12-3-50.1**,** 12-3-50.2**,** 12-3-55**,** 12-3-56**,** 12-3-57**,** 12-3-58**,** 12-3-80 ***et seq*****., 12-5-323, 28-5-122, 50-13-3, 50-13-4, 50-13-9.**

HISTORY: Original Rule entitled "Relationship of Georgia Register to National Register" adopted. F. Jul. 12, 1990; eff. Aug. 1, 1990.

Amended: F. Apr. 15, 1991; eff. May 5, 1991.

Repealed: F. Mar. 22, 2021; eff. Apr. 11, 2021.

Department 391. RULES OF GEORGIA DEPARTMENT OF NATURAL RESOURCES

Chapter 391-5. HISTORIC PRESERVATION

Subject 391-5-11. [Repealed]

391-5-11-.01 [Repealed]

Cite as Ga. Comp. R. & Regs. R. 391-5-11-.01

AUTHORITY: O.C.G.A. §§ 12-2-1**,** 12-2-2**,** 12-2-24**,** 12-3-50.1**,** 12-3-50.2**,** 12-3-55**,** 12-3-56**,** 12-3-57**,** 12-3-58**,** 12-3-80 ***et seq*****., 12-5-323, 28-5-122, 50-13-3, 50-13-4, 50-13-9.**

HISTORY: Original Rule entitled "Definitions" adopted. F. Jul. 12, 1990; eff. Aug. 1, 1990.

Amended: ER 391-5-11-0.20-.01(12)(d) was f. Oct. 4, 1990; eff. Sept. 28, 1990, the date of adoption, to remain in effect for a period of 120 days or until the effective date of a permanent Rule covering the same subject matter superseding this ER, as specified by the Agency.

Amended: F. Apr. 15, 1991; eff. May 5, 1991.

Amended: F. Aug. 27, 1998; eff. Sept. 16, 1998.

Repealed: F. Mar. 22, 2021; eff. Apr. 11, 2021.

391-5-11-.02 [Repealed]

Cite as Ga. Comp. R. & Regs. R. 391-5-11-.02

AUTHORITY: O.C.G.A. §§ 12-2-1**,** 12-2-2**,** 12-2-24**,** 12-3-50.1**,** 12-3-50.2**,** 12-3-55**,** 12-3-56**,** 12-3-57**,** 12-3-58**,** 12-3-80 ***et seq*****., 12-5-323, 28-5-122, 50-13-3, 50-13-4, 50-13-9.**

HISTORY: Original Rule entitled "Requirements for Preliminary and Final Certification of Rehabilitated Historic Properties" adopted. F. Jun. 12, 1990; eff. Aug. 1, 1990.

Amended: F. Apr. 15, 1991; eff. May 5, 1991.

Repealed: F. Mar. 22, 2021; eff. Apr. 11, 2021.

391-5-11-.03 [Repealed]

Cite as Ga. Comp. R. & Regs. R. 391-5-11-.03

AUTHORITY: O.C.G.A. §§ 12-2-1**,** 12-2-2**,** 12-2-24**,** 12-3-50.1**,** 12-3-50.2**,** 12-3-55**,** 12-3-56**,** 12-3-57**,** 12-3-58**,** 12-3-80 ***et seq*****., 12-5-323, 28-5-122, 50-13-3, 50-13-4, 50-13-9.**

HISTORY: Original Rule entitled "Standards for Rehabilitation" adopted. F. Jul. 12, 1990; eff. Aug. 1, 1990.

Amended: F. Apr. 15, 1991; eff. May 5, 1991.

Repealed: F. Mar. 22, 2021; eff. Apr. 11, 2021.

391-5-11-.04 [Repealed]

Cite as Ga. Comp. R. & Regs. R. 391-5-11-.04

AUTHORITY: O.C.G.A. §§ 12-2-1**,** 12-2-2**,** 12-2-24**,** 12-3-50.1**,** 12-3-50.2**,** 12-3-55**,** 12-3-56**,** 12-3-57**,** 12-3-58**,** 12-3-80 ***et seq*****., 12-5-323, 28-5-122, 50-13-3, 50-13-4, 50-13-9.**

HISTORY: Original Rule entitled "Decertification as Rehabilitated Historic Property Conditions" adopted. F. Jul. 12, 1990; eff. Aug. 1, 1990.

Amended: F. Apr. 15, 1991; eff. May 5, 1991.

Repealed: F. Mar. 22, 2021; eff. Apr. 11, 2021.

391-5-11-.05 [Repealed]

Cite as Ga. Comp. R. & Regs. R. 391-5-11-.05

AUTHORITY: O.C.G.A. §§ 12-2-1**,** 12-2-2**,** 12-2-24**,** 12-3-50.1**,** 12-3-50.2**,** 12-3-55**,** 12-3-56**,** 12-3-57**,** 12-3-58**,** 12-3-80 ***et seq*****., 12-5-323, 28-5-122, 50-13-3, 50-13-4, 50-13-9.**

HISTORY: Original Rule entitled "Certification Procedures" adopted. F. Jul. 12, 1990; eff. Aug. 1, 1990.

Amended: F. Apr. 15, 1991; eff. May 5, 1991.

Repealed: F. Mar. 22, 2021; eff. Apr. 11, 2021.

Department 391. RULES OF GEORGIA DEPARTMENT OF NATURAL RESOURCES

Chapter 391-5. HISTORIC PRESERVATION

Subject 391-5-13. STATE AND FEDERAL GRANTS PROGRAMS

391-5-13-.03 Recreational Trails Program (RTP)

(1) Purpose and Name. The Recreational Trails Program (RTP) of the Georgia Department of Natural Resources (GA DNR) coordinates and administers federal pass through grants for recreational trails. The U.S. Department of Transportation, Federal Highway Administration (FHWA) provides federal funding to states for grants for both motorized and non-motorized recreational trail projects to construct new recreational trails, improve/maintain existing trails, develop/improve trailhead or trailside facilities, and acquire trail corridors. Funding for this federal grant program is derived from that portion of the federal gasoline tax paid on the gasoline purchased for non-highway recreational vehicles-off-highway motorcycles, ATV's, snowmobiles, and off-highway trucks. The Commissioner of the Georgia Department of Natural Resources, or his designee, is designated as the principal official for coordinating with the FHWA. O.C.G.A. 12-2-6 provides the statutory basis for the Georgia Department of Natural Resources to administer this federal pass through grant program.

(2) Eligible Grant Recipients. All applicants must be currently registered in SAM.gov with a unique Data Universal Numbering System (DUNS) number. Applications from project sponsors not meeting this criterion will be deemed ineligible and will not be reviewed. Eligible grant recipients include:

- Georgia Qualified Local Governments (counties and municipalities approved by the Georgia Department of Community Affairs), including legally constituted recreation boards, commissions, or authorities with legislative sanction.
- State Agencies.
- Federal Agencies.
- Nonprofit organizations with IRS 501(c)(3) tax exempt status, if applying for eligible educational program grants that promote recreational trail safety and environmental protection.

Prospective applicants may be deemed not eligible to apply if they have active or previously awarded grants through GA DNR which are not in full compliance with federal and state requirements. Successful completion of projects in a timely and efficient manner is a key goal of the RTP grant program. RTP staff will review each application for eligibility to determine:

- Whether the applicant is on schedule with all active GA DNR grant projects, and
- Whether the applicant is in compliance with all applicable guidelines for current and past projects.

Serious instances of non-compliance may result in application denial. Past non-compliance may also be cause for GA DNR to place additional requirements or special conditions on the grant, if selected, and as allowed by 2 CFR 200.207.

(3) RTP Grants General Scope, Terms and Conditions. FHWA funds allocated to States for RTP grants must be distributed as follows: 30 percent for motorized trail uses, 30 percent for non-motorized trail uses, and 40 percent for diverse trail uses. Funds allocated to the States also include a portion available for educational programs that promote safety and environmental protection as those objectives relate to the use of recreational trails.

The RTP grant program is a reimbursement program. Grant recipients pay for 100 percent of the costs and then submit required documentation for reimbursement for 80 percent of eligible costs, up to the grant award amount. Match requirements can be met by private donations of funds, materials, right-of-ways, and services at fair market value. Applicant must document the availability of the required minimum twenty percent (20%) match for each application.

RTP grant recipients will have 24 months to complete the project from the date of the signed project agreement.

Project costs are eligible for 80% reimbursement only if incurred after the project has been approved for funding by the FHWA, and a project agreement has been signed. Project sponsors cannot be reimbursed for work done prior to the project agreement date.

Due to the competitive process for these grants, upon execution of a project agreement with a grant recipient, any requests for additional funding or significant changes in the scope must be approved by GA DNR staff and the FHWA.

Grant recipients will be required to attend a fiscal briefing before execution of the signed project agreement.

Permitted uses of RTP Grant funds include:

- Construction of new recreational trails open to the public on state, county, municipal or private lands where a recreational need for such construction is shown.

- Development and rehabilitation of trailside and trailhead facilities and trail linkages for recreational trails. Trailside and trailhead facilities includes trail components or associated facilities which serve the purpose and safe use of the recreational trail, and may include, but are not limited to, the following: drainage, crossings, stabilization, parking, signage, controls, shelters, hitching rails, water trail vessel launch facilities, bike racks, fencing, motorized access barriers, underpasses, and water, sanitary, and access facilities.

- Acquisition of easements or fee simple title from a willing seller to property for recreational trails or recreational trail corridors.

- Maintenance and restoration of existing recreational trails.

- Lease of recreational trail construction and maintenance heavy equipment, and purchase of hand tools.

- Provide access and use of recreational trails by persons with disabilities.

- Redesign, reconstruction, non-routine maintenance or relocation of recreational trails to benefit the natural environment or to mitigate and minimize the impact to the natural environment.

- Construction of new recreation trails crossing federal land if the project is consistent with resources management plans. Approval will be contingent upon compliance with all applicable laws, including the National Environmental Policy Act and the Forest and Rangeland Renewable Resources Planning Act, and the Federal Land Policy and Management Act.

- Educational programs that promote safety and environmental protection as those objectives relate to the use of recreational trails.

Uses not permitted with RTP Grant funds include:

- Condemnation of any kind of interest in property.

- Construction of new recreation trails for motorized use on National Forest or Bureau of Land Management lands that have been recommended for Wilderness designation.

- Upgrading, expanding, or otherwise facilitating motorized use or access to recreational trails predominantly used by non-motorized recreational trail users and on which, as of May 1, 1991, motorized use was prohibited or had not occurred.

- Road construction or sidewalks.

- Purchase of recreational trail construction and maintenance heavy equipment. (Does not include hand tools.).

- Administrative staff time, overhead or indirect charges are not allowable charges.

- Feasibility studies.

- Playground equipment or campground development.

Minimum grantee compliance requirements include:

- Equal Opportunity: The grantee must comply with Title VI of the Civil Rights Act of 1964, Section 504 of the Rehabilitation Act of 1973, The Age Discrimination Act of 1975, The Americans with Disabilities Act of 1990 and all other state and federal laws of non-discrimination. The applicant must certify that no person shall be discriminated against on the basis of race, color, sex, religion, national origin, age, or physical or mental handicap for any program, activity, or facility sponsored, operated, or constructed under the sub-grant project.

- State and Federal Laws / Regulations: Grantee shall comply with all federal, state and local laws, regulations, executive orders and ordinances applicable to the grant agreement or to usage of the grant funds. Key regulations applicable to RTP include but are not limited to:

- 2 CFR 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards.

- 2 CFR 1201.

- FHWA Recreational Trails Program Interim Guidance.

- 23 U.S.C. 206 Recreational Trails Program.

- 23 U.S.C. 104(h), Recreational Trails Program Apportionments.

- 23 U.S.C. 106, Project Approval and Oversight.

- 23 CFR 1.36, Compliance with other Federal Laws and Regulations.

- 23 CFR 771, Environmental Requirements.

- 23 CFR 635.410 Buy America.

- 49 CFR 29, Suspension and Debarment.

- Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970.

- 23 U.S.C. 114, Convict Labor.

- 23 U.S.C. Prevailing Wage Rate (Davis Bacon Act).

- Grantees have statutory responsibilities to provide opportunities for the participation of people with disabilities in recreational trails activities funded under the RTP. Federal laws that affect the design, construction, alteration, and operation of trail facilities include the Architectural Barriers Act of 1968 (ABA), Section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act of 1990 (ADA). The ADA prohibits discrimination and ensures equal opportunity and access for persons with disabilities. Section 504 of the Rehabilitation Act states that no otherwise qualified individual with a disability in the United States, as defined in section 7(20), shall, solely by reason of her or his disability, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance. The ABA requires that facilities designed, built, altered, or leased with funds supplied by the United States Federal Government be accessible to the public. Current regulations implementing these statutes contain requirements that apply to existing trail construction and program operations and adopt technical standards to guide new trail construction and alterations of existing networks.

- Buildings and facilities newly-constructed or altered with Federal funds are subject to the accessibility requirements contained in the Uniform Federal Accessibility Standards (UFAS), the standard currently referenced in the ABA.

- Accessibility in Federally-assisted programs is governed by the requirements of the United States Department of Transportation regulations (49 CFR Part 27) implementing Section 504 of the Rehabilitation Act (29 U.S.C. 794).

- The United States Department of Justice's (DOJ) Title II implementing regulations (28 CFR Part 35) describe the obligations of State and local governments for existing facilities and program operations, and require Title II entities (public entities) to comply with either UFAS or the Americans with Disabilities Act Accessibility Guidelines (ADAAG) developed by the United States Architectural and Transportation Barriers Compliance Board when constructing or altering facilities.

(4) RTP Application Process. RTP will begin each funding cycle in September of odd number calendar years with a public announcement soliciting eligible grant projects from eligible project sponsors, and posting of the specific grant cycle applications and instructions on the GA DNR website. Each funding cycle application announcement will include the following:

- Estimated total dollar amount of grant funding available for that cycle.

- Minimum and Maximum grant award amounts available.

- Deadlines, application forms, specific requirements, and procedures for submission of the pre and second-level grant applications and required supporting documents.

RTP biennial grant opportunities will involve a competitive pre-application process followed by an invitation only second-level application process. The detailed RTP pre-application and second-level application forms, instructions, due dates, format, required forms/documents, required drawings/maps, and project scoring criteria are available at the DNR website at: https://gadnr.org/grants.

Pre-Application Process: Pre-applications are due in November of odd numbered years. The exact due date is included in the grant cycle announcement posting to the DNR website at: https://gadnr.org/grants. All aspects of the pre-application must be completed electronically. Pre-applications must be submitted by the deadline stated on the grant cycle announcement or the application will not be eligible for review. The pre-application should include the following:

- Cover letter on official letterhead signed by the chief elected official/executive director/president.

- A signed Pre-application Form to include a response to each of the evaluation criterion.
- A resolution adopted by the governing entity of the applicant authorizing the application and committing all matching funds required to complete the proposed project.
- A narrative description of the proposed project.
- Estimate of cost.
- Preliminary site plan.
- Plat and/or legal description of the property proposed for purchase and/or development.
- Location map.
- Letters of commitment from partners providing grant match of any type.

All pre-applications are reviewed by the RTP staff to verify applicant eligibility, and priority rank the eligible applications based on project evaluation criteria. The pre-applications, and assigned scores and rankings are also reviewed by the Georgia Recreational Trails Advisory Committee. The highest ranking proposed projects will be invited to submit a second-level application. All applicants will be notified in April in even numbered years whether they have or have not been selected to submit the second-level application.

Second-level Application: Applicants with selected pre-applications will be invited to submit a second-level application. Second-level applications are due in May in even numbered years, and shall contain the following:

- A cover letter on entity letterhead.
- A signed application cover sheet.
- Detailed project budget.
- Environmental assessment:

_____Concurrence from the Army Corps of Engineers.

_____Concurrence from the U.S. Fish and Wildlife Service.

_____Concurrence from the Historic Preservation Division of the Georgia Department of Community Affairs.

If real property is to be acquired with grant funds, land must be surveyed for hazardous materials to avoid acquiring property that is a source of liability.

- Environmental Screening Form and Environmental Checklist.
- Copy of Deed to Property.

NOTE: If real property is to be acquired with grant funds, the acquisition must comply with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (The Uniform Act). Implementation regulations for the Act are found in 49 CFR Part 24. Do not acquire property until after the grant agreement has been executed and consultation with GA DNR has occurred.

- Signed statement from landowner expressing support (This is applicable if the applicant and landowner are not the same. A recorded easement allowing trail construction will be required from the landowner before construction begins.).

- Approvals to cross a public highway or a public utility right-of-way (if applicable).

- Maps: Property Boundary Area Map.

Preliminary Site Map, clearly depicting project components.

Site Location Map.

- Detailed Project Development Budget.

- Local Program Implementation Schedule.

Second-level applicants who are unable to meet all requirements for a complete application by the May deadline may be granted an extension by the GA DNR RTP staff, up to August 31 of the same year. Detailed instructions, guidance, specific due dates, applications and required forms are available at: https://gadnr.org/grants.

Education Projects - Education projects must have a direct relationship with a recreational trail or trails, and can include: safety education and environmental protection programs, and the production of trail-related educational materials such as information displays, printed materials, video, audio, and interactive computer displays. Parties interested in applying for an education project grant must consult with the Georgia Recreational Trails Program staff prior to submitting an application.

(5) Application Review Process and Timeline.

- May, odd number calendar years - Georgia DNR announces biennial funding cycle via public announcement and website posting of information.

- September, odd number calendar years - Pre-application period opens.

- November, odd number calendar years- Deadline for Pre-application.

- Pre-applications are reviewed for eligibility, scored and ranked by the GA DNR RTP staff. Georgia RTP Advisory committee also reviews application rankings, and the Georgia DNR Board is informed of the applicant rankings. Copies of the selected pre-applicants are forwarded to the Federal Highway Administration.

- April, even number calendar years- All pre-applicants are notified, and selected pre-applicants are invited to submit second-level applications. The second-level application process certifies completion of all environmental assessments and required environmental permits, land ownership or easements, and verifies the applicant's financial ability to complete the project as proposed.

- May, even number years- Deadline for second-level applications.

- Second-level applicants who successfully complete all requirements and submit all necessary documents by the deadline will be recommended for grant approval to FHWA. Second-level applicants who are unable to complete all requirements by the May deadline may be allowed an extension of time until August 31, with approval by the GA DNR RTP staff.

- Grant funds will be available to successful applicants upon approval by FHWA, a fiscal meeting with the GA DNR RTP staff, and execution of a Project Agreement between GA DNR and the applicant.

(6) Criteria for RTP Grant Awards. The public announcement for each RTP funding cycle, available at the DNR website, https://gadnr.org/grants, will contain the specific criteria used in rating the applications. The criteria used to rank applications shall include:

- Degree to which the proposed project meets the project area's recreational trail needs.
- The population demographics served by the project.
- Trail connectivity to other trails, parks, or greenspaces.
- Project enhancement of economic development opportunities.
- Public support and financial partners for the proposed trail project.
- Long-term management, operations, and maintenance plans and commitments.
- Americans with Disabilities Act accessibility.
- Applicant's history in administering and completing grant funded projects.
- Mitigation of environmental impacts.
- Ability to fully complete all aspects and requirements of the pre-application and second-level application.

(7) Application Submittal, Program Information- All applications should be submitted electronically.

Complete information on the Georgia Recreational Trails Grant Program, including links to Federal guidelines and complete application instructions, guidance, and required forms are available at: https://gadnr.org/grants.

Cite as Ga. Comp. R. & Regs. R.391-5-13-.03

AUTHORITY: O.C.G.A. § 48-7-29.8(1)**.**

HISTORY: Original description entitled "National Recreational Trails Fund (NRTF)" submitted May 26, 1994.

Submitted: Dec. 30, 2002.

Submitted: Grant description entitled "Recreational Trails Program (RTP)" Sept. 28, 2006.

Submitted: June 30, 2017.

Submitted: May 22, 2019.

Submitted: F. Mar. 22, 2021.

391-5-13-.04 [Repealed]

Cite as Ga. Comp. R. & Regs. R.391-5-13-.04

AUTHORITY: O.C.G.A. §§ 12-2-1**,** 12-2-2**,** 12-2-24**,** 12-3-50.1**,** 12-3-50.2**,** 12-3-55**,** 12-3-56**,** 12-3-57**,** 12-3-58**,** 12-3-80 ***et seq*****., 12-5-323, 28-5-122, 50-13-3, 50-13-4, 50-13-9.**

HISTORY: Original grant description entitled "Georgia Heritage 2000 Historic Preservation Grants" received June 1, 1994.

Submitted: Grant description, same title, received Oct. 23, 1995.

Submitted: Aug. 14, 1996.

Submitted: Grant description entitled "Georgia Heritage 2000 Grant Programs, SFY 1999" received Sept. 24, 1998.

Submitted: Grant description entitled "Georgia Heritage 2000 Grant Programs, SFY 2000" received Sept. 16, 1999.

Submitted: July 5, 2007.

Submitted: Feb. 7, 2012.

Repealed: F. Mar. 22, 2021; eff. Mar. 22, 2021.

391-5-13-.05 [Repealed]

Cite as Ga. Comp. R. & Regs. R.391-5-13-.05

AUTHORITY: O.C.G.A. §§ 12-2-1, 12-2-2, 12-2-24, 12-3-50.1, 12-3-50.2, 12-3-55, 12-3-56, 12-3-57, 12-3-58, 12-3-80 ***et seq*., 12-5-323, 28-5-122, 50-13-3, 50-13-4, 50-13-9.**

HISTORY: Original grant description entitled "Historic Preservation Fund Grants" submitted Jun. 10, 1994.

Submitted: Mar. 13, 1995.

Submitted: Sept. 19,2001.

Submitted: Feb. 7, 2012.

Repealed: F. Mar. 22, 2021; eff. Mar. 22, 2021.

391-5-13-.06 [Repealed]

Cite as Ga. Comp. R. & Regs. R.391-5-13-.06

AUTHORITY: O.C.G.A. §§ 12-2-1, 12-2-2, 12-2-24, 12-3-50.1, 12-3-50.2, 12-3-55, 12-3-56, 12-3-57, 12-3-58, 12-3-80 ***et seq*., 12-5-323, 28-5-122, 50-13-3, 50-13-4, 50-13-9.**

HISTORY: Original grant description entitled "Historic Cemetery Heritage Tourism Grant Program" submitted Apr. 23, 2008.

Submitted: Feb. 11, 2009.

Repealed: F. Mar. 22, 2021; eff. Mar. 22, 2021.

391-5-13-.07 [Repealed]

Cite as Ga. Comp. R. & Regs. R. 391-5-13-.07

AUTHORITY: O.C.G.A. §§ 12-2-1, 12-2-2, 12-2-24, 12-3-50.1, 12-3-50.2, 12-3-55, 12-3-56, 12-3-57, 12-3-58, 12-3-80 ***et seq*., 12-5-323, 28-5-122, 50-13-3, 50-13-4, 50-13-9.**

HISTORY: Original grant description entitled "Historic Theater Heritage Tourism Grant Program" received Dec. 15, 2010.

Repealed: F. Mar. 22, 2021; eff. Mar. 22, 2021.

391-5-13-.10 [Repealed]

Cite as Ga. Comp. R. & Regs. R. 391-5-13-.10

AUTHORITY: O.C.G.A. §§ 12-2-1**,** 12-2-2**,** 12-2-24**,** 12-3-50.1**,** 12-3-50.2**,** 12-3-55**,** 12-3-56**,** 12-3-57**,** 12-3-58**,** 12-3-80 ***et seq*****., 12-5-323, 28-5-122, 50-13-3, 50-13-4, 50-13-9.**

HISTORY: Original grant description entitled "Flood Recovery Grants For Historic Preservation" received Dec. 29, 1994.

Repealed: F. Mar. 22, 2021; eff. Mar. 22, 2021.

Department 391. RULES OF GEORGIA DEPARTMENT OF NATURAL RESOURCES

Chapter 391-5. HISTORIC PRESERVATION

Subject 391-5-14. [Repealed]

391-5-14-.01 [Repealed]

Cite as Ga. Comp. R. & Regs. R. 391-5-14-.01

AUTHORITY: O.C.G.A. §§ 12-2-1, 12-2-2, 12-2-24, 12-3-50.1, 12-3-50.2, 12-3-55, 12-3-56, 12-3-57, 12-3-58, 12-3-80 ***et seq*., 12-5-323, 28-5-122, 50-13-3, 50-13-4, 50-13-9.**

HISTORY: Original Rule entitled "Definitions" adopted. F. Oct. 9, 2003; eff. Oct. 29, 2003.

Repealed: New Rule of same title adopted. F. Jan. 5, 2016; eff. Jan. 25, 2016.

Repealed: F. Mar. 22, 2021; eff. Apr. 11, 2021.

391-5-14-.02 [Repealed]

Cite as Ga. Comp. R. & Regs. R. 391-5-14-.02

AUTHORITY: O.C.G.A. §§ 12-2-1, 12-2-2, 12-2-24, 12-3-50.1, 12-3-50.2, 12-3-55, 12-3-56, 12-3-57, 12-3-58, 12-3-80 ***et seq*., 12-5-323, 28-5-122, 50-13-3, 50-13-4, 50-13-9.**

HISTORY: Original Rule entitled "Requirements for Preliminary and Final Certification of Rehabilitated Historic Properties" adopted. F. Oct. 9, 2003; eff. Oct. 29, 2003.

Amended: F. Nov. 5, 2008; eff. Nov. 25, 2008.

Repealed: New Rule entitled "Program Administration" adopted. F. Jan. 5, 2016; eff. Jan. 25, 2016.

Repealed: F. Mar. 22, 2021; eff. Apr. 11, 2021.

391-5-14-.03 [Repealed]

Cite as Ga. Comp. R. & Regs. R. 391-5-14-.03

AUTHORITY: O.C.G.A. §§ 12-2-1, 12-2-2, 12-2-24, 12-3-50.1, 12-3-50.2, 12-3-55, 12-3-56, 12-3-57, 12-3-58, 12-3-80 ***et seq*., 12-5-323, 28-5-122, 50-13-3, 50-13-4, 50-13-9.**

HISTORY: Original Rule entitled "Certification of Historic Significance" adopted. F. Oct. 9, 2003; eff. Oct. 29, 2003.

Repealed: New Rule entitled "Program Benefits and Limitations; Substantial Rehabilitation" adopted. F. Jan. 5, 2016; eff. Jan. 25, 2016.

Repealed: F. Mar. 22, 2021; eff. Apr. 11, 2021.

391-5-14-.04 [Repealed]

Cite as Ga. Comp. R. & Regs. R. 391-5-14-.04

AUTHORITY: O.C.G.A. §§ 12-2-1, 12-2-2, 12-2-24, 12-3-50.1, 12-3-50.2, 12-3-55, 12-3-56, 12-3-57, 12-3-58, 12-3-80 ***et seq*., 12-5-323, 28-5-122, 50-13-3, 50-13-4, 50-13-9.**

HISTORY: Original Rule entitled "Standards for Evaluating Significance Within Registered Historic Districts" adopted. F. Oct. 9, 2003; eff. Oct. 29, 2003.

Repealed: New Rule entitled "Requirements for Preliminary and Final Certification of Rehabilitated Historic Properties; Certification Procedures" adopted. F. Jan. 5, 2016; eff. Jan. 25, 2016.

Repealed: F. Mar. 22, 2021; eff. Apr.11, 2021.

391-5-14-.05 [Repealed]

Cite as Ga. Comp. R. & Regs. R. 391-5-14-.05

AUTHORITY: O.C.G.A. §§ 12-2-1, 12-2-2, 12-2-24, 12-3-50.1, 12-3-50.2, 12-3-55, 12-3-56, 12-3-57, 12-3-58, 12-3-80 ***et seq*., 12-5-323, 28-5-122, 50-13-3, 50-13-4, 50-13-9.**

HISTORY: Original Rule entitled "Certifications of Rehabilitation" adopted. F. Oct. 9, 2003; eff. Oct. 29, 2003.

Repealed: New Rule entitled "Certification of Historic Significance" adopted. F. Jan. 5, 2016; eff. Jan. 25, 2016.

Repealed: F. Mar. 22, 2021; eff. Apr. 11, 2021.

391-5-14-.06 [Repealed]

Cite as Ga. Comp. R. & Regs. R. 391-5-14-.06

AUTHORITY: O.C.G.A. §§ 12-2-1, 12-2-2, 12-2-24, 12-3-50.1, 12-3-50.2, 12-3-55, 12-3-56, 12-3-57, 12-3-58, 12-3-80 ***et seq*., 12-5-323, 28-5-122, 50-13-3, 50-13-4, 50-13-9.**

HISTORY: Original Rule entitled "Standards for Rehabilitation" adopted. F. Oct. 9, 2003; eff. Oct. 29, 2003.

Repealed: New Rule entitled "Standards for Evaluating Significance" adopted. F. Jan. 5, 2016; eff. Jan. 25, 2016.

Repealed: F. Mar. 22, 2021; eff. Apr. 11, 2021.

391-5-14-.07 [Repealed]

Cite as Ga. Comp. R. & Regs. R. 391-5-14-.07

AUTHORITY: O.C.G.A. §§ 12-2-1, 12-2-2, 12-2-24, 12-3-50.1, 12-3-50.2, 12-3-55, 12-3-56, 12-3-57, 12-3-58, 12-3-80 ***et seq*., 12-5-323, 28-5-122, 50-13-3, 50-13-4, 50-13-9.**

HISTORY: Original Rule entitled "Certification Procedures" adopted. F. Oct. 9, 2003; eff. Oct. 29, 2003.

Amended: F. Nov. 5, 2008; eff. Nov. 25, 2008.

Repealed: New Rule entitled "Certifications of Rehabilitation" adopted. F. Jan. 5, 2016; eff. Jan. 25, 2016.

Repealed: F. Mar. 22, 2021; eff. Apr. 11, 2021.

391-5-14-.08 [Repealed]

Cite as Ga. Comp. R. & Regs. R. 391-5-14-.08

AUTHORITY: O.C.G.A. §§ 12-2-1, 12-2-2, 12-2-24, 12-3-50.1, 12-3-50.2, 12-3-55, 12-3-56, 12-3-57, 12-3-58, 12-3-80 ***et seq*., 12-5-323, 28-5-122, 50-13-3, 50-13-4, 50-13-9.**

HISTORY: Original Rule entitled "Substantial Rehabilitation" adopted. F. Oct. 9, 2003; eff. Oct. 29, 2003.

Repealed: New Rule entitled "Standards for Rehabilitation" adopted. F. Jan. 5, 2016; eff. Jan. 25, 2016.

Repealed: F. Mar. 22, 2021; eff. Apr. 11, 2021.

391-5-14-.09 [Repealed]

Cite as Ga. Comp. R. & Regs. R. 391-5-14-.09

AUTHORITY: O.C.G.A. §§ 12-2-1, 12-2-2, 12-2-24, 12-3-50.1, 12-3-50.2, 12-3-55, 12-3-56, 12-3-57, 12-3-58, 12-3-80 ***et seq*., 12-5-323, 28-5-122, 50-13-3, 50-13-4, 50-13-9.**

HISTORY: Original Rule entitled "Appeals" adopted. F. Oct. 9, 2003; eff. Oct. 29, 2003.

Repealed: New Rule entitled "Revocation and Recapture" adopted. F. Jan. 5, 2016; eff. Jan. 25, 2016.

Repealed: F. Mar. 22, 2021; eff. Apr. 11, 2021.

391-5-14-.10 [Repealed]

Cite as Ga. Comp. R. & Regs. R. 391-5-14-.10

AUTHORITY: O.C.G.A. §§ 12-2-1, 12-2-2, 12-2-24, 12-3-50.1, 12-3-50.2, 12-3-55, 12-3-56, 12-3-57, 12-3-58, 12-3-80 ***et seq*., 12-5-323, 28-5-122, 50-13-3, 50-13-4, 50-13-9.**

HISTORY: Original Rule entitled "Recapture" adopted. F. Oct. 9, 2003; eff. Oct. 29, 2003.

Repealed: New Rule entitled "Effective Date" adopted. F. Jan. 5, 2016; eff. Jan. 25, 2016.

Repealed: F. Mar. 22, 2021; eff. Apr. 11, 2021.

391-5-14-.11 [Repealed]

Cite as Ga. Comp. R. & Regs. R. 391-5-14-.11

AUTHORITY: O.C.G.A. §§ 12-2-1, 12-2-2, 12-2-24, 12-3-50.1, 12-3-50.2, 12-3-55, 12-3-56, 12-3-57, 12-3-58, 12-3-80 ***et seq*., 12-5-323, 28-5-122, 50-13-3, 50-13-4, 50-13-9.**

HISTORY: Original Rule entitled "Effective Date" adopted. F. Oct. 9, 2003; eff. Oct. 29, 2003.

Amended: F. Nov. 5, 2008; eff. Nov. 25, 2008.

Repealed: New Rule entitled "Fees for Processing Certification Requests" adopted. F. Jan. 5, 2016; eff. Jan. 25, 2016.

Repealed: F. Mar. 22, 2021; eff. Apr. 11, 2021.

Department 393. RULES OF GEORGIA STATE BOARD OF LONG-TERM CARE FACILITY ADMINISTRATORS

Chapter 393-1. ORGANIZATION

393-1-.01 Organization

(a) The term "Board" shall mean the Georgia State Board of Long-Term Care Facility Administrators, which shall consist of nine members. The members of the Board shall be appointed by the Governor and confirmed by the Senate, as follows:

(1) Three members who are nursing home administrators in this state, at least one of whom shall represent nonproprietary nursing homes;

(2) Three members each of whom are either a personal care home administrator or an assisted living community administrator; provided, however, that on and after July 1, 2021, all successor members appointed pursuant to this paragraph shall be either a licensed personal care home administrator or a licensed assisted living community administrator;

(3) Two members of the public at large who are not personal care home administrators, assisted living community administrators, or nursing home administrators or pecuniarily interested in any personal care home, assisted living community, or nursing home, or have any connection with the personal care home, assisted living community, or nursing home industry whatsoever; and

(4) One member who is a health care professional with at least a bachelor's degree, experience in elder care, and knowledge in dementia care and who is not a personal care home administrator, an assisted living community administrator, or a nursing home administrator or pecuniarily interested in any personal care home, assisted living community, or nursing home, or has any connection with the personal care home, assisted living community, or nursing home industry whatsoever.

(b) The term for all members shall be three years from the date of appointment. A member may be removed as provided in Code Section 43-1-17, including removal for failing to attend three meetings in one calendar year. All vacancies shall be filled by the Governor for the unexpired terms in accordance with the requirements for appointment to the vacant position.

Cite as Ga. Comp. R. & Regs. R. 393-1-.01

AUTHORITY: O.C.G.A. §§ 43-1-17**,** 43-1-24**,** 43-1-25**,** 43-27-2**,** 43-27-5**.**

HISTORY: Original Rule entitled "Organization of Board" was filed on December 31, 1969; effective January 19, 1970.

Amended: Rule repealed and a new Rule of the same title adopted. Filed December 22, 1970; effective January 11, 1971.

Amended: Rule repealed and a new Rule entitled "Organization" adopted. Filed September 5, 1975; effective September 25, 1975.

Amended: Rule repealed and a new Rule of the same title adopted. Filed September 29, 1980; effective October 19, 1980.

Amended: F. Sept. 9, 1994; eff. Sept. 29, 1994.

Repealed: New Rule of same title adopted. F. Dec. 11, 2007; eff. Dec. 31, 2007.

Amended: F. Mar. 5, 2021; eff. Mar. 25, 2021.

Department 393. RULES OF GEORGIA STATE BOARD OF LONG-TERM CARE FACILITY ADMINISTRATORS

Chapter 393-2. DEFINITIONS

393-2-.01 Definitions

(a) The term "Administrator" shall mean a person who operates, manages, supervises, or is in charge of a long-term care facility. The Board does not recognize the title of "Assistant Administrator" and anyone performing the duties as an Administrator in a Long-Term Care Facility must be licensed by the Board.

(b) The term "Long-Term Care Facility" shall mean a personal care home with 25 beds or more, an assisted living community, or a nursing home licensed in this state.

Cite as Ga. Comp. R. & Regs. R. 393-2-.01

AUTHORITY: O.C.G.A. §§ 43-1-24**,** 43-1-25**,** 43-27-1**,** 43-27-5**,** 43-27-6**,** 50-13-3**.**

HISTORY: Original Rule entitled "Examination" adopted. F. Dec. 31, 1969; eff. Jan. 19, 1970.

Repealed: New Rule entitled "Administrator" adopted. F. Sept. 5, 1975; eff. Sept. 25, 1975.

Amended: F. Sept. 25, 1995; eff. Oct. 15, 1995.

Amended: F. Dec. 29, 1995; eff. Jan. 18, 1996.

Repealed: New Rule entitled "Definitions" adopted. F. Dec. 11, 2007; eff. Dec. 31, 2007.

Amended. F. Apr 3, 2012; eff. Apr. 23, 2012.

Amended: F. Mar. 5, 2021; eff. Mar. 25, 2021.

Department 393. RULES OF GEORGIA STATE BOARD OF LONG-TERM CARE FACILITY ADMINISTRATORS

Chapter 393-3. LICENSURE BY EXAMINATION

393-3-.02 Licensure Requirements for Nursing Home Administrators

A person who seeks licensure by examination as a nursing home administrator must show the following:

(a) Be at least 21 years of age;

(b) Be of reputable and responsible character;

(c) Be a citizen of the United States or have a registration card indicating valid residency and work status in the United States; all applicants must submit a secure and verifiable document, as defined in Code Section 50-36-2;

(d) Be qualified to work in a skilled nursing home as outlined in state rules as promulgated by the Georgia Department of Community Health, federal regulations as promulgated by the Centers for Medicare and Medicaid Services, and Board rules. The following are the education requirements accepted by the Board:

1. A doctorate or master's degree in health administration, health services administration, health care administration, or nursing, or other related healthcare degrees, and a 500 hour Georgia AIT program; or

2. A baccalaureate degree in health administration, health services administration, health care administration, or nursing, or other healthcare related degree, and a 1000 hour Georgia AIT program, or

3. An associate degree in nursing or licensed practical nursing certification with four years of full-time work in any skilled nursing facility with the last two years being in management, and a 1500 hour Georgia AIT program; or

4. Six years of full-time work in any skilled nursing facility with the last three years being in management and no less than 48 semester units or 90 quarter units of college, plus a 2000 hour Georgia AIT program, or

5. Eight years full-time experience in a skilled nursing facility with the last five years being in management, a High School Diploma, and a 2000 hour Georgia AIT program.

(e) Management experience is defined as full-time employment as a department manager or licensed professional supervising a staff of two or more employees in a skilled nursing facility or skilled nursing hospital unit.

(f) Education is defined as one year of college with 45 quarter hours or 24 semester hours of course work at an educational institution accredited by a regional body recognized by the Council of Post-Secondary Accreditation (like SACS).

(g) If an applicant does not meet these requirements but does have a doctorate, masters or baccalaureate degree in a field outside of healthcare, the applicant would be required to complete a 2000 hour AIT program in Georgia to qualify for licensure.

Cite as Ga. Comp. R. & Regs. R. 393-3-.02

AUTHORITY: O.C.G.A. §§ 43-1-25**,** 43-27-4**,** 43-27-5**,** 43-27-6**,** 50-36-1**,** 50-36-2**.**

HISTORY: Original Rule entitled "Application for Examination" adopted. F. Sept. 5, 1975; eff. Sept. 25, 1975.

Amended: F. Jan. 17, 1979; eff. Feb. 6, 1979.

Amended: F. Jan. 19, 1984; eff. Feb. 8, 1984.

Amended: F. Dec. 18, 1986; eff. Jan. 7, 1987.

Amended: F. Nov. 2, 1987; eff. Nov. 22, 1987.

Repealed: New Rule entitled "Application Process" adopted. F. Feb. 12, 1991; eff. Mar. 4, 1991.

Repealed: New Rule entitled "Pre-Examination Requirements" adopted. F. Feb. 26, 1993; eff. Mar. 18, 1993.

Amended: F. Jan. 9, 1997; eff. Jan 29, 1997.

Repealed: New Rule entitled "Licensure Requirements" adopted. F. Dec. 11, 2007; eff. Dec. 31, 2007.

Repealed: New Rule of same title adopted. F. Dec. 11, 2008; eff. Dec. 31, 2008.

Repealed: New Rule of same title adopted. F. Aug. 7, 2009; eff. Aug. 27, 2009.

Repealed: New Rule of the same title adopted. F. Dec. 16, 2010; eff. Jan. 5, 2011.

Amended: F. Apr. 29, 2016; eff. May 19, 2016.

Amended: New title "Licensure Requirements for Nursing Home Administrators." F. Mar. 5, 2021; eff. Mar. 25, 2021.

393-3-.03 Examination for Nursing Home Administrators

(1) Upon the Board's approval of the completion of an AIT program, an applicant shall be approved to take the national exam. No applicant shall be approved to register and sit for the national exam prior to the Board approval of the AIT program.

(2) Following the Board approval of the completion of the AIT program, an applicant shall complete all requirements for licensure as a Nursing Home Administrator within six (6) months of the date of Board approval of the AIT program's completion.

(3) If the applicant fails to complete all requirements for licensure as a Nursing Home Administrator within the six (6) month timeframe, the application will be withdrawn and the applicant must submit a new application, current documentation and fee.

Cite as Ga. Comp. R. & Regs. R. 393-3-.03

AUTHORITY: O.C.G.A. §§ 43-1-25**,** 43-27-4**,** 43-27-5**,** 43-27-6**.**

HISTORY: Original Rule entitled "Examination" adopted. F. Sept. 5, 1975; eff. Sept. 25, 1975.

Amended: F. Jan. 19, 1984; eff. Feb. 8, 1984.

Amended: F. Dec. 18, 1986; eff. Jan. 7, 1987.

Repealed: New Rule of same title adopted. F. Feb. 12, 1991; eff. Mar. 4, 1991.

Repealed: New Rule entitled "Application Process" adopted. F. Feb. 26, 1993; eff. Mar. 18, 1993.

Amended: F. Mar. 9, 1994; eff. Mar. 29, 1994.

Amended: F. June 10, 1994; eff. June 30, 1994.

Amended: F. June 10, 2002; eff. June 30, 2002.

Amended: F. Dec. 18, 2002; eff. Jan. 7, 2003.

Repealed: F. Dec. 11, 2007; eff. Dec. 31, 2007.

Adopted: New Rule entitled "Examination for Nursing Home Administrators." F. Mar. 5, 2021; eff. Mar. 25, 2021.

393-3-.04 Licensure Requirements for Assisted Living Community Administrators and Personal Care Home Administrators

A person who seeks licensure by examination as an Assisted Living Community Administrator or Personal Care Home Administrator must show the following:

(a) Be at least 21 years of age;

(b) Be of reputable and responsible character;

(c) Be a citizen of the United States or have a registration card indicating valid residency and work status in the United States; all applicants must submit a secure and verifiable document, as defined in Code Section 50-36-2;

(d) Be qualified to work in an assisted living community or personal care home as outlined in state rules, as promulgated by the Georgia Department of Community Health, and Board rules.

(e) Proof of completion of one of the following:

1. At least one year of full-time practical experience in a healthcare facility or managerial/supervisory experience outside of a healthcare facility prior to the date of the application AND certification from a nationally recognized program (e.g. Senior Living University), program accredited by the National Association of Long Term Care Administrator Boards (NAB), or any other program approved by the Board, which teaches the responsibilities of Assisted Living Community Administration, is a minimum of 14 hours in length, and requires passage of a written exam; or

2. Health Services Executive (HSE) qualification from the National Association of Long Term Care Administrator Boards (NAB); or

3. Hold a master's degree in a health care related field that includes a minimum of 21 semester hours of coursework concentrated on the administration and management of health care services AND passage of the Resident Care/Assisted Living (RCAL) national examination administered by the National Association of Long Term Care Administrator Boards (NAB); or

4. Hold an active, unencumbered Georgia license as a Nursing Home Administrator.

Cite as Ga. Comp. R. & Regs. R. 393-3-.04

AUTHORITY: O.C.G.A. §§ 43-1-25**,** 43-27-4**,** 43-27-5**,** 43-27-6**.**

HISTORY: Original Rule entitled "Examination" adopted. F. Feb. 26, 1993; eff. Mar. 18, 1993.

Amended: F. Mar. 9, 1994; eff. Mar. 29, 1994.

Amended: F. Sept. 25, 1995; eff. Oct. 15, 1995.

Amended: F. June 10, 2002; eff. June 30, 2002.

Repealed: New Rule of same title adopted. F. June 8, 2007; eff. June 28, 2007.

Amended: F. Apr. 29, 2016; eff. May 19, 2016.

Repealed: New Rule entitled "Licensure Requirements for Assisted Living Community Administrators and Personal Care Home Administrators" adopted. F. Mar. 5, 2021; eff. Mar. 25, 2021.

Department 393. RULES OF GEORGIA STATE BOARD OF LONG-TERM CARE FACILITY ADMINISTRATORS

Chapter 393-5. RENEWAL AND REINSTATEMENT PROCESS

393-5-.01 Renewal of License

(1) Administrator licenses shall expire on December 31st of each odd-numbered year.

(2) Continuing Education

(a) Nursing Home Administrators - Forty (40) hours of CE must be obtained within the current two-year active licensure cycle (i.e. between January 1st of every even numbered year after the expiration date, through December 31st of the subsequent odd numbered year/next expiration date), except as indicated below.

(b) Assisted Living Community Administrators and Personal Care Home Administrators - Thirty (30) hours of CE must be obtained within the current two-year active licensure cycle (i.e. between January 1st of every even numbered year after the expiration date, through December 31st of the subsequent odd numbered year/next expiration date), except as indicated below.

(3) It is the responsibility of the licensee to maintain records of CE hours obtained per renewal for a period of three years.

(4) The continuing education requirement for the first renewal of a license which was issued in even numbered years shall be half, or twenty (20) hours for Nursing Home Administrators and fifteen (15) hours for Assisted Living Community Administrators and Personal Care Home Administrators, in any combination of the categories set out in Rules 393-13-.01 and 393-13-.04.

(5) Licensees obtaining initial licensure in odd numbered years shall not be required to obtain any continuing education hours prior to the first renewal cycle. The passing of the qualifying national examination at any time during the biennium shall be equal to twenty (20) hours of continuing education.

Cite as Ga. Comp. R. & Regs. R. 393-5-.01

AUTHORITY: O.C.G.A. §§ 43-1-4**,** 43-1-25**,** 43-27-4**,** 43-27-5**,** 43-27-6**,** 43-27-8**.**

HISTORY: Original Rule entitled "Licenses and Registration Certificates" was filed on December 31, 1969; effective January 19, 1970.

Amended: Rule repealed and a new Rule entitled "Renewal of License" adopted. Filed September 5, 1975; effective September 25, 1975.

Amended: Filed January 17, 1979; effective February 6, 1979.

Amended: Filed January 19, 1984; effective February 8, 1984.

Amended: Filed October 23, 1985; effective November 12, 1985.

Amended: Filed February 25, 1986; effective March 17, 1986.

Amended: Filed December 18, 1986; effective January 7, 1987.

Amended: Filed July 28, 1987; effective August 17, 1987.

Amended: F. May 5, 1989; eff. May 25, 1989.

Repealed: New Rule, same title, adopted. F. Feb. 12, 1991; eff. Mar. 4, 1991.

Amended: F. Dec. 6, 1994; eff. Dec. 26, 1994.

Amended: F. Sept. 25, 1995; eff. Oct. 15, 1995.

Repealed: New Rule of same title adopted. F. Jan. 2, 2004; eff. Jan. 22, 2004.

Repealed: New Rule of same title adopted. F. Dec. 11, 2007; eff. Dec. 31, 2007.

Amended: New title "Renewal of License. Amended." F. Apr. 29, 2016; eff. May 19, 2016.

Note: Correction of non-substantive typographical error in Rule History only, "**Amended:** F. Apr. 29, 2016; eff. May 19, 2016." corrected to "**Amended:** New title "Renewal of License. Amended." F. Apr. 29, 2016; eff. May 19, 2016." to cite title change omitted in 2016. Effective March 25, 2021.

Amended: New title "Renewal of License." F. Mar. 5, 2021; eff. Mar. 25, 2021.

393-5-.02 Late Renewal and Late Re-Approvals

(1) Each Administrator license will expire and must be renewed by December 31st of odd numbered years.

An Administrator license not renewed by December 31st of odd numbered year will be considered a late renewal until January 31st of the following even numbered year by the payment of the current renewal fee, plus an additional 50% of the renewal fee. Late renewal applications must be accompanied by proof that all CE requirements have been met for the biennium.

(2) Each Preceptor and/or Training site Board approval will expire and must be reapproved by December 31 of odd numbered years. A Preceptor and/or Training Site not reapproved by December 31st of odd numbered years will be considered a late reapproval until January 31st of the following even numbered year by the payment of the current reapproval administrative fee, plus an additional 50% of the reapproval administrative fee.

(3) An individual may NOT practice as an administrator, or provide preceptor services and/or provide a training site for AITs, if the administrator license has not been renewed, or the preceptor and/or training site reapproved, by the expiration of the late renewal period.

Cite as Ga. Comp. R. & Regs. R. 393-5-.02

AUTHORITY: O.C.G.A. §§ 43-1-4**,** 43-1-24**,** 43-1-25**,** 43-27-5**,** 43-27-6**,** 43-27-8**,** 50-13-3**.**

HISTORY: Original Rule entitled "Delinquent Licenses" adopted. F. Sept. 5, 1975; eff. Sept. 25, 1975.

Repealed: New Rule entitled "Inactive Status of License" adopted. F. Feb. 25, 1986; eff. Mar. 17, 1986.

Repealed: New Rule entitled "Licensure Display" adopted. F. Nov. 2, 1987; eff. Nov. 22, 1987.

Repealed: New Rule of same title adopted. F. Feb. 12, 1991; eff. Mar. 4, 1991.

Repealed: F. Jan. 9, 1997; eff. Jan. 29, 1997.

Amended: New Rule entitled "Licensure by Reinstatement" adopted. F. Mar. 19, 2003; eff. Apr. 8, 2003.

Repealed: New Rule entitled "Late Renewal" adopted. F. Dec. 11, 2007; eff. Dec. 31, 2007.

Repealed: New Rule entitled "Late Renewal and Late Re-Approvals" adopted. F. Jul. 2, 2013; eff. Jul. 22, 2013.

Amended: F. Mar. 5, 2021; eff. Mar. 25, 2021.

393-5-.03 License Reinstatement

(1) Failure to renew a license within one (1) month of its expiration date shall have the same effect as a surrender or revocation.

(2) Reinstatement shall be at the discretion of the Board.

(3) In order to be considered for the reinstatement of a surrendered or revoked license, the applicant must submit a completed reinstatement application, pay the required fee and meet one of the following criteria:

(a) If an Administrator license has been lapsed for two (2) years or less from the date of expiration, the applicant for reinstatement must provide certificates of completion for the same amount of continuing education hours required for biennial license renewal as outlined in Rule Chapter 393-13. Hours must have been obtained within the two years preceding the date of the application.

(b) If the license has been lapsed for more than two (2) years, but less than five (5) years from the date of expiration, the applicant must provide certificates of completion for twice the amount of continuing education hours required for biennial license renewal as outlined in Rule Chapter 393-13. Hours must have been obtained within the two years preceding the date of the application.

(c) If the license has been lapsed for five (5) or more years from date of expiration, the applicant must provide verification of having retaken and passed the qualifying NAB exam, or another board recognized written or oral examination, within one year of the date of the application.

(d) If an applicant for reinstatement has been practicing as a Nursing Home Administrator in another state or jurisdiction, and holds a current unencumbered license, for a period of at least two (2) years preceding the date of the reinstatement application, the applicant must provide a current, official verification of licensure from the state or jurisdictions licensing authority, and certificates of completion of forty (40) contact hours or 4.0 CEUs directly related to the practice of Nursing Home Administrator within two (2) years preceding the date of the application as outlined in Rule Chapter 393-13.

(e) If an applicant for reinstatement has been practicing as a Personal Care Home Administrator or Assisted Living Community Administrator in another state or jurisdiction, and holds a current unencumbered license, if that state requires licensure, for a period of at least two (2) years preceding the date of the reinstatement application, the applicant must provide a current, official verification of licensure from the state or jurisdictions licensing authority, and certificates of completion of thirty (30) contact hours or 3.0 CEUs directly related to the practice of Long-Term Care Facility Administration within two (2) years preceding the date of the application as outlined in Rule Chapter 393-13.

(4) The continuing education requirement for the first renewal of licenses which were reinstated in even numbered years shall be half the amount of continuing education hours required for biennial license renewal as outlined in Rule Chapter 393-13, in any combination of the categories set out in Rule Chapter 393-13.

(5) Reinstated licenses issued in odd numbered years shall not be required to obtain any continuing education hours prior to the first renewal cycle.

(6) A surrendered or revoked license, due to other factors not related to allowing a license to expire, is subject to reinstatement at the discretion of the Board. The Board may restore or reissue a license and as a condition thereof may impose any disciplinary action.

Cite as Ga. Comp. R. & Regs. R. 393-5-.03

AUTHORITY: O.C.G.A. §§ 43-1-4**,** 43-1-24**,** 43-1-25**,** 43-27-4**,** 43-27-5**,** 43-27-6**,** 43-27-8**,** 43-27-9**.**

HISTORY: Original Rule entitled "Licensure Display" adopted. F. Feb. 25, 1986; eff. Mar. 17, 1986.

Repealed: F. Nov. 2, 1987; eff. Nov. 22, 1987.

Amended: New Rule entitled "Reinstatement" adopted. F. Dec. 11, 2007; eff. Dec. 31, 2007.

Repealed: New Rule of same title adopted. F. Aug. 7, 2009; eff. Aug. 27, 2009.

Repealed: New Rule entitled "License Reinstatement" adopted. F. Jul. 2, 2013; eff. Jul. 22, 2013.

Amended: New title "License Reinstatement. Amended." F. Apr. 29, 2016; eff. May 19, 2016.

Note: Correction of non-substantive typographical error in Rule History only, "**Amended:** F. Apr. 29, 2016; eff. May 19, 2016." corrected to "**Amended:** New title "License Reinstatement. Amended." F. Apr. 29, 2016; eff. May 19, 2016." to cite title change omitted in 2016. Effective March 25, 2021.

Amended: New title "License Reinstatement." F. Mar. 5, 2021; eff. Mar. 25, 2021.

Department 393. RULES OF GEORGIA STATE BOARD OF LONG-TERM CARE FACILITY ADMINISTRATORS

Chapter 393-6. DISCIPLINARY ACTION

393-6-.01 Grounds for Disciplinary Action

After notice and a hearing in accordance with the Georgia Administrative Procedure Act, as amended, the Board may discipline a nursing home administrator, personal care home administrator, or assisted living community administrator upon evidence that the administrator has:

(a) violated any of the provisions of the law pertaining to the licensing of nursing home administrators, personal care home administrators, or assisted living community administrators or the rules and regulations of the Board pertaining thereto;

(b) been convicted of a crime involving moral turpitude;

(c) practiced fraud, deceit, or misrepresentation in securing or procuring a nursing home administrator license, a personal care home administrators license, or an assisted living community administrators license;

(d) is incompetent to engage in the practice of Long-Term Care Facility administration or to act as a nursing home administrator, personal care home administrator, or assisted living community administrator;

(e) committed acts of misconduct including fraud, deceit or misrepresentation in the operation of a Long-Term Care Facility under his/her jurisdiction;

(f) displayed an inability to practice a business or profession with reasonable skill and safety to the public or has become unable to practice the licensed business or profession with reasonable skill and safety to the public by reason of illness, use of alcohol, drugs, narcotics, chemicals, or any other type of material;

(g) practiced without a current valid license;

(h) wrongfully transferred or surrendered possession, either temporarily or permanently, his/her license or certificate to any other person;

(i) paid, given, has caused to be paid or given or offered to pay or to give to any person a commission or other valuable consideration for the solicitation or procurement, either directly or indirectly, of Long-Term Care Facility patronage;

(j) been guilty of fraudulent, misleading or deceptive advertising;

(k) falsely impersonated another licensee;

(l) failed to exercise a professional regard for the safety, health and life of the patient;

(m) willfully permitted unauthorized disclosure of information relating to a patient or his records; or

(n) discriminated in respect to patients, employees, or staff on account of race, religion, color, national origin or sex.

Cite as Ga. Comp. R. & Regs. R. 393-6-.01

AUTHORITY: O.C.G.A. §§ 43-1-19**,** 43-1-24**,** 43-1-25**,** 43-27-4**,** 43-27-5**,** 43-27-6**,** 43-27-11**,** 50-13-3**.**

HISTORY: Original Rule entitled "Evidence" adopted. F. Dec. 31, 1969; eff. Jan. 19, 1970.

Repealed: New Rule entitled "Grounds for Disciplinary Action" adopted. F. Sept. 5, 1975; eff. Sept. 25, 1975.

Repealed: New Rule of same title adopted. F. Dec. 11, 2007; eff. Dec. 31, 2007.

Amended: F. Mar. 5, 2021; eff. Mar. 25, 2021.

393-6-.02 Disciplinary Actions

(1) When the Board finds that any administrator should be disciplined in accordance with these rules and regulations, the Board may take any one or more of the following actions:

(a) administer a public or private reprimand which may include a fine, but a private reprimand shall not be disclosed to any person except the administrator; or

(b) suspend the administrator's license for an indefinite period; or

(c) revoke the administrator's license; or

(d) condition the penalty upon the administrator's submission to the care, counseling, or treatment of physicians or other professional persons, and the completion of such care, counseling, or treatment, as directed by the Board.

(2) In addition to and in conjunction with the foregoing actions, the Board may make a finding adverse to the administrator and impose judgment and penalty that may include a fine for each violation of a law, rule, or regulation relating to the licensed business or profession, but suspend enforcement thereof and place the administrator on probation, which probation may be vacated upon noncompliance with such reasonable terms as the Board may impose.

Cite as Ga. Comp. R. & Regs. R. 393-6-.02

AUTHORITY: O.C.G.A. §§ 43-1-19**,** 43-1-25**,** 43-27-4**,** 43-27-5**,** 43-27-6**,** 43-27-11**,** 50-13-3**.**

HISTORY: Original Rule entitled "Disciplinary Actions" adopted. F. Sept. 5, 1975; eff. Sept. 25, 1975.

Repealed: New Rule of same title adopted. F. Dec. 11, 2007; eff. Dec. 31, 2007.

Amended: F. Mar. 5, 2021; eff. Mar. 25, 2021.

Department 393. RULES OF GEORGIA STATE BOARD OF LONG-TERM CARE FACILITY ADMINISTRATORS

Chapter 393-9. RECIPROCITY

393-9-.01 Application by Reciprocity

(1) Licensure by reciprocity refers to licensure for applicants who hold a current Nursing Home Administrators, Personal Care Home Administrator, or Assisted Living Community Administrator license in other states and are applying for consideration of licensure in Georgia as a Nursing Home Administrator, Personal Care Home Administrator, or Assisted Living Community Administrator.

(2) The Reciprocity application and other Board forms are available on the Board web site.

(3) The Board may in its discretion deny licensure to an applicant who has had disciplinary action taken against him or her by any licensing authority or professional organization, or whose record reflects any other matter that puts in question his or her competency to be a Nursing Home Administrator, Personal Care Home Administrator, or Assisted Living Community Administrator.

Cite as Ga. Comp. R. & Regs. R. 393-9-.01

AUTHORITY: O.C.G.A. §§ 43-1-19**,** 43-1-25**,** 43-27-4**,** 43-27-5**,** 43-27-6**,** 43-27-7**.**

HISTORY: Original Rule entitled "Application by Reciprocity" adopted. F. Sept. 5, 1975; eff. Sept. 25, 1975.

Amended: F. Jan. 19, 1984; eff. Feb. 8, 1984.

Amended: F. Dec. 18, 1986; eff. Jan. 7, 1987.

Repealed: New Rule of same title adopted. F. Apr. 11, 1988; eff. May 1, 1988.

Amended: F. Mar. 9, 1994; eff. Mar. 29, 1984.

Repealed: New Rule of same title adopted. F. Jan. 9, 1997. eff. Jan. 29, 1997.

Amended: F. June 10, 2002; eff. June 30, 2002.

Repealed: New Rule entitled "Application by Endorsement" adopted. F. Dec. 11, 2007; eff. Dec. 31, 2007.

Amended: New title "Application by Reciprocity. Amended." F. Apr. 29, 2016; eff. May 19, 2016.

Amended: F. Feb. 14, 2019; eff. Mar. 6, 2019.

Amended: New title "Application by Reciprocity." F. Mar. 5, 2021; eff. Mar. 25, 2021.

393-9-.02 Qualifications of Nursing Home Administrator Applicants by Reciprocity

(1) Licensure in Georgia by Reciprocity may be granted to a Nursing Home Administrator who is at least 21 years of age, of reputable and responsible character, and a citizen of the United States or a qualified alien under the Federal Immigration and Naturalization Act, and be lawfully present in the United States, and must satisfy the following requirements:

(a) Applicants must submit to the Board an Application by Reciprocity, the fee, Affidavit of Applicant and shall cause verification of a current, unencumbered, nursing home administrator's license be sent directly to the Georgia Board. In addition, include a verification of licensure from every other state or jurisdiction in which the licensee has ever held a license, whether active or not.

(b) Applicants must have taken and passed the Nursing Home Administration national examination administered by the National Association of Long Term Care Administrator Boards (NAB) or a board recognized predecessor examination.

(c) Applicants for licensure by reciprocity must meet all licensure requirements that are substantially equivalent to those required in this state.

(2) The Board may in its discretion deny licensure to an applicant who has had disciplinary action taken against him or her by any licensing authority or professional organization, or whose record reflects any other matter that puts in question his or her competency to be a Nursing Home Administrator.

Cite as Ga. Comp. R. & Regs. R. 393-9-.02

AUTHORITY: O.C.G.A. §§ 43-1-7**,** 43-1-10**,** 43-1-19**,** 43-1-25**,** 43-27-4**,** 43-27-5**,** 43-27-6**,** 43-27-7**,** 50-36-1**.**

HISTORY: Original Rule entitled "Provisional License" adopted. F. Jan. 9, 1997; eff. Jan. 29, 1997.

Repealed: F. June 10, 2002; eff. June 30, 2002.

Amended: New Rule entitled "Qualifications of Applicants" adopted. F. Dec. 11, 2007; eff. Dec. 31, 2007.

Amended: New title "Qualifications of Applicants by Reciprocity. Amended." F. Apr. 29, 2016; eff. May 19, 2016.

Amended: F. Mar. 19, 2019; eff. Apr. 8, 2019.

Amended: New title "Qualifications of Nursing Home Administrator Applicants by Reciprocity." F. Mar. 5, 2021; eff. Mar. 25, 2021.

393-9-.03 Military Spouses and Veterans Licensure by Reciprocity

(1) **Definitions.** As used in this Rule:

(a) "AIT" means "administrator in training" as used in Chapter 393-4 of the Board Rules.

(b) "Long-Term Care Facility Administrator" means a person licensed to practice as a nursing home administrator, personal care home administrator, or assisted living community administrator under the provisions of O.C.G.A. Chapter 27 of Title 43.

(c) "Military" means the United States armed forces, including the National Guard.

(d) "Military spouse" means the spouse of a service member or transitioning service member.

(e) "Service member" means an active or reserve member of the United States armed forces, including the National Guard.

(f) "Transitioning service member" means a member of the military on active duty status or on separation leave who is within 24 months of retirement or 12 months of separation.

(2) Licensure by reciprocity. A service member, transitioning service member, or military spouse may qualify for a license by reciprocity where the applicant:

(a) holds a license in good standing from another state for which the training, experience, and testing substantially meet or exceed the requirements to obtain a license as a Long-Term Care Facility Administrator in Georgia; and

(b) has submitted to the Board a verification of licensure from the appropriate licensing agency of another state showing that the applicant's active license is in good standing in that state; and

(c) has submitted documentation satisfactory to the Board which verifies the applicant's status as a service member, transition service member, or military spouse as defined in O.C.G.A. § 43-1-34; and

(d) has submitted a completed application for licensure by reciprocity on a form approved by the Board, has paid the required fee, and has requested licensure by reciprocity.

(3) AIT training and experience. In connection with an application for licensure, an applicant who is a service member, transitioning service member, or military spouse may submit documentation reflecting the applicant's training and experience obtained while the applicant, or the applicant's spouse, was in the military as provided by O.C.G.A. § 43-1-34. To satisfy the requirements for licensure in Georgia, such military training and experience shall:

(a) substantially meet or exceed the training and experience requirements for licensure as provided in the Board's rules and statute; and

(b) have been obtained in an appropriately certified, registered, or licensed nursing home facility under the supervision of a licensed nursing home administrator; and

(c) be documented to the satisfaction of the Board for the purposes of licensure.

Cite as Ga. Comp. R. & Regs. R. 393-9-.03

AUTHORITY: O.C.G.A. §§ 43-1-34**,** 43-27-1**,** 43-27-5**,** 43-27-6**,** 43-27-7**.**

HISTORY: Original Rule entitled "Military Spouses and Veterans Licensure by Reciprocity" adopted. F. May 31, 2017; eff. June 20, 2017.

Amended: F. Mar. 5, 2021; eff. Mar. 25, 2021.

393-9-.04 Qualifications of Personal Care Home Administrator and Assisted Living Community Administrator Applicants by Reciprocity

(1) Licensure in Georgia by Reciprocity may be granted to a Personal Care Home Administrator or Assisted Living Community Administrator who is at least 21 years of age, of reputable and responsible character, and a citizen of the United States or a qualified alien under the Federal Immigration and Naturalization Act, and be lawfully present in the United States, and must satisfy the following requirements:

(a) Applicants must submit to the Board an Application by Reciprocity, the fee, Affidavit of Applicant and shall cause verification of a current, unencumbered, administrator's license be sent directly to the Georgia Board. In addition, applicants shall include a verification of licensure from every other state or jurisdiction in which the licensee has ever held a license, whether active or not.

(b) Applicants must have taken and passed the Nursing Home Administration national examination or Resident Care/Assisted Living national examination administered by the National Association of Long Term Care Administrator Boards (NAB), a board recognized predecessor examination, or another board recognized written or oral examination.

(c) Applicants for licensure by reciprocity must meet all licensure requirements that are substantially equivalent to those required in this state.

(d) Applicants coming from a state that does not require licensure are not eligible for reciprocity and are required to apply for initial licensure by exam.

(2) The Board may in its discretion deny licensure to an applicant who has had disciplinary action taken against him or her by any licensing authority or professional organization, or whose record reflects any other matter that puts in question his or her competency to be a Personal Care Home Administrator or Assisted Living Community Administrator.

Cite as Ga. Comp. R. & Regs. R. 393-9-.04

AUTHORITY: O.C.G.A. §§ 43-1-7**,** 43-1-10**,** 43-1-19**,** 43-1-25**,** 43-27-4**,** 43-27-5**,** 43-27-6**,** 43-27-7**,** 50-36-1**.**

HISTORY: Original Rule entitled "Qualifications of Personal Care Home Administrator and Assisted Living Community Administrator Applicants by Reciprocity" adopted. F. Mar. 5, 2021; eff. Mar. 25, 2021.

Department 393. RULES OF GEORGIA STATE BOARD OF LONG-TERM CARE FACILITY ADMINISTRATORS

Chapter 393-10. PROCEDURAL RULES

393-10-.01 Procedural Rules

The Georgia State Board of Long-Term Care Facility Administrators hereby adopts by reference as its permanent rules Chapters 295-3 through 295-13, and any future amendments thereto, Rules and Regulations of the Office of the Division Director, Professional Licensing Boards Division, relating to procedures for Hearings before the several Professional Licensing Boards.

Cite as Ga. Comp. R. & Regs. R. 393-10-.01

AUTHORITY: O.C.G.A. §§ 43-1-25**,** 43-27-5**.**

HISTORY: Original Rule entitled "Procedural Rules" adopted. F. Nov. 17, 1977; eff. Dec. 7, 1977.

Repealed: New Rule of same title adopted. F. Aug. 23, 2001; eff. Sept. 12, 2001.

Amended: F. Mar. 5, 2021; eff. Mar. 25, 2021.

Department 393. RULES OF GEORGIA STATE BOARD OF LONG-TERM CARE FACILITY ADMINISTRATORS

Chapter 393-12. CHANGE OF STATUS

393-12-.01 Change from Active to Inactive

Any licensee who holds a current license and who is not practicing as an administrator may request the Board to place that license into an "inactive status" upon written application to the Board and payment of a non-refundable inactive status application fee. See fee schedule. The Board, in its sole discretion, may grant or deny the request for inactive status. Any licensee whose license is on inactive status may not engage in the practice of Long-Term Care Facility Administration.

Cite as Ga. Comp. R. & Regs. R. 393-12-.01

AUTHORITY: O.C.G.A. §§ 43-1-10**,** 43-1-19**,** 43-1-22**,** 43-1-25**,** 43-27-4**,** 43-27-5**,** 43-27-6**,** 50-13-3**.**

HISTORY: Original Rule entitled "Change of Name" adopted. F. Nov. 2, 1987; eff. Nov. 22, 1987.

Repealed: New Rule of same title adopted. F. July 30, 1992; eff. Aug. 19, 1992.

Repealed: New Rule entitled "Change from Active to Inactive" adopted. F. Dec. 11, 2007; eff. Dec. 31, 2007.

Amended: F. Mar. 5, 2021; eff. Mar. 25, 2021.

393-12-.02 Change from Inactive to Active

In order to reactivate an inactive license, submit the appropriate application, forms, and fee to the Board.

(a) If a license is inactive for twelve (12) months to twenty-four months (24), the applicant must submit certificates of completion for the same amount of continuing education hours required for biennial license renewal as outlined in Rule Chapter 393-13, obtained since the Board's last renewal period.

(b) If a license is inactive for twenty-five (25) months to thirty-six (36) months, the applicant must submit certificates of completion for twice the amount of continuing education hours required for biennial license renewal as outlined in Rule Chapter 393-13, obtained since the Board's last renewal period.

(c) If the license has been inactive more than 36 months, the applicant must meet current application requirements and either submit twice the amount of continuing education hours required for biennial license renewal as outlined in Rule Chapter 393-13, obtained since the Board's last renewal period, OR take and pass the qualifying NAB exam, or another board recognized written or oral examination.

(d) If the inactive licensee holds an active license in another state and has been employed for at least one year as an Administrator prior to the date of the application, the applicant must submit verification of an active, current license from the state or jurisdiction in which the license is held.

Cite as Ga. Comp. R. & Regs. R. 393-12-.02

AUTHORITY: O.C.G.A. §§ 43-1-10**,** 43-1-19**,** 43-1-22**,** 43-1-25**,** 43-27-4**,** 43-27-5**,** 43-27-6**,** 43-27-8**,** 50-13-3**.**

HISTORY: Original Rule entitled "Change of Address" adopted. F. Nov. 2, 1987; eff. Nov. 22, 1987.

Repealed: New Rule of same title adopted. F. July 30, 1992; eff. Aug. 19, 1992.

Repealed: New Rule entitled "Change from Inactive to Active" adopted. F. Dec. 11, 2007; eff. Dec. 31, 2007.

Amended: F. Sept. 12, 2011; eff. Oct. 2, 2011.

Amended: F. Mar. 5, 2021; eff. Mar. 25, 2021.

Department 393. RULES OF GEORGIA STATE BOARD OF LONG-TERM CARE FACILITY ADMINISTRATORS

Chapter 393-13. CONTINUING EDUCATION

393-13-.01 Continuing Education Requirements for Nursing Home Administrators

(1) Forty (40) clock hours of continuing education are required biennially to renew a license.

(2) A minimum of six (6) of the forty (40) hours shall be on Professional Development/Integrity and/or Resident Rights.

(3) The remaining thirty-four (34) clock hours shall be in any or all of the following health care subject areas:

(a) Resident Centered Care and Quality of Life to include Abuse, Neglect, Exploitation and Investigation;

(b) Gerontology and Special Populations;

(c) Human Resources;

(d) Finance/Financial Practice/Financial Integrity;

(e) Leadership Skills and Management;

(f) Ancillary Services Management/Development;

(g) Regulatory Compliance;

(h) Quality Assurance;

(i) Emergency Preparedness training;

(j) Infection Control;

(k) Alzheimers and Dementia Care.

(4) Online study from a NAB/N.C.E.R.S. approved course is allowed (see #5).

(5) No more than twenty (20) clock hours of the total 40 clock hours may be obtained online. At least 20 clock hours must be obtained in-person or via live webinar that is instructor led with student interaction, where student participation is monitored and verified.

(6) The continuing education requirement for the first renewal of a license which was issued in even numbered years shall be twenty (20) hours in any combination of the categories set out above. Licensees obtaining licensure in odd numbered years shall not be required to obtain any continuing education hours prior to the first renewal cycle. The passing of the qualifying national examination at any time during the biennium shall be equal to twenty (20) hours of continuing education.

(7) Continuing education hours must be obtained within the two year biennium renewal cycle (i.e. January 1st of Even Numbered years and December 31st of Odd Numbered years).

Cite as Ga. Comp. R. & Regs. R. 393-13-.01

AUTHORITY: O.C.G.A. §§ 43-1-24**,** 43-1-25**,** 43-27-4**,** 43-27-5**,** 43-27-6**,** 43-27-8**.**

HISTORY: Original Rule entitled "Requirements" adopted. F. Apr. 27, 1990; eff. May 17, 1990.

Amended: F. Jul. 30, 1992; eff. Aug. 19, 1992.

Amended: F. Feb. 26, 1993; eff. Mar. 18, 1993.

Amended: F. Mar. 9, 1994; eff. Mar. 29, 1994.

Amended: F. Jun. 10, 1994; eff. Jun. 30, 1994.

Amended: F. Sept. 25, 1995; eff. Oct. 15, 1995.

Amended: Oct. 20, 1995; eff. Nov. 9, 1995.

Amended: F. Aug. 21, 1996; eff. Sept. 11, 1996.

Amended: F. Jan. 9, 1997; eff Jan. 29, 1997.

Repealed: New Rule of same title adopted. F. Jan. 6, 2004; eff. Jan 26, 2004.

Repealed: New Rule of same title adopted. F. Dec. 11, 2007; eff. Dec. 31, 2007.

Amended: F. Aug. 7, 2009; eff. Aug. 27, 2009.

Repealed: New Rule entitled "Continuing Education Requirements. Amended." adopted. F. Apr. 3, 2012; eff. Apr 23, 2012.

Amended: F. Jul. 2, 2013; eff. Jul. 22, 2013.

Amended: F. Aug. 9, 2019; eff. Aug. 29, 2019.

Amended: New title "Continuing Education Requirements for Nursing Home Administrators." F. Mar. 5, 2021; eff. Mar. 25, 2021.

393-13-.02 Continuing Education Sources

(1) Continuing education hours may be obtained by participation in activities sponsored, co-sponsored or approved by any of the below listed sources. The licensee's certificate of attendance must document the number of clock hours of educational content in each activity and indicate the source of education (NAB, N.C.E.R.S, etc.) or it may not be accepted as proof of completion. Continuing education hours must be obtained within the two (2) year biennium renewal cycle (i.e. January 1st of Even Numbered years and December 31st of Odd Numbered years).

(a) Professional trade associations in long-term care or out of State Long-Term Care Facility Administrator Licensing Boards, OR,

(b) Educational institutions accredited by a regional body recognized by the Council on Post Secondary Accreditation. The educational institution shall certify the number of clock hours of educational content in each activity. One semester hour of course credit shall be equivalent to fifteen (15) clock hours of continuing education, and one (1) academic quarter hour of course credit shall be equivalent to ten (10) clock hours of continuing education, OR,

(c) National Continuing Education Review Services (N.C.E.R.S.) of the National Association of Long Term Care Administrator Boards (NAB). Continuing education hours may be obtained by participating in programs approved by N.C.E.R.S., OR,

(d) Government Agencies, Educational Institutions and Hospitals. Continuing education hours may be obtained by participating in "in-service" training, courses or workshops pertaining to long term care sponsored by federal, state or local government agencies, educational institutions and licensed hospitals.

(2) Educational hours earned from an unapproved source shall NOT be counted toward the required continuing education hours for any two year biennium renewal cycle.

Cite as Ga. Comp. R. & Regs. R. 393-13-.02

AUTHORITY: O.C.G.A. §§ 43-1-24**,** 43-1-25**,** 43-27-4**,** 43-27-5**,** 43-27-8**.**

HISTORY: Original Rule entitled "Sources" adopted. F. Apr. 27, 1990; eff. May 17, 1990.

Amended: F. Mar. 9, 1994; eff. Mar. 29, 1994.

Amended: F. Sept. 17, 2004; eff. Oct. 7, 2004.

Repealed: New Rule of same title adopted. F. Dec. 11, 2007; eff. Dec. 31, 2007.

Repealed: New Rule entitled "Continuing Education Sources. Amended." F. Apr. 3, 2012; eff. Apr. 23, 2012.

Note: Correction of non-substantive typographical error in Rule History on SOS Rules and Regulations website. "**Repealed:** New Rule entitled "Continuing Education Requirements. Amended." F. Apr. 3, 2012; eff. Apr. 23, 2012." corrected to "**Repealed:** New Rule entitled "Continuing Education Sources. Amended." F. Apr. 3, 2012; eff. Apr. 23, 2012." Effective August 29, 2019.

Amended: F. Aug. 9, 2019; eff. Aug. 29, 2019.

Amended: F. Mar. 5, 2021; eff. Mar. 25, 2021.

393-13-.03 Continuing Education Documentation

(1) Each licensee shall maintain for three (3) years documentation of the continuing education activities they complete. The Board will not maintain continuing education files for licensees. Do NOT request providers submit your certificates of attendance directly to the Board. It is the licensee's responsibility to maintain the documents.

(2) Each licensee shall attest to having met the continuing education requirement on their biennial license renewal. Documentation of these activities should be retained by the licensee and not sent to the Board unless the licensee is selected by the Board for a continuing education audit.

(3) The Board shall randomly audit licenses during each renewal period. If a licensee is audited, the licensee shall submit a Board approved CE Report or the transcript to the Board for approval no later than December 31st of the odd numbered renewal year (expiration date). All continuing education certificates of attendance or listings must have been obtained within the two year biennium renewal cycle (i.e. January 1st of Even Numbered years and December 31st of Odd Numbered years) or it may not be accepted as proof of completion.

(4) If the audited licensee fails to submit the required CE documentation to the Board for review, licensee may be subject to Board discipline and the license will not be renewed until the Board has received and approved the required CE documentation.

(5) In the event the Board determines that any or all of the clock hours which the licensee obtained failed to meet the subject area requirements set out in the Rules of the Georgia State Board of Long-Term Care Facility Administrators, Chapter 393-13-.01, the Board shall notify the licensee, by e-mail or in writing, of the failure. The license will then be placed in "Renewal Pending" status.

(6) The licensee may correct any identified deficient continuing education hours by the end of the license late renewal period referenced in Rule 393-5-.02. Failure to correct the deficiency within this period shall result in disciplinary action in accordance with Board rules, Chapter 393-5.

Cite as Ga. Comp. R. & Regs. R. 393-13-.03

AUTHORITY: O.C.G.A. §§ 43-1-24**,** 43-1-25**,** 43-27-4**,** 43-27-5**,** 43-27-8**.**

HISTORY: Original Rule entitled "Documentation" adopted. F. Apr. 27, 1990; eff. May 17, 1990.

Amended: F. Sept. 25, 1995; eff. Oct. 15, 1995.

Amended: F. Aug. 21, 1996; eff. Sept. 11, 1996.

Amended: F. Sept. 17, 2004; eff. Oct. 7, 2004.

Repealed: New Rule of same title adopted. F. Dec. 11, 2007; eff. Dec. 31, 2007.

Repealed: New Rule entitled "Continuing Education Documentation. Amended." adopted. F. Apr. 3, 2012; eff. Apr. 23, 2012.

Amended: F. Aug. 9, 2019; eff. Aug. 29, 2019.

Amended: F. Mar. 5, 2021; eff. Mar. 25, 2021.

393-13-.04 Continuing Education Requirements for Personal Care Home Administrators and Assisted Living Community Administrators

(1) Thirty (30) clock hours of continuing education are required biennially to renew a license.

(2) Clock hours shall be in any or all of the following health care subject areas:

(a) Resident Centered Care and Quality of Life to include Abuse, Neglect, Exploitation and Investigation;

(b) Gerontology and Special Populations;

(c) Human Resources;

(d) Finance/Financial Practice/Financial Integrity;

(e) Leadership Skills and Management;

(f) Ancillary Services Management/Development;

(g) Regulatory Compliance;

(h) Quality Assurance;

(i) Emergency Preparedness training;

(j) Infection Control;

(k) Proxy Caregiver/Medication Management;

(l) Alzheimer’s and Dementia Care.

(3) Online study from a NAB/N.C.E.R.S. approved course is allowed (see #4).

(4) No more than fifteen (15) clock hours of the total thirty (30) clock hours may be obtained online. At least fifteen (15) of the required thirty (30) clock hours must be obtained in-person or via live webinar that is instructor led with student interaction, where student participation is monitored and verified.

(5) The continuing education requirement for the first renewal of a license which was issued in even numbered years shall be fifteen (15) hours in any combination of the categories set out above. Licensees obtaining licensure in odd numbered years shall not be required to obtain any continuing education hours prior to the first renewal cycle. The passing of the qualifying national examination at any time during the biennium shall be equal to twenty (20) hours of continuing education.

(6) Continuing education hours must be obtained within the two year biennium renewal cycle (i.e. January 1st of Even Numbered years and December 31st of Odd Numbered years).

(7) If an individual holds more than one license issued by this Board they are required to complete the highest number of continuing education hours which are required to renew any one license. A maximum of 40 clock hours total may be required.

Cite as Ga. Comp. R. & Regs. R. 393-13-.04

AUTHORITY: O.C.G.A. §§ 43-1-24**,** 43-1-25**,** 43-27-4**,** 43-27-5**,** 43-27-6**,** 43-27-8**.**

HISTORY: Original Rule entitled "Certificate of Attendance" adopted. F. Apr. 27, 1990; eff. May 17, 1990.

Repealed: F. Dec. 11, 2007; eff. Dec. 31, 2007.

Adopted: New Rule entitled "Continuing Education Requirements for Personal Care Home Administrators and Assisted Living Community Administrators." F. Mar. 5, 2021; eff. Mar. 25, 2021.

Department 505. PROFESSIONAL STANDARDS COMMISSION

Chapter 505-2. CERTIFICATION

505-2-.24 Special Georgia Requirements

(1) **Summary:** All individuals applying for certification in Georgia shall satisfy certain Special Georgia Requirements. These requirements are in the areas of: content knowledge; standards of conduct; special education; ethics assessments; and content pedagogy assessments. Special Georgia Requirements, with the exception of the standards of conduct, do not apply to individuals holding Georgia Life certificates.

(2) **Content Knowledge Assessment(s).** An individual applying for certification in Georgia must pass or meet exemption criteria for content knowledge assessment(s) appropriate to the field of certification and/or any other assessment(s) as required by the Georgia Professional Standards Commission (GaPSC) (See GaPSC Rule 505-2-.26 **CERTIFICATION AND LICENSURE ASSESSMENTS)**. GACE content assessments have two passing levels: Induction and Professional. All passing scores earned on GACE assessments will be treated as Professional level scores even if the official score report reflects an Induction level score. As of October 15, 2011, Georgia educators who complete out-of-state programs and/or pass out-of-state assessments leading to certification in a new field in another state must pass the appropriate GACE content assessment for Georgia certification in the new field.

(a) An individual may be exempt from passing the GACE content knowledge assessment(s) in the following scenarios:

1. Out-of-state certificate holders applying for initial Georgia certification who satisfy the out-of-state certificate and experience criteria outlined in paragraph (6) below.

2. Out-of-state professional certificate holders applying for initial Georgia certification who have passed the out-of-state content assessment required for issuance of the out-of-state certificate field.

3. Individuals holding valid National Board for Professional Teaching Standards (NBPTS) certification in the specific field, with the exception of the Middle Grades Generalist Field. The NBPTS Middle Grades Generalist field does not exempt the GACE Middle Grades content assessments.

4. Individuals seeking certification in a field for which the GaPSC has not adopted a content assessment.

(b) Completers of GaPSC-approved programs who have satisfied all program requirements with the exception of the content knowledge assessment(s), and have obtained a valid recommendation from the educator preparation provider (EPP) may be issued a one (1)-year Induction or Non-Renewable Professional certificate, as appropriate, at the request of an employing Georgia local unit of administration (LUA).

(c) Additional information on the required content assessment(s) is available on the GaPSC web site at https://www.gapsc.com/EducatorPreparation/Assessment/Testing.aspx.

(3) **Standards of Conduct.** An individual applying for certification in Georgia must comply with the ethical standards of the profession. An FBI background check (fingerprint) is required for employment in Georgia public schools and a Georgia criminal history check is required every five (5) years for certificate renewal. In addition, individuals applying for certification must respond to background check questions on the application form. Individuals applying for or already holding certification who violate standards of conduct may be subject to a GaPSC investigation, which could involve certificate denial, suspension or revocation (See GaPSC Rule 505-2-.30 **REFERRAL TO EDUCATOR ETHICS DIVISION)**.

(4) **Special Education.**

(a) A GaPSC-accepted course in the identification and education of children who have special educational needs is required for issuance of a certificate in any of the following:

1. Teaching fields.

2. Leadership fields.

3. Service fields of Media Specialist and School Counseling.

(b) The following certificates may be issued prior to completion of the special education requirement (course must be satisfied to renew or convert the certificate):

1. Initial Professional or Induction certificate issued based on interstate reciprocity.

2. Initial Induction certificate issued based on completion of an out-of-state approved educator preparation program with student teaching outside of Georgia.

3. Initial Professional certificate in School Counseling based on holding an acceptable valid state license issued by the Georgia Secretary of State Office.

(c) The course may be satisfied by the following:

1. Earning three (3) semester hours of college credit with a grade of "B" or better

(i) The grade requirement of "B" or better is effective July 1, 2019, for courses completed on or after this date.

2. Earning five (5) Georgia professional learning units satisfied through a Georgia public school system or RESA.

3. Holding valid National Board for Professional Teaching Standards (NBPTS) certification.

4. Meeting out-of-state experience exemption outlined in section (6) below.

(5) **Ethics Assessment.**

(a) A passing score on the GACE Educator Ethics Assessment is required for the following:

1. Issuance of a Pre-Service certificate.

2. Issuance of an initial Clearance certificate to individuals who are not required to hold an in-field certificate as outlined in GaPSC Rule 505-2-.42 CLEARANCE CERTIFICATE.

3. Issuance of a Provisional teaching certificate.

4. Issuance of an Induction certificate in a teaching field.

5. Issuance of the International Exchange certificate.

6. Conversion of a Provisional or Induction Pathway 4 teaching certificate to a Professional certificate.

7. Issuance of an initial three-year Permit.

8. Conversion to the five-year Permit if initial Permit was issued on or after October 15, 2017.

(b) A passing score on the GACE Ethics for Educational Leadership is required for the following:

1. Issuance of a Non-Renewable certificate in educational leadership for completion of an approved program.

2. Issuance of an initial professional certificate in educational leadership.

3. Issuance of an initial Superintendent Permit

4. Conversion to the five-year Permit if initial Permit was issued on or after October 15, 2017.

(6) **Out-of-State Experience Exemption**. Veteran out-of-state educators moving into Georgia may be eligible to exempt all Special Georgia Requirements except the Standards of Conduct. To be eligible, the applicant must hold a valid out-of-state certificate and have a minimum of five (5) full years of successful education experience as defined in section (5) of GaPSC Rule 505-2-.25 **EXPERIENCE REQUIREMENTS**.

Cite as Ga. Comp. R. & Regs. R. 505-2-.24

AUTHORITY: O.C.G.A. § 20-2-200**.**

HISTORY: Original Rule entitled "Application for Renewals/Duplicates, Name Changes, PB Certificates" adopted. F. Dec. 18, 1991; eff. Jan. 7, 1992.

Repealed: Rule Reserved. F. Dec. 16, 1992; eff. July 1, 1993, as specified by the Agency.

Amended: New Rule entitled "International Exchange Certificate" adopted. F. Apr. 7, 2000; eff. May 1, 2000, as specified by the Agency.

Amended: F. May 10, 2001; eff. June 1, 2001, as specified by Agency.

Repealed: New Rule entitled "Standard Renewal Requirements" adopted. F. Feb. 20, 2004; eff. Mar. 15, 2004, as specified by the Agency.

Amended: F. Aug. 20, 2004; eff. Sept. 15, 2004, as specified by the Agency.

Amended: F. June 23, 2005; eff. July 15, 2005, as specified by the Agency.

Amended: F. Feb. 10, 2006; eff. Mar. 15, 2006, as specified by the Agency.

Amended: F. Aug. 3, 2006, eff. Sept. 1, 2006, as specified by the Agency.

Amended: F. Apr. 16, 2008; eff. May 15, 2008, as specified by the Agency.

Repealed: New Rule entitled "Standard Renewal Credit" adopted. F. Aug. 15, 2008; eff. Sept. 15, 2008, as specified by the Agency.

Amended: F. Apr. 20, 2009; eff. May 15, 2009, as specified by the Agency.

Repealed: New Rule of same title adopted. F. June 7, 2010; eff. July 15, 2010, as specified by the Agency.

Repealed: New Rule entitled "Special Georgia Requirements" adopted. F. June 11, 2014; eff. July 1, 2014, as specified by the Agency.

Amended: F. Jun. 13, 2014; eff. Jul. 3, 2014.

Amended: F. Dec. 22, 2014; eff. Jan. 15, 2015, as specified by the Agency.

Amended: F. Mar. 25, 2015; eff. Apr. 15, 2015, as specified by the Agency.

Amended: F. Apr. 13, 2016; eff. Apr. 15, 2016, as specified by the Agency.

Amended: F. May 25, 2016; eff. June 15, 2016, as specified by the Agency.

Amended: F. June 8, 2017; eff. July 1, 2017, as specified by the Agency.

Amended: F. Oct. 3, 2018; eff. Oct. 15, 2018, as specified by the Agency.

Repealed: New Rule of same title adopted. F. Dec. 13, 2019; eff. Jan. 1, 2020, as specified by the Agency.

Repealed: New Rule of same title adopted. F. June 11, 2020; eff. July 1, 2020, as specified by the Agency.

Amended: F. Mar. 26, 2021; eff. Apr. 15, 2021, as specified by the Agency.

505-2-.36 Renewal Requirements

(1) **Summary.**

Georgia's renewable certificates are the Standard Professional, Performance-Based Professional, Advanced Professional, Lead Professional and Life certificates. Renewable licenses are Adjunct, Educational Interpreter, Non-Instructional Aide, Paraprofessional and Support Personnel. These certificates and licenses are valid for a five (5)-year period (except for the Life certificate), during which time the requirements outlined below must be met unless the most recent certificate or license issued is exempt from professional learning as outlined in section (8)(a) below.

(2) **Educators who work in schools, agencies, or other education organizations in Georgia.**

(a) Individuals employed by a Georgia LUA: certificate and license holders who are employed by a Georgia LUA in a position requiring certification at the time of renewal application must satisfy professional learning requirements as outlined below, with the exceptions noted in section 3 below. Employing LUAs shall document fulfillment of these requirements and verify their completion as part of the renewal application package:

1. A criminal record check, unless exempted in section (4) below.

2. Engaging in professional learning on a continuing basis by fully participating in the LUA's professional learning community as documented by the individual's supervisor and described in GaPSC Guidelines accompanying this rule.

3. The following individuals employed by a Georgia LUA in a position requiring certification may renew their certificates without meeting the professional learning requirements outlined in this section:

(i) Individuals who also hold valid National Board for Professional Teaching Standards (NBPTS) certification at the time of renewal in a field comparable to one held on their Georgia educator certificate.

(ii) Individuals certified in the service fields of Speech and Language Pathology, Audiology, School Psychology, School Counseling and School Social Work who meet optional requirements associated with GaPSC-accepted state or national credentials as outlined in the appropriate GaPSC field rules as long as this is approved by the supervisor as appropriate for professional learning.

(iii) Non-Instructional Aide, Support Personnel License, and Adjunct License holders shall complete professional learning as determined by the employing LUA.

(b) Faculty of Georgia colleges/universities, and individuals who are no longer employed by Georgia LUAs in positions that require certification but are employed in Georgia education agencies or organizations, may renew certificates as described in Section (2)(a)(2) above.

(c) Individuals employed at Georgia private schools may renew their certificates by completing the requirements outlined in Section (2)(a) above or by completing the requirements outlined in Section (3) below.

(3) **Educators who are not employed in schools, agencies, or other education organizations in Georgia.**

(a) Renewal requirements for certificates that are currently valid must have been completed during the validity period established on the certificate. Renewal requirements for expired certificates must have been completed within the five (5)-year period preceding the date of renewal application. Individuals may qualify for renewal through completion of one of the following:

1. For individuals who have been employed by a Georgia LUA in a position requiring certification for at least one (1) school year during the most recent validity period of their certificate, and within five (5) years of the date of renewal application, submit documentation of completion of the professional learning requirements outlined in Section (a) above during at least one (1) qualifying year of employment beginning with the 2017-18 school year.

2. Complete any combination of the following:

(i) Six (6) semester hours of college course work.

(I) College course work must be earned at an institution that meets the accreditation standards outlined in GaPSC Rule 505-2-.31 **GaPSC-ACCEPTED ACCREDITATION; VALIDATION OF NON-ACCREDITED DEGREES**. Final course grades must be "B" or better. Developmental/Remedial studies courses and course work that is audited and/or exempted without credit shall not be accepted.

(ii) Ten (10) Georgia Professional Learning Units (PLUs).

(I) PLUs must be awarded by a State of Georgia education agency, a Regional Educational Services Agency (RESA), a Georgia LUA or a GaPSC-approved college or university. Only LUAs offering GAPSC-approved programs may offer PLUs for renewal purposes.

(iii) Ten (10) Continuing Education Units (CEUs).

(I) CEUs must be issued by a GaPSC-accepted accredited college or university or a provider authorized by the International Association for Continuing Education and Training (IACET). Ten (10) contact hours are the equivalent of one (1) CEU. These credits must be reflected on CEU transcripts or "certificates of completion" which include the name of the organization issuing the credits, the name of the educator receiving the credits, the title of the course, the date the course began and date of completion, and the number of CEUs being authorized.

(iv) One hundred (100) hours BFTS-approved trainings.

(I) BFTS-approved trainings may be found on the BFTS website at http://decal.ga.gov.

(v) Hold valid National Board for Professional Teaching Standards (NBPTS) certification at the time of renewal in a field comparable to one held on their Georgia educator certificate.

3. Have at least one (1) year of successful educator experience, as outlined in GaPSC Rule 505-2-.25 **EXPERIENCE REQUIREMENTS**, while working in another state on a valid certificate issued by that state, or while working outside of the United States on a valid Georgia certificate in a position in which it is utilized.

4. For individuals certified in the service fields of Speech and Language Pathology, Audiology, School Psychology, School Counseling and School Social Work, meet optional requirements associated with GaPSC-accepted state or national credentials as outlined in the appropriate GaPSC field rules.

5. Re-take and pass the content assessment approved by the GaPSC at the time of renewal for the field(s) being renewed. This is not an option to renew fields for which there is no GaPSC-approved content assessment at the time of renewal. Only the field(s) for which the educator passes the appropriate assessment will be renewed.

(4) **Criminal Record Check.**

(a) The employing Georgia LUA is responsible for ensuring that the appropriate criminal record check is completed during the school year in which the certificate expires pursuant to O.C.G.A. 20-2-211.1 and GaPSC Rule 505-2-.42 **CLEARANCE CERTIFICATE**. The employer may apply for renewal after the criminal record check or FBI background check has been completed. Criminal record checks are subject to the following:

1. A criminal record check shall be required for renewal of all certificates held by educators employed in a Georgia LUA including state chartered special schools and commission charter schools. This requirement does not apply to employees of state agencies.

2. If the individual has not had an FBI background check (fingerprint) while employed in the present public school system, the FBI background check (fingerprint) is required for renewal. If the individual has satisfactorily completed an FBI background check (fingerprint) at the present public school system of employment, then a Georgia criminal history check will satisfy the renewal requirement. The Georgia criminal history check will satisfy the renewal requirement for private school, chartered special school, and commission charter school employees that do not require certification.

3. A satisfactory criminal record check shall be denoted by the issuance of a Clearance certificate upon the request of an employing Georgia LUA with the exception of private schools (see GaPSC Rule 505-2-.42 **CLEARANCE CERTIFICATE**).

(b) If an individual is not employed in a Georgia public school, private school, chartered special school, or commission charter school at the time of renewal, the individual is exempt from the background check requirement until such time as Georgia public or private school employment is resumed.

(5) **Renewal Cycle.**

(a) Georgia certificates usually have a beginning date of July 1 and an ending date of June 30. Valid certificates may be renewed from December 1 of the calendar year preceding the ending validity date to June 30 of the calendar year in which the certificate expires.

1. To renew an expired certificate, the individual must meet all applicable renewal requirements outlined above, including any remaining Special Georgia Requirements, and submit an application packet with appropriate documentation to the GaPSC. Specific renewal application procedures for educators may be found on the GaPSC web site at www.gapsc.com.

2. At the request of an employing Georgia LUA, an individual who meets the applicable requirements outlined above but has not met applicable professional learning requirements may be issued a one (1)-year Non-Renewable Professional certificate to allow the individual time to complete all remaining renewal requirements.

3. Individuals who hold more than one certificate field and/or type will be eligible to renew all certificate fields/types by completion of the renewal requirements for the field of placement during the renewal period.

(6) **Renewal Application Process.**

(a) Renewal of certificates held by individuals employed by a Georgia LUA in a position requiring GaPSC certification must be submitted electronically by the employing LUA according to procedures established by the GaPSC. Information about the online procedures is available to authorized school system personnel on the GaPSC web site at www.gapsc.org.

(b) Individuals not employed by a Georgia LUA in a position requiring GaPSC certification may apply for renewal according to procedures outlined on www.gapsc.com.

(7) **Restrictions.**

(a) An individual who has received any combination of two (2) Unsatisfactory, Ineffective or Needs Development annual performance evaluations during the previous five (5)-year validity cycle that have not been satisfactorily remediated by the employing Georgia LUA shall not be entitled to any certificate except for a Waiver in any field (See GaPSC Rule 505-2-.43 **ANNUAL PERFORMANCE EVALUATION**). Waiver certificates must be requested by an employing Georgia LUA and are issued at the discretion of the GaPSC (See GaPSC Rule 505-2-.13 **WAIVER CERTIFICATE**).

(b) Performance-Based Professional certificate requirements:

1. To maintain the Performance-Based designation an individual must earn a minimum of three (3) Proficient or Exemplary annual performance ratings on the Teacher Assessment on Performance Standards (TAPS) component of the statewide evaluation system, Teacher Keys Effectiveness System (TKES), within five (5) years of the renewal date.

(i) Performance-Based Professional certificates will be renewed as Standard Professional certificates if the educator has earned fewer than three (3) Proficient or Exemplary TAPS performance ratings within five (5) years of the renewal date, and has no more than one (1) unremediated unsatisfactory, needs development, or ineffective performance rating(s).

(c) Advanced Professional and Lead Professional certificates may be renewed as Standard Professional certificates if the educator received one (1) annual performance rating below the Satisfactory or Proficient level during the most recent five (5) year validity period of the certificate.

(d) Standard Professional certificates shall be renewed as Standard Professional should an educator not meet experience and/or other requirements for Performance-Based, Advanced, or Lead certification.

(8) **Renewal Credit Exemption.**

(a) For individuals whose most recent renewable certification and/or licenses expired between June 30, 2011, and June 30, 2017, renewal credit is not required for reinstatement. This does not apply to any outstanding Special Georgia Requirements (See GaPSC Rule 505-2-.24 **SPECIAL GEORGIA REQUIREMENTS**).

(9) **Retired Georgia Educators.**

(a) Retired Georgia Educators, as verified by the Teachers Retirement System (TRS) or other retirement systems utilized by private Georgia LUAs, who do not wish to meet the renewal requirements may apply for a Retired Educator Certificate as outlined in GaPSC Rule 505-2-.44 **RETIRED EDUACATOR CERTIFICATE**.

Cite as Ga. Comp. R. & Regs. R. 505-2-.36

AUTHORITY: O.C.G.A. § 20-2-200**.**

HISTORY: Original Rule entitled "Validation of Degree" adopted. F. Dec. 18, 1991; eff. Jan. 7, 1992.

Repealed: New Rule entitled "Validation of Degree; Acceptable Credit and Degrees" adopted. F. Dec. 16, 1992; eff. Jul. 1, 1993, as specified by the Agency.

Amended: F. Jun. 24, 1997; eff. Jul. 14, 1997.

Repealed: New Rule entitled "Substitute Teachers" adopted. F. Feb. 20, 2004; eff. Mar. 15, 2004, as specified by the Agency.

Amended: F. Oct. 22, 2004; eff. Nov. 15, 2004, as specified by the Agency.

Repealed: New Rule entitled "Renewal Requirements" adopted. F. Jun. 11, 2014; eff. Jul. 1, 2014, as specified by the Agency.

Amended: F. Sep. 24, 2015; eff. Oct. 15, 2015, as specified by the Agency.

Amended: F. June 8, 2017; eff. July 1, 2017, as specified by the Agency.

Amended: F. June 26, 2019; eff. July 1, 2019, as specified by the Agency.

Repealed: New Rule of same title adopted. F. Dec. 13, 2019; eff. Jan. 1, 2020, as specified by the Agency.

Amended: F. Mar. 26, 2021; eff. Apr. 15, 2021, as specified by the Agency.

505-2-.37 [Repealed]

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AUTHORITY: O.C.G.A. § 20-2-200**.**

HISTORY: Original Rule entitled "Acceptable Credit and Degrees" adopted. F. Dec. 18, 1991; eff. Jan. 7, 1992.

Repealed: New Rule entitled "Recency-of-Study Requirement" adopted. F. Dec. 16, 1992; eff. Jul. 1, 1993, as specified by the Agency.

Amended: F. Apr. 29, 1994; eff. Jul. 1, 1994, as specified by the Agency.

Amended: F. Jun. 19, 1995; eff. Jul. 9, 1995.

Amended: F. Jun. 21, 1996; eff. Jul. 11, 1996.

Repealed: New Rule entitled "Experience Requirements for Certification Purposes" adopted. F. Feb. 20, 2004; eff. Mar. 15, 2004, as specified by the Agency.

Amended: F. June 23, 2005; eff. July 15, 2005, as specified by the Agency.

Amended: F. June 18, 2007; eff. July 15, 2007, as specified by the Agency.

Repealed: New Rule entitled "Certificate Extension for Active Military Duty" adopted. F. Jun. 11, 2014; eff. Jul. 1, 2014, as specified by the Agency.

Repealed: F. Mar. 26, 2021; eff. Apr. 15, 2021, as specified by the Agency.

505-2-.177 Special Education Preschool Ages 3-5 Endorsement

(1) **Eligibility Requirements.**

(a) To be eligible for the professional Special Education Preschool Ages 3-5 Endorsement the applicant must hold a level four (4) or higher renewable professional certificate in Birth Through Kindergarten, Elementary Education, or a Special Education field. The applicant must also complete other requirements outlined in GaPSC Rule 505-2-.14 ENDORSEMENTS.

(b) To be eligible for the Three (3)-Year Induction Special Education Preschool Ages 3-5 Endorsement the applicant must hold a level four (4) or higher Five (5)-Year Induction certificate in Birth Through Kindergarten, Elementary Education, or a Special Education field. The applicant must also complete other requirements outlined in GaPSC Rule 505-2-.14 **ENDORSEMENTS**.

(2) **In-Field Statement (See GaPSC Rule** 505-2-.40 **IN-FIELD ASSIGNMENT).** An individual with the Special Education Preschool Ages 3-5 endorsement is in-field to work with students ages 3-5 (below K) with disabilities other than visually and hearing impaired, under the following conditions: The educator may work collaboratively with a content area teacher of record in all content subjects. To serve as a teacher of record, the educator may teach only the content subjects of his/her base certificate field(s). If a preschool child is visually or hearing impaired, resource/consultative services must be provided by appropriately certified personnel associated with the sensory impairment.

(a) Each state-approved curriculum course, with specified certificate fields that are designated as in-field, may be found under Certification/Curriculum Assignment Policies (CAPS) on the GaPSC web site at www.gapsc.com.

Cite as Ga. Comp. R. & Regs. R. 505-2-.177

AUTHORITY: O.C.G.A. § 20-2-200**.**

HISTORY: Original Rule entitled "Special Education Preschool Ages 3-5 Endorsement" adopted. F. Jun. 11, 2014; eff. Jul. 1, 2014, as specified by the Agency.

Amended: F. June 26, 2019; eff. July 1, 2019, as specified by the Agency.

Amended: F. Mar. 26, 2021; eff. Apr. 15, 2021, as specified by the Agency.

505-2-.187 Dramatic Writing Micro-Endorsement

(1) **Eligibility Requirements.**

(a) Professional Certificate (See GaPSC Rule 505-2-.05 **PROFESSIONAL CERTIFICATE**).

1. Hold a level four (4) or higher renewable professional certificate in Drama P-12, English 6-12 or Audio/Video Technology & Film 6-12.

2. Satisfy of one of the following options:

(i) Complete course work from a GaPSC-accepted accredited institution that covers writing pedagogy/methodology, playwriting, and screen/TV writing.

(ii) Complete the Georgia Film Academy Dramatic Writing Film, Television, and Theatre I training.

(iii) Complete the Dramatic Writing I Educator Course offered by the Georgia Department of Education.

3. Meet Standards of Conduct.

4. Request the certificate following procedures outlined in GaPSC Rule 505-2-.27 **CERTIFICATION APPLICATION PROCEDURES**.

(b) Non-Renewable Professional Certificate (See GaPSC Rule 505-2-.09 **NON-RENEWABLE PROFESSIONAL CERTIFICATE**).

1. A Three (3)-Year Non-Renewable Professional Dramatic Writing Micro-Endorsement may be issued at the request of a Georgia local unit of administration (LUA) to an individual holding a valid level four (4) or higher professional certificate in Drama P-12, English 6-12 or Audio/Video Technology & Film 6-12 in order to meet requirements outlined in section (1)(a) above.

(c) Induction Certificate (See GaPSC Rule 505-2-.04 **INDUCTION CERTIFICATE**).

1. A Three (3)-Year Induction Dramatic Writing Micro-Endorsement may be issued at the request of a Georgia local unit of administration (LUA) to an individual holding a valid level four (4) or higher Five (5)-Year Induction certificate in Drama P-12, English 6-12 or Audio/Video Technology & Film 6-12 in order to meet requirements outlined in section (1)(a) above.

(d) Permit (See GaPSC Rule 505-2-.10 **PERMIT CERTIFICATE**).

1. Hold a valid Permit certificate in Drama P-12 or Audio/Video Technology & Film 6-12.

2. Satisfy of one of the following options:

(i) Complete course work from a GaPSC-accepted accredited institution that covers writing pedagogy/methodology, playwriting, and screen/TV writing.

(ii) Complete the Georgia Film Academy Dramatic Writing Film, Television, and Theatre I training.

(iii) Complete the Dramatic Writing I Educator Course offered by the Georgia Department of Education.

3. Meet Standards of Conduct.

4. Have the Permit requested by the employing Georgia local unit of administration (LUA) following procedures outlined in GaPSC Rule 505-2-.27 **CERTIFICATION APPLICATION PROCEDURES**.

(e) Adjunct License (See GaPSC Rule 505-2-.15 **ADJUNCT LICENSE**).

1. Hold a valid Adjunct license in Drama P-12, English 6-12 or Audio/Video Technology & Film 6-12.

2. Satisfy of one of the following options:

(i) Complete course work from a GaPSC-accepted accredited institution that covers writing pedagogy/methodology, playwriting, and screen/TV writing.

(ii) Complete the Georgia Film Academy Dramatic Writing Film, Television, and Theatre I training.

(iii) Complete the Dramatic Writing I Educator Course offered by the Georgia Department of Education.

3. Meet Standards of Conduct.

4. Have the Adjunct License requested by the employing Georgia local unit of administration (LUA) following procedures outlined in GaPSC Rule 505-2-.27 CERTIFICATION APPLICATION PROCEDURES.

(2) **In-Field Statement (See GaPSC Rule 505-2-.40 IN-FIELD ASSIGNMENT).**

(a) An individual with the Dramatic Writing Micro-Endorsement is in-field to teach dramatic writing courses when combined with the Drama P-12, English 6-12, or Audio/Video Technology & Film 6-12 teaching certificate.

(b) Each state-approved curriculum course, with specified certificate fields that are designated as in-field, may be found under Certification/Curriculum Assignment Policies (CAPS) on the GaPSC web site at www.gapsc.com.

Cite as Ga. Comp. R. & Regs. R. 505-2-.187

AUTHORITY: O.C.G.A. § 20-2-200**.**

HISTORY: Original Rule entitled "Dramatic Writing Micro-Endorsement" adopted. F. Oct. 3, 2018; eff. Oct. 15, 2018, as specified by the Agency.

Repealed: New Rule with same titled adopted. F. Mar. 26, 2021; eff. Apr. 15, 2021, as specified by the Agency.

Department 505. PROFESSIONAL STANDARDS COMMISSION

Chapter 505-6. PROFESSIONAL PRACTICES

505-6-.01 The Code of Ethics for Educators

(1) **Introduction.** The Code of Ethics for Educators defines the professional behavior of educators in Georgia and serves as a guide to ethical conduct. The Georgia Professional Standards Commission has adopted standards that represent the conduct generally accepted by the education profession. The code defines unethical conduct justifying disciplinary sanction and provides guidance for protecting the health, safety and general welfare of students and educators, and assuring the citizens of Georgia a degree of accountability within the education profession.

(2) **Definitions.**

(a) "Breach of contract" occurs when an educator fails to honor a signed contract for employment with a school/school system by resigning in a manner that does not meet the guidelines established by the Georgia Professional Standards Commission.

(b) "Certificate" refers to any teaching, service, or leadership certificate, license, or permit issued by authority of the Georgia Professional Standards Commission.

(c) "Child endangerment" occurs when an educator disregards a substantial and/or unjustifiable risk of bodily harm to the student.

(d) "Educator" is a teacher, school or school system administrator, or other education personnel who holds a certificate issued by the Georgia Professional Standards Commission and persons who have applied for but have not yet received a certificate. For the purposes of the Code of Ethics for Educators, "educator" also refers to paraprofessionals, aides, and substitute teachers.

(e) "Student" is any individual enrolled in the state's public or private schools from preschool through grade 12 or any individual under the age of 18. For the purposes of the Code of Ethics for Educators, the enrollment period for a graduating student ends on August 31 of the school year of graduation.

(f) "Complaint" is any written and signed statement from a local board, the state board, or one or more individual residents of this state filed with the Georgia Professional Standards Commission alleging that an educator has breached one or more of the standards in the Code of Ethics for Educators. A "complaint" will be deemed a request to investigate.

(g) "Revocation" is the permanent invalidation of any certificate held by the educator.

(h) "Denial" is the refusal to grant initial certification to an applicant for a certificate.

(i) "Suspension" is the temporary invalidation of any certificate for a period of time specified by the Georgia Professional Standards Commission.

(j) "Reprimand" admonishes the certificate holder for his or her conduct. The reprimand cautions that further unethical conduct will lead to a more severe action.

(k) "Warning" warns the certificate holder that his or her conduct is unethical. The warning cautions that further unethical conduct will lead to a more severe action.

(l) "Monitoring" is the quarterly appraisal of the educator's conduct by the Georgia Professional Standards Commission through contact with the educator and his or her employer. As a condition of monitoring, an educator

may be required to submit a criminal background check (GCIC). The Commission specifies the length of the monitoring period.

(m) "No Probable Cause" is a determination by the Georgia Professional Standards Commission that, after a preliminary investigation, either no further action need be taken or no cause exists to recommend disciplinary action.

(3) **Standards.**

(a) Standard 1: **Legal Compliance** - An educator shall abide by federal, state, and local laws and statutes. Unethical conduct includes but is not limited to the commission or conviction of a felony or of any crime involving moral turpitude; of any other criminal offense involving the manufacture, distribution, trafficking, sale, or possession of a controlled substance or marijuana as provided for in Chapter 13 of Title 16; or of any other sexual offense as provided for in Code Section 16-6-1 through 16-6-17, 16-6-20, 16-6-22.2, or 16-12-100; or any other laws applicable to the profession. As used herein, conviction includes a finding or verdict of guilty, or a plea of nolo contendere, regardless of whether an appeal of the conviction has been sought; a situation where first offender treatment without adjudication of guilt pursuant to the charge was granted; and a situation where an adjudication of guilt or sentence was otherwise withheld or not entered on the charge or the charge was otherwise disposed of in a similar manner in any jurisdiction.

(b) Standard 2: **Conduct with Students** - An educator shall always maintain a professional relationship with all students, both in and outside the classroom. Unethical conduct includes but is not limited to:

1. Committing any act of child abuse, including physical and verbal abuse;

2. Committing any act of cruelty to children or any act of child endangerment;

3. Committing any sexual act with a student or soliciting such from a student;

4. Engaging in or permitting harassment of or misconduct toward a student;

5. Soliciting, encouraging, or consummating an inappropriate written, verbal, electronic, or physical relationship with a student;

6. Furnishing tobacco, alcohol, or illegal/unauthorized drugs to any student; or

7. Failing to prevent the use of alcohol or illegal or unauthorized drugs by students under the educator's supervision (including but not limited to at the educator's residence or any other private setting).

(c) Standard 3: **Alcohol or Drugs** - An educator shall refrain from the use of alcohol or illegal or unauthorized drugs during the course of professional practice. Unethical conduct includes but is not limited to:

1. Being on school or Local Unit of Administration (LUA)/school district premises or at a school or a LUA/school district-related activity while under the influence of, possessing, using, or consuming illegal or unauthorized drugs; and

2. Being on school or LUA/school district premises or at a school-related activity involving students while under the influence of, possessing, or consuming alcohol. A school-related activity includes, but is not limited to, any activity sponsored by the school or school system (booster clubs, parent-teacher organizations, or any activity designed to enhance the school curriculum i.e. Foreign Language trips, etc.).

(i) For the purposes of this standard, an educator shall be considered "under the influence" if the educator exhibits one or more of the following indicators, including but not limited to: slurred speech, enlarged pupils, bloodshot eyes, general personality changes, lack of physical coordination, poor motor skills, memory problems, concentration problems, etc.

(d) Standard 4: **Honesty** - An educator shall exemplify honesty and integrity in the course of professional practice. Unethical conduct includes but is not limited to, falsifying, misrepresenting, or omitting:

1. Professional qualifications, criminal history, college or staff development credit and/or degrees, academic award, and employment history;

2. Information submitted to federal, state, local school districts and other governmental agencies;

3. Information regarding the evaluation of students and/or personnel;

4. Reasons for absences or leaves;

5. Information submitted in the course of an official inquiry/investigation; and

6. Information submitted in the course of professional practice.

(e) Standard 5: **Public Funds and Property** - An educator entrusted with public funds and property shall honor that trust with a high level of honesty, accuracy, and responsibility. Unethical conduct includes but is not limited to:

1. Misusing public or school-related funds;

2. Failing to account for funds collected from students or parents;

3. Submitting fraudulent requests or documentation for reimbursement of expenses or for pay (including fraudulent or purchased degrees, documents, or coursework);

4. Co-mingling public or school-related funds with personal funds or checking accounts; and

5. Using school or school district property without the approval of the local board of education/governing board or authorized designee.

(f) Standard 6: **Remunerative Conduct** - An educator shall maintain integrity with students, colleagues, parents, patrons, or businesses when accepting gifts, gratuities, favors, and additional compensation. Unethical conduct includes but is not limited to:

1. Soliciting students or parents of students, or school or LUA/school district personnel, to purchase equipment, supplies, or services from the educator or to participate in activities that financially benefit the educator unless approved by the local board of education/governing board or authorized designee;

2. Accepting gifts from vendors or potential vendors for personal use or gain where there may be the appearance of a conflict of interest;

3. Tutoring students assigned to the educator for remuneration unless approved by the local board of education/governing board or authorized designee; and

4. Coaching, instructing, promoting athletic camps, summer leagues, etc. that involves students in an educator's school system and from whom the educator receives remuneration unless approved by the local board of education/governing board or authorized designee. These types of activities must be in compliance with all rules and regulations of the Georgia High School Association.

(g) Standard 7: **Confidential Information** - An educator shall comply with state and federal laws and state school board policies relating to the confidentiality of student and personnel records, standardized test material and other information. Unethical conduct includes but is not limited to:

1. Sharing of confidential information concerning student academic and disciplinary records, health and medical information, family status and/or income, and assessment/testing results unless disclosure is required or permitted by law;

2. Sharing of confidential information restricted by state or federal law;

3. Violation of confidentiality agreements related to standardized testing including copying or teaching identified test items, publishing or distributing test items or answers, discussing test items, violating local school system or state directions for the use of tests or test items, etc.; and

4. Violation of other confidentiality agreements required by state or local policy.

(h) Standard 8: **Required Reports** - An educator shall file with the Georgia Professional Standards Commission reports of a breach of one or more of the standards in the Code of Ethics for Educators, child abuse (O.C.G.A. § 19-7-5), or any other required report. Unethical conduct includes but is not limited to:

1. Failure to report all requested information on documents required by the Commission when applying for or renewing any certificate with the Commission;

2. Failure to make a required report of a violation of one or more standards of the Code of Ethics for educators of which they have personal knowledge as soon as possible but no later than ninety (90) days from the date the educator became aware of an alleged breach unless the law or local procedures require reporting sooner; and

3. Failure to make a required report of any violation of state or federal law as soon as possible but no later than ninety (90) days from the date the educator became aware of an alleged breach unless the law or local procedures require reporting sooner. These reports include but are not limited to: murder, voluntary manslaughter, aggravated assault, aggravated battery, kidnapping, any sexual offense, any sexual exploitation of a minor, any offense involving a controlled substance and any abuse of a child if an educator has reasonable cause to believe that a child has been abused.

(i) Standard 9: **Professional Conduct** - An educator shall demonstrate conduct that follows generally recognized professional standards and preserves the dignity and integrity of the education profession. Unethical conduct includes but is not limited to a resignation that would equate to a breach of contract; any conduct that impairs and/or diminishes the certificate holder's ability to function professionally in his or her employment position; or behavior or conduct that is detrimental to the health, welfare, discipline, or morals of students.

(j) Standard 10: **Testing** - An educator shall administer state-mandated assessments fairly and ethically. Unethical conduct includes but is not limited to:

1. Committing any act that breaches Test Security; and

2. Compromising the integrity of the assessment.

(4) **Reporting.**

(a) Educators are required to report a breach of one or more of the Standards in the Code of Ethics for Educators as soon as possible but no later than ninety (90) days from the date the educator became aware of an alleged breach unless the law or local procedures require reporting sooner. Educators should be aware of legal requirements and local policies and procedures for reporting unethical conduct. Complaints filed with the Georgia Professional Standards Commission must be in writing and must be signed by the complainant (parent, educator, or other LUA/school district employee, etc.).

(b) The Commission notifies local and state officials of all disciplinary actions. In addition, suspensions and revocations are reported to national officials, including the NASDTEC Clearinghouse.

(5) **Disciplinary Action.**

(a) The Georgia Professional Standards Commission is authorized to suspend, revoke, or deny certificates, to issue a reprimand or warning, or to monitor the educator's conduct and performance after an investigation is held and notice and opportunity for a hearing are provided to the certificate holder. Any of the following grounds shall be considered cause for disciplinary action against the educator:

1. Unethical conduct as outlined in The Code of Ethics for Educators, Standards 1-10 (GaPSC Rule 505-6-.01);

2. Disciplinary action against a certificate on grounds consistent with those specified in the Code of Ethics for Educators, Standards 1-10 (GaPSC Rule 505-6-.01);

3. Order from a court of competent jurisdiction or a request from the Department of Human Resources that the certificate should be suspended or the application for certification should be denied for non-payment of child support (O.C.G.A. § 19-6-28.1 and § 19-11-9.3);

4. Notification from the Georgia Higher Education Assistance Corporation that the educator is in default and not in satisfactory repayment status on a student loan guaranteed by the Georgia Higher Education Assistance Corporation (O.C.G.A. § 20-3-295);

5. Suspension or revocation of any professional license or certificate;

6. Violation of any other laws and rules applicable to the profession (O.C.G.A. § 16-13-111); and

7. Any other good and sufficient cause that renders an educator unfit for employment as an educator.

(b) An individual whose certificate has been revoked, denied, or suspended may not serve as a volunteer or be employed as an educator, paraprofessional, aide, substitute teacher or, in any other position during the period of his or her revocation, suspension or denial for a violation of The Code of Ethics. The superintendent and the educator designated by the superintendent/Local Board of Education shall be responsible for assuring that an individual whose certificate has been revoked, denied, or suspended is not employed or serving in any capacity in their district. Both the superintendent and the superintendent's designee must hold GaPSC certification. Should the superintendent's certificate be revoked, suspended, or denied, the Board of Education shall be responsible for assuring that the superintendent whose certificate has been revoked, suspended, or denied is not employed or serving in any capacity in their district.

Cite as Ga. Comp. R. & Regs. R. 505-6-.01

AUTHORITY: O.C.G.A. § 20-2-200**.**

HISTORY: Original Rule entitled "The Code of Ethics for Educators" adopted. F. July 10, 2000; eff. Aug. 1, 2000, as specified by the Agency.

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Amended: F. June 27, 2002; eff. Aug. 1, 2002, as specified by the Agency.

Amended: F. Sept. 19, 2002; eff. Oct. 15, 2002, as specified by the Agency.

Amended: F. June 23, 2003; eff. July 15, 2003, as specified by the Agency.

Amended: F. Aug. 20, 2004; eff. Sept. 15, 2004, as specified by the Agency.

Amended: F. July 21, 2005; eff. Aug. 15, 2005, as specified by the Agency.

Amended: F. May 22, 2009; eff. June 15, 2009, as specified by the Agency.

Amended: F. Sept. 18, 2009; eff. Oct. 15, 2009, as specified by the Agency.

Amended: F. Oct. 7, 2014; eff. Oct. 15, 2014, as specified by the Agency.

Amended: F. May 22, 2015; eff. June 15, 2015, as specified by the Agency.

Amended: F. Dec. 20, 2017; eff. Jan. 1, 2018, as specified by the Agency.

Amended: F. Sep. 24, 2019; eff. Oct. 15, 2019, as specified by the Agency.

Amended: F. Mar. 26, 2021; eff. Apr. 15, 2021, as specified by the Agency.

505-6-.02 Procedures for Invalidated or Denied Certification

(1) **Reinstatement of a suspended certificate.**

(a) If the certificate was suspended according to the stipulations of 505-6-.01(5)(a)3. and 4., it will be reinstated automatically when the Commission is notified by the court, DHR, or the Georgia Higher Education Assistance Corporation to do so provided the certificate has not expired during the period of suspension. If the certificate has expired, current applicable GaPSC certification requirements must be met prior to reinstatement.

(b) A suspended certificate is automatically reinstated at the end of the suspension period, provided it did not expire during that time. If the certificate expired during the period of suspension, a new certificate may be secured at the end of the suspension period by making application and by meeting the current applicable certification requirements of the Georgia Professional Standards Commission.

(c) Any person whose certificate has been suspended may petition for early reinstatement of a suspended certificate or for early renewal of an expired certificate by submitting sufficient evidence to the Georgia Professional Standards Commission that the reason or reasons for the suspension have ceased to be a factor in the performance or conduct of the educator seeking reinstatement. The Commission may consider the request based solely upon the written submission of the educator or his/her authorized representative and without conducting an oral hearing. Petitions are not contested matters under the Administrative Procedures Act and; therefore, do not afford educators due process rights.

(2) **Revocation of a certificate is permanent subject to the following provisions:**

(a) Any person whose certificate has been revoked may petition for the right to apply for a new certificate by submitting sufficient evidence to the Georgia Professional Standards Commission that the reason or reasons for the revocation have ceased to be a factor in the performance or conduct of the educator seeking a new certificate. The Commission may consider the request based solely upon the written submission of the educator or his/her authorized representative. This provision does not apply to a person whose case falls under paragraph (2)(c).

(b) A period of three years must elapse from the date of the certificate revocation before a petition to apply for a new certificate will be considered. If the initial petition to apply for a new certificate is denied, any subsequent petition to apply for a new certificate may not be filed earlier than two years from the date of the previous denial. Petitions are not contested matters under the Administrative Procedures Act and; therefore, do not afford educators due process rights. The Georgia Professional Standards Commission reserves the right to consider the time to apply after the initial three-year period on a case-by-case basis. If the Georgia Professional Standards Commission approves the petition to apply for a new certificate, then the individual must satisfy all current certification requirements.

(c) Any person whose certificate was revoked for one of the following reasons shall not be eligible to petition for the right to reapply:

1. Engaging in an inappropriate relationship with a student that included physical contact;

2. Being convicted of, notwithstanding the form of the judgment or withheld judgment, felony cruelty to children;

3. Being convicted of, notwithstanding the form of the judgment or withheld judgment, any misdemeanor or felony sexual act committed against a student; or

4. Providing a controlled substance to a student or engaging in the use of a controlled substance with a student; or

5. Being dishonorably discharged from the United States armed forces for desertion.

(3) **Re-application following the denial of a certificate.**

(a) If an application is denied according to the stipulations of GaPSC Rule 505-6-.01 **THE CODE OF ETHICS FOR EDUCATORS** [(5)(a)3. and 4.], a certificate will automatically be granted upon notification by the court, Department of Human Resources, or the Georgia Higher Education Assistance Corporation to do so provided current certification requirements are met.

(b) Any person whose certificate has been denied may petition for the right to reapply for a certificate by submitting sufficient evidence to the Georgia Professional Standards Commission (GaPSC) that the reason or reasons for the denial have ceased to be a factor in the performance or conduct of the educator seeking a certificate. The Commission may consider the request based solely upon the written submission of the educator or his/her authorized representative and without conducting an oral hearing. If the Commission approves the petition to apply for a certificate, then the individual must satisfy all current certification requirements. This provision does not apply to a person whose case falls under paragraph (3)(d).

(c) If application for a certificate is denied on the same grounds for which a certificate may be revoked or suspended, except under stipulations addressed in GaPSC Rule 505-6-.01 **THE CODE OF ETHICS FOR EDUCATORS** [(5)(a)3. and 4.], any petition to apply for certification will not be considered earlier than two years from the date of the denial. If the initial petition to apply for certification is denied, any subsequent petition may not be filed earlier than one year from the date of the previous denial. Petitions are not contested matters under the Administrative Procedures Act and; therefore, do not afford educators due process rights.

(d) Any person who is convicted of, notwithstanding the form of the judgment or withheld judgment, any of the following offenses shall not be eligible to petition for the right to reapply:

1. Any act that requires an individual's inclusion on the Sex Offender Registry;

2. Any act, other than misdemeanor Vehicular Homicide, that is considered homicide;

3. Any misdemeanor or felony sexual act committed against a student;

4. Any act of enticing, luring, or exploiting a student; or

5. Being dishonorably discharged from the United States armed forces for desertion.

Cite as Ga. Comp. R. & Regs. R. 505-6-.02

AUTHORITY: O.C.G.A. § 20-2-200.

HISTORY: Original Rule entitled "Reinstatement or Renewal of a Suspended or Revoked Certificate" adopted. F. July 10, 2000; eff. Aug. 1, 2000, as specified by the Agency.

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Amended: F. Feb. 27, 2002; eff. Apr. 1, 2002, as specified by the Agency.

Amended: F. Oct. 7, 2014; eff. Oct. 15, 2014, as specified by the Agency.

Repealed: New Rule entitled "Procedures for Invalidated or Denied Certification" adopted. F. Mar. 26, 2021; eff. Apr. 15, 2021, as specified by the Agency.

Department 510. RULES OF STATE BOARD OF EXAMINERS OF PSYCHOLOGISTS

Chapter 510-2. LICENSURE BY EXAMINATION

510-2-.05 Internship and Postdoctoral Supervised Work Experience

(1) **Requirements.** In order to satisfy the experience requirement for licensure the applicant must have completed an internship and a postdoctoral supervised work experience (SWE).

(2) **Definitions.**

(a) An Intern is a person who is engaged in the predoctoral year of applied experience in a psychological internship.

(b) An Internship is an organized, coherent set of training experiences in the specialty/concentration area of the practice of psychology (i.e., clinical, counseling, school, mental retardation/developmental disability or industrial/organizational psychology) that are characterized by greater depth, breadth, duration, frequency, and intensity than practicum training and is either APA or CPA accredited or meets the equivalency criteria set by the Board.

1. An applicant who was enrolled in an APA or CPA approved program prior to May of 2003, and who was a student in good standing, will be deemed to have met the above noted internship requirement, and,

2. Provided the applicant completed/graduated from the program within a seven (7) year period from the date of enrollment.

(c) An Internship Site is a setting in which an internship occurs and is either a hospital, accredited school, university, consulting firm, public agency, public or private organization, or public or private practice.

(d) A Fellow is a person who is engaged in completing a postdoctoral supervised work experience or a post-doctoral fellowship.

(e) A Postdoctoral Supervised Work Experience (SWE) is 1,500 hours of individually supervised experience following the internship and the completion of the doctoral degree.

(f) An Internship or Postdoctoral Supervisor (internship/SWE Supervisor) is a psychologist who oversees an internship or SWE and who meets both of the following requirements below:

1. Possesses current licensure issued by the Georgia Board of Examiners of Psychologists or current licensure issued by a psychology board in another jurisdiction whose standards are not lower than those of Georgia; and

2. Is not currently under the terms of a disciplinary order against the professional license issued by the Georgia Board of Examiners of Psychologists or licensure issued by any other state or jurisdiction.

(g) A Senior Industrial/Organizational (I/O) Psychologist is a person who has earned a Ph.D. in I/O psychology or a related field within the discipline of psychology, and who:

1. Meets the educational requirements for licensure of I/O psychologists; and

2. Has completed five years of independent practice concentrated in one or more of the following domains:

(i) Employee Selection and Placement;

(ii) Performance Management;

(iii) Human Factors and Engineering Psychology;

(iv) Organization Development; and

(v) Training and Development. Fulfillment of this practice requirement shall be documented by three other psychologists, who are licensed and are members of the Society for Industrial and Organizational Psychology, who attest to the nature and extent of the candidate's expertise and work experience, and to the quality of work; and

3. Provides documentation of achievement and competence in the practice of I/O psychology. Fulfillment of this requirement shall be documented by provision of descriptions of three separate and organizationally significant interventions in the domains listed above for which the applicant had primary responsibility for all phases including: problem definition, design, development, implementation, and evaluation. For each intervention, a 1-2 page narrative description must be submitted. The description must include a summary of each phase and the name, address, and telephone number of a person from the client organization whom the Board could contact for additional information, if necessary.

(h) A Non-Licensed I/O Supervisor is a person who has an earned Ph.D. in Industrial/Organizational (I/O) psychology or a related field within the discipline of psychology who is not licensed, but may also qualify by meeting the following requirements:

1. Five years of practice in Industrial/Organizational psychology; and

2. Submission of three references to the Board from other psychologists, attesting to the nature of his or her area of expertise, work experience, and quality of work. At least one reference must be from a psychologist who is a current or former direct supervisor.

(i) A Non-Licensed MR/DD Supervisor is a person who has an earned Ph.D. in mental retardation/ Developmental Disabilities (MR/DD) psychology or a related field within the discipline of psychology but who is not licensed may also qualify by meeting the following requirements:

1. Five years of practice in MR/DD psychology; and

2. Submission of three references to the Board from other psychologists, attesting to the nature of his/her area of expertise, work experience, and quality of his/her work. At least one reference must be from a psychologist who is a current or former direct supervisor.

(j) A Secondary Supervisor is a person who oversees no more than 20% of an internship or SWE. For interns, the secondary supervisor must be affiliated with an internship program. All secondary supervisors must meet the following requirements:

1. Current licensure by the State of Georgia or by a licensing board in another jurisdiction in Psychology, Medicine (Psychiatry, Neurology, or other relevant medical field); and,

2. Pre-approval (in writing) by the primary internship/SWE supervisor.

3. Is not currently under the terms of a disciplinary order against the professional license issued by the Georgia Board of Examiners of Psychologists or licensure issued by any other state or jurisdiction.

(3) Supervisor-Intern/Fellow Relationship.

(a) Supervisory relationships are governed by the Code of Ethics in Chapter 510-4. The internship/SWE supervisor may not be an employee of an agency which is headed by the supervisee, nor be employed by an entity in which the supervisee has an interest.

(b) The internship/SWE supervisor shall not take primary supervisory responsibility for more than three interns or fellows concurrently without Board approval. Industrial/Organizational supervisors are not limited to three interns or fellows, but for each intern or fellow the I/O supervisor must spend a minimum of two supervision hours for each 40 hours the intern or fellow works.

(c) The internship/SWE supervisor shall:

1. Co-sign all written reports of interns or unlicensed fellows;

2. Co-sign insurance claims with the intern or unlicensed fellow;

3. Assure that claims to third-party payers clearly reflect who rendered the service;

4. Assure that the intern or fellow:

(i) Informs clients/patients of the supervisor-intern/fellow relationships; and

(ii) Informs clients/patients that they may confer with the internship or postdoctoral supervisor about any aspect of the services provided.

(4) Internship Requirements.

(a) General Standards: The general standards for an internship will be met when one of the following is fulfilled:

1. Completion of an APA or CPA accredited or Association of Psychology and Internship Centers (APPIC) member internship of at least 2,000 hours; or

2. Completion of a non-APA or non-CPA accredited or APPIC member internship which complies with the following criteria:

(i) The internship must be completed in no less than 11 months and no more than 24 months after its inception. I/O internships must be completed in 48 months. In cases of disability or hardship, the Board, in its sole discretion, may permit exceptions to this requirement.

(ii) The internship consists of 2,000 hours of organized training experiences appropriate to the academic program specialty area.

(iii) The intern must spend at least 500 hours in direct contact with clients/patients. I/O Interns are exempt from this requirement.

(iv) The intern must have completed a minimum of 60 semester hours of graduate course work in psychology prior to the inception of an internship.

(v) Supervised program activities (practica) for which course credit is awarded may not be used to satisfy any internship hours.

(vi) The internship must provide training in a range of assessment and treatment/intervention activities conducted directly with persons or organizations who receive psychological services.

(vii) The administrative director of the internship site or its training director shall, upon request of the Board, furnish a written statement of the internship's goals, its content, and the criteria by which the quality and quantity of the intern's work will be evaluated.

(viii) At least 80% of the internship supervision must be provided by one or more licensed psychologists. Final evaluations by supervisors must indicate satisfactory completion of the internship.

(ix) The intern must use a title which identifies a trainee status, i.e., "intern", or "resident".

(x) Prior to the inception of the internship, the internship supervisor(s), university doctoral program training director or designate and intern must enter into a written internship agreement that specifies the goals and nature of the training experiences. Upon completion of the internship, the intern and internship supervisor(s) must sign the agreement and confirm thereby that the internship has been completed satisfactorily.

3. Applicants who are Senior Industrial/Organizational Psychologists will be deemed to have met the internship requirements for licensure.

(b) Internship Supervision.

1. The Internship Supervisor must approve the Intern's workload, which must be sufficient to afford the Intern appropriate experience but must not be so great as to impair his/her ability to provide competent service to clients/patients.

2. The internship supervisor must require the intern to maintain a file on each client, or of his/her work progress in the case of I/O interns. The intern must update each file no less than once each month with a current summary of client contacts and with a rationale for the procedures that were used.

3. The internship supervisor must limit the intern's activities to the application of assessment, treatment and/or intervention techniques, and methodology which the supervisor is qualified to utilize.

4. The internship supervisor shall hold primary responsibility for the intern's assessment procedures and treatment and/or intervention programs. An intern should be notified as soon as possible if his/her performance is unsatisfactory.

5. All fees for services shall be paid directly to the internship agency or directly to the supervisor.

(c) Specialty Areas. In addition to the general standards for internships enumerated above, internships in the specialty areas of clinical, counseling, school, I/O and in MR/DD psychology must meet the requirements delineated in the following section. Specialty areas are defined by the doctoral program described on the applicant's transcript. A clinical psychology specialty is defined by an earned doctoral degree with a concentration in clinical psychology. A counseling psychology specialty is defined by an earned doctoral degree with a concentration in counseling psychology. A school psychology specialty is defined by an earned doctoral degree with a concentration in school psychology. An industrial/organizational specialty is defined by an earned doctoral degree with a concentration in industrial/organizational psychology. A mental retardation/developmental disabilities specialty is defined by an earned doctoral degree with a substantial program of study in the specialized area of mental retardation or developmental disabilities psychology.

1. Clinical Psychology and Counseling Psychology Internships.

(i) Internship supervisors must be staff members of the internship site, or an affiliate thereof, who carry clinical responsibility for the cases being supervised.

(ii) The internship must have a clearly designated staff psychologist who is responsible for the integrity and quality of the training program, and who is a licensed psychologist.

(iii) The internship site must have two or more psychologists on its staff, at least one of whom satisfies the definition of an internship supervisor. An internship supervisor or secondary supervisor must be on site to personally intervene in a crisis situation requiring immediate attention.

(iv) The internship site must have a minimum of two psychology interns during the internship. The Board may make exceptions in cases of hardship.

(v) The internship supervisor must meet at least two hours per week in regularly scheduled, individual, in person, contact with the intern to review psychological services rendered directly by the intern.

(vi) The internship must include at least two hours per week of scheduled learning activities such as: conferences involving cases in which the intern was actively involved; seminars dealing with clinical issues; co-therapy with a staff member which includes discussion of the therapy; group supervision; or additional supervision.

2. School Psychology Internships.

(i) Internship supervisors must be staff members of the internship site, or an affiliate thereof, who carry clinical responsibility for the cases being supervised.

(ii) The internship must have a clearly designated staff psychologist who is responsible for the integrity and quality of the training program, and who is a licensed psychologist or a school psychologist who is certified at the doctoral level by a State Department of Education.

(iii) The supervisor must be either a staff member of the internship site or an affiliate thereof who is responsible for the cases being supervised. Supervision may be provided by a combination of staff members and an affiliate. When supervision is provided exclusively by an affiliate, an administrative head of that staff must be responsible for the accuracy of the documented work hours. An internship supervisor or secondary supervisor must be on site to personally intervene in a crisis situation requiring immediate attention.

(iv) The internship site must have a minimum of two psychology interns during the internship. The Board may make exceptions in cases of hardship.

(v) The internship supervisor must meet at least two hours per week in regularly scheduled, individual, in person, contact with the intern to review psychological services rendered directly by the intern.

(vi) The internship must include at least two hours per week of scheduled learning activities such as: conferences involving cases in which the intern was actively involved, seminars dealing with clinical issues, co-therapy with a staff member which includes discussion of the therapy, group supervision, or additional supervision.

3. Industrial/Organizational (I/O) Internships.

(i) The Internship must be an organized program designed to provide the Intern with a planned, coherent sequence of supervised experiences of quality in a broad range of professional psychology activities including research and/or intervention within an organizational setting.

(ii) At least 80% of the Internship Supervision must be provided by one or more psychologists.

(iii) At least one-half of the Internship time must be spent in professional psychological activities with or on behalf of a client (person or organization).

(iv) The Internship agency or director of training must, upon request of the Board, furnish a written statement of the internship goals and the nature of experiences of the Intern's work.

(v) All professional activities of the Intern must be conducted in a setting where a Supervisor is available for consultation within a reasonable period of time based on the nature of the supervised experience.

(vi) The Internship may consist of more than one (but no more than four) separate work experiences. Each experience must last at least three months (500 hours) and must meet all other I/O Internship requirements.

4. Mental Retardation/Developmental Disabilities (MR/DD) Internships.

(i) The internship site must employ a clearly designated internship training director who shall be responsible for the integrity and quality of the internship, however, the internship may occur at more than one site.

(ii) At least one of the internship supervisors must be a licensed psychologist whose specialty area is MR/DD psychology or a licensed psychologist with considerable experience in the practice of MR/DD psychology.

(iii) The internship must provide training in a variety of assessment and intervention activities conducted with persons with MR/DD. The training in assessment activities must include an emphasis on the selection of appropriate evaluation instruments. The training in intervention activities must include experience in applied behavior analysis for persons who carry MR/DD as at least one of their diagnoses. Experience with individuals with dual diagnoses, including mental illness, substance abuse, and behavior disorders, is strongly recommended.

(iv) The supervisor must meet at least two hours per week in regularly scheduled face-to-face contact with the intern to review psychological services rendered by that intern.

(v) The internship must include at least two hours per week of scheduled learning activities such as case conferences, individual program or service planning meetings, seminars dealing with professional issues, or in-service training.

(vi) The intern must have scheduled and unscheduled opportunities to interact professionally with such persons as interns, psychologists, and professionals from other disciplines and other agencies. The intern must have experience in working with professionals from other disciplines as part of an interdisciplinary team involved in assessment and intervention activities. At least 250 hours of the internship must be completed in an organized program for persons with MR/DD to provide sufficient experience in the interdisciplinary team process.

(vii) All professional activities of the intern must be conducted in a setting where a licensed psychologist is available for consultation within a reasonable period of time based on the nature of the supervised experience. The internship supervisor, or another equally qualified person, must be available to intervene in a timely manner in an emergency.

(viii) Documentation of the internship must be submitted to the Board.

(5) Postdoctoral Supervised Work Experience (SWE).

(a) General Standards and Requirements: The general standards for a postdoctoral supervised work experience will be met when the following is fulfilled:

1. Licensure requires 1500 hours of SWE that is deemed acceptable to the Board which comply with the guidelines set forth below:

2. The SWE must be consonant with the fellow's area of intended practice, and must be within the range of competency of the supervisor(s). It must occur after all requirements for the doctoral degree are completed.

3. The SWE must be completed in no less than 11 months and no more than 24 months after its inception. Supervision begins on the date the contract is signed by the supervisor(s) and fellow.

4. The content of the SWE must include a minimum of 500 hours of client/patient involvement as defined as including face to face client/patient contact, document review, test scoring, note/report writing, or any other professional activity which directly relates to the treatment of or services provided for the client/patient.

5. All SWE hours must be documented on a weekly log which is co-signed by the fellow and supervisor. The SWE log shall contain at least the following information:

(i) The professional activities, tasks, or work performed during that week.

(ii) The number of hours worked during that week.

(iii) The number of hours of client/patient involvement during that week.

(iv) The number of hours of individual supervision during that week.

6. Postdoctoral Supervised Work Experiences (SWE) conducted in academic settings meet the non-client/patient involvement hours requirement through activities that transmit psychological knowledge or application of psychological principles in the work setting (e.g. teaching, research, university and professional service and governance, and administration).

7. An applicant who has completed 1,500 hours of supervised experience in no less than 11 months and no more than 24 months in a formal postdoctoral fellowship that is APA accredited or APPIC member or acceptable to the Board will be deemed to have met the SWE requirement for licensure. No SWE log is required for individuals in these programs.

8. An applicant who meets the definition of Senior Industrial/Organizational Psychologist will be deemed to have met the SWE requirement for licensure.

(b) Supervision Requirements:

1. The postdoctoral supervisor(s) and fellow must enter into a written and signed supervision contract prior to the inception of the SWE. The contract must specify the work experience goals, its content and the criteria for ensuring the quality and quantity of the fellow's work. It is not necessary that the supervisor be on site for the supervisee's clinical work.

2. The fellow must meet with the supervisor individually to discuss cases and other professional activities at least one hour for each 30 hours of SWE. That meeting must occur during the week the fellow provides the services or during the week following the provision of those services. Supervision must be individual, and may be accomplished through in person meetings or real time, face to face video teleconferencing. I/O Fellows are exempt from this requirement.

3. At the successful conclusion of the SWE, all supervisors shall attest to the adequacy of the applied experience and supervision on a postdoctoral supervised work experience affidavit of supervisor form (Form G).

4. Supervision of the Postdoctoral Industrial/Organizational work experience may be conducted by a qualified psychologist employed by the same institution or agency as the Fellow. Alternatively, the supervision may be provided by private arrangement with a qualified psychologist employed elsewhere so long as the Supervisor and Fellow meet face-to-face at least twice a month for a minimum of four hours per month. At least one half of the SWE hours must be spent in professional psychological activities with or on behalf of a client (person or organization). At a minimum, the Supervisor must review and comment on any research or intervention designs, monitor progress on such efforts, and review and comment on any reports, recommendations, or interventions resulting from such efforts.

Cite as Ga. Comp. R. & Regs. R. 510-2-.05

AUTHORITY: O.C.G.A. §§ 43-1-19**,** 43-1-25**,** 43-39-1**,** 43-39-2**,** 43-39-5(d)**,** 43-39-6**,** 43-39-8**,** 43-39-9**,** 43-39-13**,** 43-1-19**.**

HISTORY: Original Rule entitled "Examinations: Appearance, Conduct" adopted. F. and eff. June 30, 1965.

Repealed: New Rule of same title adopted. F. Jan. 3, 1973; eff. Jan. 23, 1973.

Repealed: New Rule entitled "Examinations: Appearance, Conduct of Examinations" adopted. F. June 21, 1978; eff. July 11, 1978.

Repealed: New Rule entitled "Internship/Postdoctoral Supervised Work Experience" adopted. F. July 27, 1994; eff. Aug. 16, 1994.

Amended: F. May 1, 1998; eff. May 21, 1998.

Repealed: New Rule entitled "Education" adopted. F. Oct. 29, 2003; eff. Nov. 18, 2003.

Repealed: New Rule entitled "Internship and Postdoctoral Supervised Work Experience" adopted. F. Apr. 27, 2004; eff. May 17, 2004.

Amended: F. Sept. 24, 2007; eff. Oct. 14, 2007.

Amended: F. Nov. 15, 2007; eff. Dec. 5, 2007.

Amended: F. Nov. 16, 2010; eff. Dec. 6, 2010.

Amended: F. May 8, 2013; eff. May 28, 2013.

Amended: F. Sep. 29, 2015; eff. Oct. 19, 2015.

Amended: F. Oct. 2, 2017; eff. Oct. 22, 2017.

Amended: F. Mar. 10, 2021; eff. Mar. 30, 2021.

Department 550. [Effective 3/22/2021] REGISTRATION OF TRAUMA SCENE WASTE MANAGEMENT PRACTITIONERS

Chapter 550-1. DEFINITIONS

550-1-.01 Definitions

(1) "Pathogen" means a microorganism, including bacteria, viruses, rickettsiae, and parasites, or other agent, such as a proteinaceous infectious particle or prion, that can cause disease in humans.

(2) "Person" means: an individual; any corporate entity or form authorized by law, including any of its subsidiaries or affiliates; or any officer, director, board member, or employee of any corporate entity or form authorized by law.

(3) "Potentially infectious material" means material known or reasonably expected to contain a pathogen.

(4) "Regulated biomedical waste" means and includes the following:

(a) Biological waste, which includes blood and blood products, exudates, secretions, suctionings, and other body fluids which contain free liquids and cannot be or are not directly discarded into a municipal sewer system;

(b) Pathological waste, which includes all recognizable human tissues and body parts except teeth; and

(c) Sharps, which include any discarded article that may cause punctures or cuts including, but not limited to, items such as needles, IV tubing and syringes with needles attached, and scalpel blades.

(5) "Trauma scene" means a location soiled by or contaminated with potentially infectious material or regulated biomedical waste due to the occurrence of a homicide or suicide, or the occurrence of a death of a human being in which there is advanced decomposition of the body; provided, however, that this term shall not include the scene of a motor vehicle accident or locations which are subject to the laws and regulations of the federal Occupational Safety and Health Administration.

(6) "Trauma scene waste" means potentially infectious material or regulated biomedical waste that has been removed, is to be removed, or is in the process of being removed from a trauma scene.

(7) "Trauma scene waste management practitioner" means the owner of any interest in a commercial enterprise for the cleanup or removal of trauma scene waste and who is registered with the Secretary of State pursuant to this chapter.

Cite as Ga. Comp. R. & Regs. R. 550-1-.01

AUTHORITY: O.C.G.A. §§ 43-46A-1**,** 43-46A-1**.**

HISTORY: Original Rule entitled "Definitions" adopted. F. Mar. 2, 2021; eff. Mar. 22, 2021.

Department 550. [Effective 3/22/2021] REGISTRATION OF TRAUMA SCENE WASTE MANAGEMENT PRACTITIONERS

Chapter 550-2. INITIAL REGISTRATION

550-2-.01 Application for Registration

(1) Unless otherwise exempt by O.C.G.A. § 43-46A or these Rules, no person or company may operate as a trauma scene waste management practitioner without being registered with the Department.

(2) To obtain a registration from the Department, applicants must submit:

(a) the Department approved application form which will include the address of the established place of business where documents shall be maintained and inspections can be performed;

(b) the fee as prescribed by O.C.G.A. § 43-46A;

(c) a fingerprint-based background check by the Georgia Crime Information Center and Federal Bureau of Investigation must be submitted by each owner of a company.

1. No person who is currently serving a sentence of incarceration or probation for any felony under the laws of this state or any other state or the federal government shall be issued a trauma scene waste management practitioner registration.

(d) proof of liability insurance coverage in the amount of at least $100,000.00 for each occurrence for the trauma scene waste management practitioner, his or her employees, and each independent contractor of such trauma scene waste management practitioner who performs trauma scene waste management services.

1. Such proof shall be provided to the Department as necessary to demonstrate continuance of coverage during the entire registration period.

(e) proof of a valid generation and transportation permit from the Environmental Protection Division of the Department of Natural Resources for the provision of trauma scene waste management services or shall submit an affidavit that the registrant contracts with an entity which has such permit and proof of that entity's permit.

(f) proof of all current certifications held by practitioner in the removal and disposal of regulated biomedical waste or proof of all current certifications held by any contractor used by the practitioner for the provision of trauma scene waste management services.

(g) a bond executed with a surety company duly authorized to do business in Georgia and payable to the Governor for the use and benefit of any person who is harmed by such trauma scene waste practitioner, his or her employee, or an independent contractor of such trauma scene waste management practitioner in the performance of trauma scene waste management services.

1. The bond shall be in the amount of $25,000.00 and shall run concurrent with the registration period.

2. The bond shall be submitted on a Department-approved form.

Cite as Ga. Comp. R. & Regs. R. 550-2-.01

AUTHORITY: O.C.G.A. §§ 43-46A-2**,** 43-46A-4**.**

HISTORY: Original Rule entitled "Application for Registration" adopted. F. Mar. 2, 2021; eff. Mar. 22, 2021.

550-2-.02 Applications for Military Spouses and Transitioning Service Members

(1) As used in this rule, the following terms shall mean:

(a) "Military" means the United States armed forces, including the National Guard.

(b) "Military spouse" means a spouse of a service member or transitioning service member.

(c) "Service member" means an active or reserve member of the armed forces, including the National Guard.

(d) "Transitioning service member" means a member of the military on active duty status or on separation leave who is within 24 months of retirement or 12 months of separation.

(2) Effective July 1, 2017, military spouses and transitioning service members may qualify for expedited processing of the registration application for any registration or permit issued by the Board by showing that the applicant is a military spouse or transitioning service member and that the applicant has paid the fee and meets the requirements for a registration or permit under the laws and rules for the type of registration for which the applicant has applied.

Cite as Ga. Comp. R. & Regs. R. 550-2-.02

AUTHORITY: O.C.G.A. § 43-1-34**.**

HISTORY: Original Rule entitled "Applications for Military Spouses and Transitioning Service Members" adopted. F. Mar. 2, 2021; eff. Mar. 22, 2021.

550-2-.03 Emergency Permits

In the event of a declared public health emergency or a state of emergency, the Department shall be authorized to issue temporary registrations to operate as trauma scene waste management practitioners under such limiting conditions as the Department deems appropriate under such circumstances. Such temporary registrations shall terminate at a time specified by the Department.

Cite as Ga. Comp. R. & Regs. R. 550-2-.03

AUTHORITY: O.C.G.A. § 43-46A-8**.**

HISTORY: Original Rule entitled "Emergency Permits" adopted. F. Mar. 2, 2021; eff. Mar. 22, 2021.

Department 550. [Effective 3/22/2021] REGISTRATION OF TRAUMA SCENE WASTE MANAGEMENT PRACTITIONERS

Chapter 550-3. RENEWAL AND REINSTATEMENT

550-3-.01 Renewal

(1) Registrations with the Department shall be valid for three years from the date of issuance.

(2) Registrations that are not renewed in accordance with the renewal schedule and Department rules are automatically revoked by operation of law.

(3) To renew, each registrant must submit all of the following:

(a) a completed renewal application on the Department-approved form;

(b) the fee as prescribed by O.C.G.A. § 43-46A;

(c) a fingerprint-based background check by the Georgia Crime Information Center and Federal Bureau of Investigation must be submitted by each owner of a company.

1. No person who is currently serving a sentence of incarceration or probation for any felony under the laws of this state or any other state or the federal government shall be issued a trauma scene waste management practitioner registration.

(d) proof of liability insurance coverage in the amount of at least $100,000.00 for each occurrence for the trauma scene waste management practitioner, his or her employees, and each independent contractor of such trauma scene waste management practitioner who performs trauma scene waste management services.

1. Such proof shall be provided to the Department as necessary to demonstrate continuation of coverage throughout the registration period.

(e) a bond executed with a surety company duly authorized to do business in Georgia and payable to the Governor for the use and benefit of any person who is harmed by such trauma scene waste practitioner, his or her employee, or an independent contractor of such trauma scene waste management practitioner in the performance of trauma scene waste management services.

1. The bond shall be in the amount of $25,000.00 and shall run concurrent with the registration period.

2. The bond shall be submitted on a Department-approved form.

(f) Proof of a valid generation and transportation permit from the Environmental Protection Division of the Department of Natural Resources for the provision of trauma scene waste management services or submission of an affidavit that registrant contracts with an entity which has such permit and proof of that entity's permit.

(g) Proof of all current certifications held by such practitioner in the removal and disposal of regulated biomedical waste and proof of all current certifications held by any contractor used by the practitioner for the provision of trauma scene waste management services.

Cite as Ga. Comp. R. & Regs. R. 550-3-.01

AUTHORITY: O.C.G.A. §§ 43-46A-2**,** 43-46A-4**.**

HISTORY: Original Rule entitled "Renewal" adopted. F. Mar. 2, 2021; eff. Mar. 22, 2021.

550-3-.02 Reinstatement

(1) To reinstate a lapsed registration, each registrant must submit all of the following:

(a) A completed reinstatement application on the Department-approved form;

(b) The fee as prescribed by the fee schedule;

(c) A fingerprint-based background check conducted by the Georgia Crime Information Center and Federal Bureau of Investigation on each owner of a company.

1. No person who is currently serving a sentence of incarceration or probation for any felony under the laws of this state or any other state or the federal government shall be issued a trauma scene waste management practitioner registration.

(d) Proof of liability insurance coverage in the amount of at least $100,000.00 for each occurrence for the trauma scene waste management practitioner, his or her employees, and each independent contractor of such trauma scene waste management practitioner who performs trauma scene waste management services.

1. Such proof shall be provided to the Department as necessary to demonstrate continued coverage through the registration period.

(e) submit to the Secretary of State a bond executed with a surety company duly authorized to do business in Georgia and payable to the Governor for the use and benefit of any person who is harmed by such trauma scene waste practitioner, his or her employee, or an independent contractor of such trauma scene waste management practitioner in the performance of trauma scene waste management services.

1. The bond shall be in the amount of $25,000.00 and shall run concurrent with the registration period.

2. The bond shall be submitted on a Department-approved form

(f) Proof of a valid generation and transportation permit from the Environmental Protection Division of the Department of Natural Resources for the provision of trauma scene waste management services or submission of an affidavit that registrant contracts with an entity which has such permit and proof of that entity's permit.

(g) Proof of all current certifications held by such practitioner in the removal and disposal of regulated biomedical waste or proof of all current certifications held by any contractor in the removal and disposal of regulated biomedical waste used by the practitioner for the provision of trauma scene waste management services.

(2) Reinstatement shall be at the discretion of the Department.

Cite as Ga. Comp. R. & Regs. R. 550-3-.02

AUTHORITY: O.C.G.A. §§ 43-46A-2**,** 43-46A-4**.**

HISTORY: Original Rule entitled "Reinstatement" adopted. F. Mar. 2, 2021; eff. Mar. 22, 2021.

Department 550. [Effective 3/22/2021] REGISTRATION OF TRAUMA SCENE WASTE MANAGEMENT PRACTITIONERS

Chapter 550-4. MAINTAINING REQUIREMENTS

550-4-.01 Maintaining Requirements

(1) No trauma scene waste management practitioner or insurance carrier shall cancel, or cause to be canceled, a liability insurance policy issued pursuant to these rules unless the Department is informed in writing by a certified letter at least 30 days prior to the proposed cancellation.

(a) If the trauma scene waste management practitioner or insurance carrier cancels the liability insurance policy and the registrant fails to submit, within ten days of the effective date of the cancellation, a new liability insurance policy that meets the requirements of these rules, the Department shall revoke the registration.

(2) No trauma scene waste management practitioner or insurance carrier shall cancel, or cause to be canceled, a bond issued pursuant to these unless the Department is informed in writing by a certified letter at least 30 days prior to the proposed cancellation.

(a) If the trauma scene waste management practitioner or surety cancels the bond and the registrant fails to submit, within ten days of the effective date of the cancellation, a new bond that meets the requirements of these rules, the Department shall revoke the registration.

Cite as Ga. Comp. R. & Regs. R. 550-4-.01

AUTHORITY: O.C.G.A. § 43-46A-4**.**

HISTORY: Original Rule entitled "Maintaining Requirements" adopted. F. Mar. 2, 2021; eff. Mar. 22, 2021.

Department 550. [Effective 3/22/2021] REGISTRATION OF TRAUMA SCENE WASTE MANAGEMENT PRACTITIONERS

Chapter 550-5. EXEMPTIONS

550-5-.01 Exemptions

(1) These rules shall not apply to:

(a) a medical practice or medical facility or a subsidiary thereof that is subject to the laws and regulations of the federal Occupational Safety and Health Administration.

(b) the cleanup of property owned by a person by such person.

(c) the gratuitous cleanup, removal, or remediation of trauma scene waste performed for the owner of any property by individuals who are not doing so as part of a commercial enterprise for the cleanup or removal of trauma scene waste, including, but not limited to, individuals who are family, friends, or neighbors of such owner; provided, however, that nothing shall prevent such owner from offering such individuals a gratuity at his or her election.

(2) An employee or independent contractor operating under a registered practitioner is not required to be independently registered. However, the registered practitioner shall be responsible and liable for the acts of any employee or independent contractor practicing under the registration.

Cite as Ga. Comp. R. & Regs. R. 550-5-.01

AUTHORITY: O.C.G.A. §§ 43-46A-4**,** 43-46A-5**,** 43-46A-10**.**

HISTORY: Original Rule entitled "Exemptions" adopted. F. Mar. 2, 2021; eff. Mar. 22, 2021.

Department 550. [Effective 3/22/2021] REGISTRATION OF TRAUMA SCENE WASTE MANAGEMENT PRACTITIONERS

Chapter 550-6. PROFESSIONAL CONDUCT

550-6-.01 Professional Conduct

(1) Prior to beginning the cleanup, removal, or remediation of trauma scene waste, a registrant shall provide the individual requesting such services with a good faith estimate of the expected costs of such services.

(2) Each trauma scene waste management practitioner shall be responsible and liable for the acts of his or her employees and any independent contractor of such trauma scene waste management practitioner in the performance of trauma scene waste management services.

Cite as Ga. Comp. R. & Regs. R. 550-6-.01

AUTHORITY: O.C.G.A. §§ 43-46A-6**,** 43-46A-4**.**

HISTORY: Original Rule entitled "Professional Conduct" adopted. F. Mar. 2, 2021; eff. Mar. 22, 2021.

Department 550. [Effective 3/22/2021] REGISTRATION OF TRAUMA SCENE WASTE MANAGEMENT PRACTITIONERS

Chapter 550-7. CAUSES FOR DISCIPLINARY ACTION

550-7-.01 Causes for Disciplinary Action

(1) The Professional Licensing Boards Division of the Secretary of State shall have the authority to refuse to grant a registration and to revoke or discipline a registrant, upon a finding an applicant or registrant has:

(a) Failed to demonstrate the qualifications or standards for a registration contained in the laws, rules, or regulations under which registration is sought or held; it shall be incumbent upon the applicant to demonstrate that the applicant meets all the requirements for the issuance of a registration.

(b) Knowingly made misleading, deceptive, untrue, or fraudulent representations in the practice of a business or profession licensed or registered under Title 43 or on any document connected therewith; practiced fraud or deceit or intentionally made any false statement in obtaining a license or registration to practice the licensed or registered business or profession; or made a false statement or deceptive registration;

(c) Been convicted of any felony or of any crime involving moral turpitude in the courts of this state or any other state, territory, or country or in the courts of the United States; as used in this Rule, "felony" shall include any offense which, if committed in this state, would be deemed a felony, without regard to its designation elsewhere; and, as used in this Rule, the term "conviction" shall include a finding or verdict of guilty or a plea of guilty, regardless of whether an appeal of the conviction has been sought;

(d) Been arrested, charged, and sentenced for the commission of any felony, or any crime involving moral turpitude, when:

1. A sentence for such offense was imposed pursuant to Article 3 of Chapter 8 of Title 42 or another state's first offender laws;

2. A sentence for such offense was imposed pursuant to subsection (a) or (c) of Code Section 16-13-2;

3. A sentence for such offense was imposed as a result of a plea of nolo contendere; or

4. An adjudication of guilt or sentence was otherwise withheld or not entered on the charge.

(2) Had a license or registration to practice a business or profession licensed or registered under Title 43 revoked, suspended, annulled, or disciplined by any lawful licensing authority; was denied a license or registration by any lawful licensing authority pursuant to disciplinary proceedings; or was refused the renewal of a license or registration by any lawful licensing authority pursuant to disciplinary proceedings;

(3) Engaged in any unprofessional, immoral, unethical, deceptive, or deleterious conduct or practice harmful to the public that materially affects the fitness of the licensee, registrant, or applicant to practice a business or profession licensed or registered under Title 43 or is of a nature likely to jeopardize the interest of the public; such conduct or practice need not have resulted in actual injury to any person or be directly related to the practice of the licensed or registered business or profession but shows that the licensee, registrant, or applicant has committed any act or omission which is indicative of bad moral character or untrustworthiness. Such conduct or practice shall also include any departure from, or the failure to conform to, the minimal reasonable standards of acceptable and prevailing practice of the business or profession licensed or registered under this Title 43;

(4) Knowingly performed any act which in any way aids, assists, procures, advises, or encourages any unlicensed or unregistered person or any licensee or registrant whose license or registration has been suspended or revoked by a

lawful licensing authority to practice a business or profession licensed or registered under this Title or to practice outside the scope of any disciplinary limitation placed upon the licensee or registrant by the board or Department;

(5) Violated a statute, law, or any rule or regulation of this state, any other state, a lawful licensing authority regulating the business or profession licensed or registered under this Title 43, the United States, or any other lawful authority without regard to whether the violation is criminally punishable when such statute, law, or rule or regulation relates to or in part regulates the practice of a business or profession licensed or registered under this Title 43 and when the licensee, registrant, or applicant knows or should know that such action violates such statute, law, or rule; or violated a lawful order of the board or Department previously entered by the board or Department in a disciplinary hearing, consent decree, or license or registration reinstatement;

(6) Been adjudged mentally incompetent by a court of competent jurisdiction within or outside this state; any such adjudication shall automatically suspend the license or registration of any such person and shall prevent the reissuance or renewal of any license or registration so suspended for so long as the adjudication of incompetence is in effect;

(7) Displayed an inability to practice a business or profession registered under Title 43 with reasonable skill and safety to the public or has become unable to practice the licensed or registered business or profession with reasonable skill and safety to the public by reason of illness or the use of alcohol, drugs, narcotics, chemicals, or any other type of material; or

(8) Failed to comply with an order for child support as defined by Code Section 19-11-9.3; it shall be incumbent upon the applicant, registrant, or licensee to supply a notice of release to the board or Department from the child support agency within the Department of Human Services indicating that the applicant, registrant, or licensee has come into compliance with an order for child support so that a license or registration may be issued or granted if all other conditions for licensure are met.

(e) An order is not a proceeding or enforcement action pursuant to Chapter 13 of Title 50.

Cite as Ga. Comp. R. & Regs. R. 550-7-.01

AUTHORITY: O.C.G.A. § 43-1-19**.**

HISTORY: Original Rule entitled "Causes for Disciplinary Action" adopted. F. Mar. 2, 2021; eff. Mar. 22, 2021.

Department 560. RULES OF DEPARTMENT OF REVENUE

Chapter 560-11. LOCAL GOVERNMENT SERVICES DIVISION

Subject 560-11-6. CONSERVATION USE PROPERTY

560-11-6-.09 Table of Conservation Use Land Values

(1) For the purpose of prescribing the 2021 current use values for conservation use land, the state shall be divided into the following nine Conservation Use Valuation Areas (CUVA 1 through CUVA 9) and the following accompanying table of per acre land values shall be applied to each acre of qualified land within the CUVA for each soil productivity classification for timber land (W1 through W9) and agricultural land (A1 through A9):

(a) CUVA #1 counties: Bartow, Catoosa, Chattooga, Dade, Floyd, Gordon, Murray, Paulding, Polk, Walker, and Whitfield. Table of per acre values: W1 930, W2 834, W3 758, W4 695, W5 637, W6 590, W7 553, W8 507, W9 463, A1 1,689, A2 1,597, A3 1,480, A4 1,357, A5 1,223, A6 1,094, A7 972, A8 853, A9 730;

(b) CUVA #2 counties: Barrow, Cherokee, Clarke, Cobb, Dawson, DeKalb, Fannin, Forsyth, Fulton, Gilmer, Gwinnett, Hall, Jackson, Lumpkin, Oconee, Pickens, Towns, Union, Walton, and White. Table of per acre values: W1 1,259, W2 1,140, W3 1,028, W4 931, W5 857, W6 805, W7 759, W8 697, W9 632, A1 1,850, A2 1,650, A3 1,467, A4 1,296, A5 1,161, A6 1,037, A7 930, A8 843, A9 759;

(c) CUVA #3 counties: Banks, Elbert, Franklin, Habersham, Hart, Lincoln, Madison, Oglethorpe, Rabun, Stephens, and Wilkes. Table of per acre values: W1 1,234, W2 1,074, W3 969, W4 931, W5 857, W6 784, W7 660, W8 536, W9 449, A1 1,408, A2 1,281, A3 1,146, A4 1,015, A5 885, A6 799, A7 656, A8 548, A9 463;

(d) CUVA #4 counties: Carroll, Chattahoochee, Clayton, Coweta, Douglas, Fayette, Haralson, Harris, Heard, Henry, Lamar, Macon, Marion, Meriwether, Muscogee, Pike, Schley, Spalding, Talbot, Taylor, Troup, and Upson. Table of per acre values: W1 908, W2 813, W3 737, W4 676, W5 588, W6 548, W7 476, W8 412, W9 334, A1 1,154, A2 1,034, A3 947, A4 846, A5 743, A6 616, A7 534, A8 414, A9 297;

(e) CUVA #5 counties: Baldwin, Bibb, Bleckley, Butts, Crawford, Dodge, Greene, Hancock, Houston, Jasper, Johnson, Jones, Laurens, Monroe, Montgomery, Morgan, Newton, Peach, Pulaski, Putnam, Rockdale, Taliaferro, Treutlen, Twiggs, Washington, Wheeler, and Wilkinson. Table of per acre values: W1 773, W2 716, W3 658, W4 602, W5 543, W6 489, W7 428, W8 370, W9 307, A1 855, A2 744, A3 692, A4 632, A5 564, A6 479, A7 393, A8 310, A9 226;

(f) CUVA #6 counties: Bulloch, Burke, Candler, Columbia, Effingham, Emanuel, Glascock, Jefferson, Jenkins, McDuffie, Richmond, Screven, and Warren. Table of per acre values: W1 765, W2 702, W3 641, W4 584, W5 521, W6 462, W7 400, W8 337, W9 275, A1 970, A2 851, A3 780, A4 716, A5 632, A6 526, A7 428, A8 328, A9 230;

(g) CUVA #7 counties: Baker, Calhoun, Clay, Decatur, Dougherty, Early, Grady, Lee, Miller, Mitchell, Quitman, Randolph, Seminole, Stewart, Sumter, Terrell, Thomas, and Webster. Table of per acre values: W1 819, W2 745, W3 679, W4 609, W5 537, W6 469, W7 400, W8 328, W9 259, A1 1,128, A2 1,022, A3 908, A4 790, A5 677, A6 567, A7 438, A8 332, A9 224;

(h) CUVA #8 counties: Atkinson, Ben Hill, Berrien, Brooks, Clinch, Coffee, Colquitt, Cook, Crisp, Dooly, Echols, Irwin, Jeff Davis, Lanier, Lowndes, Telfair, Tift, Turner, Wilcox, and Worth. Table of per acre values: W1 891, W2 807, W3 723, W4 641, W5 557, W6 476, W7 392, W8 310, W9 252, A1 1,140, A2 1,077, A3 972, A4 867, A5 762, A6 658, A7 507, A8 412, A9 303;

(i) CUVA #9 counties: Appling, Bacon, Brantley, Bryan, Camden, Charlton, Chatham, Evans, Glynn, Liberty, Long, McIntosh, Pierce, Tattnall, Toombs, Ware, and Wayne. Table of per acre values: W1 902, W2 813, W3 737, W4

656, W5 569, W6 491, W7 407, W8 325, W9 252, A1 1,056, A2 1,017, A3 913, A4 813, A5 712, A6 609, A7 507, A8 404, A9 303.

Cite as Ga. Comp. R. & Regs. R. 560-11-6-.09

AUTHORITY: O.C.G.A. §§ 48-2-12**,** 48-5-7**,** 48-5-7.4**,** 48-5-269**.**

HISTORY: Original Rule entitled "Table of Conservation Use Land Values" adopted. F. May 28, 1993; eff. June 17, 1993.

Repealed: New Rule of same title adopted. F. May 13, 1994; eff. June 2, 1994.

Repealed: New Rule of same title adopted. F. Mar. 1, 1995; Mar. 21, 1995.

Repealed: New Rule of same title adopted. F. Jan. 28, 1996; eff. Feb. 18, 1996.

Repealed: New Rule of same title adopted. F. Feb. 24, 1997; eff. Mar. 16, 1997.

Repealed: New Rule of same title adopted. F. Jan. 27, 1998; eff. Feb. 16, 1998.

Repealed: New Rule of same title adopted. F. Mar. 10, 1999; eff. Mar. 30, 1999.

Amended: F. Feb. 2, 2000; eff. Feb. 22, 2000.

Amended: F. Apr. 20, 2001; eff. May 10, 2001.

Repealed: New Rule of same title adopted. F. Apr. 17, 2002; eff. May 7, 2002.

Repealed: New Rule of same title adopted. F. May 19, 2003; eff. June 8, 2003.

Repealed: New Rule of same title adopted. F. Mar. 4, 2004; eff. Mar. 24, 2004.

Amended: F. Mar. 29, 2005; eff. Apr. 18, 2005.

Repealed: New Rule of same title adopted. F. Mar. 1, 2006; eff. Mar. 21, 2006.

Amended: F. Feb. 21, 2007; eff. Mar. 13, 2007.

Amended: F. Apr. 21, 2008; eff. May 11, 2008.

Repealed: New Rule of same title adopted. F. Apr. 15, 2009; eff. May 5, 2009.

Repealed: New Rule of same title adopted. F. Mar. 15, 2010; eff. Apr. 4, 2010.

Repealed: New Rule of same title adopted. F. Mar. 3, 2011; eff. Mar. 23, 2011.

Amended: F. Apr. 24, 2012; eff. May 14, 2012.

Amended: F. Jun. 10, 2013; eff. Jun. 30, 2013.

Amended: F. Apr. 22, 2014; eff. May 12, 2014.

Amended: F. May 18, 2015; eff. June 7, 2015.

Amended: F. Feb. 23, 2016; eff. Mar. 14, 2016.

Amended: F. Mar. 24, 2017; eff. Apr. 13, 2017.

Amended: F. Mar. 6, 2018; eff. Mar. 26, 2018.

Amended: F. Feb. 1, 2019; eff. Feb. 21, 2019.

Amended: F. Mar. 6, 2020; eff. Mar. 26, 2020.

Amended: F. Mar. 4, 2021; eff. Mar. 24, 2021.

Department 560. RULES OF DEPARTMENT OF REVENUE

Chapter 560-11. LOCAL GOVERNMENT SERVICES DIVISION

Subject 560-11-11. FOREST LAND PROTECTION

560-11-11-.12 Table of Forest Land Protection Act Land Use Values

(1) For the purpose of prescribing the 2021 current use values for conservation use land, the state shall be divided into the following nine Forest Land Protection Act Valuation Areas (FLPAVA 1 through FLPAVA 9) and the following accompanying table of per acre land values shall be applied to each acre of qualified land within the FLPAVA for each soil productivity classification for timber land (W1 through W9):

(a) FLPAVA #1 counties: Bartow, Catoosa, Chattooga, Dade, Floyd, Gordon, Murray, Paulding, Polk, Walker, and Whitfield. Table of per acre values: W1 930, W2 834, W3 758, W4 695, W5 637, W6 590, W7 553, W8 507, W9 463;

(b) FLPAVA #2 counties: Barrow, Cherokee, Clarke, Cobb, Dawson, DeKalb, Fannin, Forsyth, Fulton, Gilmer, Gwinnett, Hall, Jackson, Lumpkin, Oconee, Pickens, Towns, Union, Walton, and White. Table of per acre values: W1 1,259, W2 1,140, W3 1,028, W4 931, W5 857, W6 805, W7 759, W8 697, W9 632;

(c) FLPAVA #3 counties: Banks, Elbert, Franklin, Habersham, Hart, Lincoln, Madison, Oglethorpe, Rabun, Stephens, and Wilkes. Table of per acre values: W1 1,234, W2 1,074, W3 969, W4 931, W5 857, W6 784, W7 660, W8 536, W9 449;

(d) FLPAVA #4 counties: Carroll, Chattahoochee, Clayton, Coweta, Douglas, Fayette, Haralson, Harris, Heard, Henry, Lamar, Macon, Marion, Meriwether, Muscogee, Pike, Schley, Spalding, Talbot, Taylor, Troup, and Upson. Table of per acre values: W1 908, W2 813, W3 737, W4 676, W5 588, W6 548, W7 476, W8 412, W9 334;

(e) FLPAVA #5 counties: Baldwin, Bibb, Bleckley, Butts, Crawford, Dodge, Greene, Hancock, Houston, Jasper, Johnson, Jones, Laurens, Monroe, Montgomery, Morgan, Newton, Peach, Pulaski, Putnam, Rockdale, Taliaferro, Treutlen, Twiggs, Washington, Wheeler, and Wilkinson. Table of per acre values: W1 773, W2 716, W3 658, W4 602, W5 543, W6 489, W7 428, W8 370, W9 307;

(f) FLPAVA #6 counties: Bulloch, Burke, Candler, Columbia, Effingham, Emanuel, Glascock, Jefferson, Jenkins, McDuffie, Richmond, Screven, and Warren. Table of per acre values: W1 765, W2 702, W3 641, W4 584, W5 521, W6 462, W7 400, W8 337, W9 275;

(g) FLPAVA #7 counties: Baker, Calhoun, Clay, Decatur, Dougherty, Early, Grady, Lee, Miller, Mitchell, Quitman, Randolph, Seminole, Stewart, Sumter, Terrell, Thomas, and Webster. Table of per acre values: W1 819, W2 745, W3 679, W4 609, W5 537, W6 469, W7 400, W8 328, W9 259;

(h) FLPAVA #8 counties: Atkinson, Ben Hill, Berrien, Brooks, Clinch, Coffee, Colquitt, Cook, Crisp, Dooly, Echols, Irwin, Jeff Davis, Lanier, Lowndes, Telfair, Tift, Turner, Wilcox, and Worth. Table of per acre values: W1 891, W2 807, W3 723, W4 641, W5 557, W6 476, W7 392, W8 310, W9 252;

(i) FLPAVA #9 counties: Appling, Bacon, Brantley, Bryan, Camden, Charlton, Chatham, Evans, Glynn, Liberty, Long, McIntosh, Pierce, Tattnall, Toombs, Ware, and Wayne. Table of per acre values: W1 902, W2 813, W3 737, W4 656, W5 569, W6 491, W7 407, W8 325, W9 252.

Cite as Ga. Comp. R. & Regs. R. 560-11-11-.12

AUTHORITY: O.C.G.A. §§ 48-2-12**,** 48-5-7**,** 48-5-7.7**,** 48-5-269**.**

HISTORY: Original Rule entitled "Table of Forest Land Protection Act Land Use Values" adopted as ER. 560-11-11-0.40-.12. F. and eff. May 22, 2009, the date of adoption.

Amended: Permanent Rule of same title adopted. F. June 26, 2009; eff. July 16, 2009.

Repealed: New Rule of same title adopted. F. Mar. 15, 2010; eff. Apr. 4, 2010.

Repealed: New Rule of same title adopted. F. Mar. 3, 2011; eff. Mar. 23, 2011.

Amended: F. Apr. 24, 2012; eff. May 14, 2012.

Amended: F. June 25, 2013; eff. July 15, 2013.

Amended: F. Apr. 22, 2014; eff. May 12, 2014.

Amended: F. May 18, 2015; eff. June 7, 2015.

Amended: F. Feb. 23, 2016; eff. Mar. 14, 2016.

Amended: F. Mar. 24, 2017; eff. Apr. 13, 2017.

Amended: F. Mar. 6, 2018; eff. Mar. 26, 2018.

Amended: F. Feb. 1, 2019; eff. Feb. 21, 2019.

Amended: F. Mar. 6, 2020; eff. Mar. 26, 2020.

Note: Correction of non-substantive typographical error in paragraph (d), "316 W1 882" corrected to "W1 882", as requested by the Agency. Effective March 26, 2020.

Amended: F. Mar. 4, 2021; eff. Mar. 24, 2021.

Department 700. RULES OF GEORGIA STATE BOARD OF VETERINARY MEDICINE

Chapter 700-1. ORGANIZATION

700-1-.02 Meetings

(1) Board meetings shall be held on dates as scheduled by the Board at its annual meeting. The last meeting of each year shall be the annual meeting.

(2) Special meetings shall be held in accordance with the Open Meetings Act.

Cite as Ga. Comp. R. & Regs. R. 700-1-.02

AUTHORITY: O.C.G.A. §§ 43-1-2(k)**;** 43-1-25**;** 43-50-20(e)**;** 43-50-21**;** 43-50-110**;** 50-14-1(d)(2), (3)**.**

HISTORY: Original Rule entitled "Meetings" was filed and effective on June 30, 1965.

Amended: Rule repealed and a new Rule of the same title adopted. Filed October 8, 1974; effective October 28, 1974.

Amended: F. Mar. 24, 2021; eff. Apr. 13, 2021.

700-1-.03 Election of Officers

At its annual meeting, the board shall elect officers and subcommittee members a minimum of once per year.

Cite as Ga. Comp. R. & Regs. R. 700-1-.03

AUTHORITY: O.C.G.A. §§ 43-1-25**;** 43-50-20(f)**;** 43-50-21**;** 43-50-110**.**

HISTORY: Original rule entitled "Election of Officers" was filed and effective on June 30, 1965.

Amended: Rule repealed and a new Rule of the same title adopted. Filed October 8, 1974; effective October 28, 1974.

Amended: F. Mar. 24, 2021; eff. Apr. 13, 2021.

Department 700. RULES OF GEORGIA STATE BOARD OF VETERINARY MEDICINE

Chapter 700-2. QUALIFICATIONS FOR ADMISSION TO EXAMINATION

700-2-.02 Application for Licensure for Veterinarians

(1) An applicant for licensure as a veterinarian shall make application on forms provided by the Board.

(2) With the completed application form(s) the applicant for licensure shall submit:

(a) The application fee in an amount established by the Board;

(b) Proof of graduation submitted directly from an accredited college or school of veterinary medicine certifying completion of a Doctor of Veterinary Medicine program and the award of the Doctor of Veterinary Medicine degree; If a transcript is not yet available, the Board will accept a letter from the Dean of the college or school of veterinary medicine certifying the date that graduation occurred; or, an electronic submission of proof of graduation submitted directly from the accredited college or school of veterinary medicine followed by the submission of an official transcript within thirty days;

(c) All scores of the applicant from the North American Veterinary Licensure Examination (NAVLE) or the Clinical Competency Test (CCT) and the National Board Examination (NBE) or an equivalent examination acceptable to the Board.

(d) Proof of a passing score on the Georgia Veterinary Law Exam.

(3) In addition to meeting the requirements stated above, graduates of a foreign college or school of veterinary medicine must submit one of the following:

(a) The Education Commission for Foreign Veterinary Graduates (ECFVG) certificate from the American Veterinary Medical Association; or,

(b) Proof of completion of the PAVE program from the American Association of Veterinary State Boards; or,

(c) An equivalent document acceptable to the Board.

(4) An applicant must furnish evidence satisfactory to the Board of all qualifications for licensure.

(5) All applications for licensure expire one year from the date of receipt of the application and non-refundable fee.

Cite as Ga. Comp. R. & Regs. R. 700-2-.02

AUTHORITY: O.C.G.A. §§ 43-1-25**,** 43-50-21**,** 43-50-31**;** 43-50-110**.**

HISTORY: Original Rule entitled "Examinations" adopted. F. and eff. June 30, 1965.

Repealed: New Rule entitled "Qualifications for Admission to Examination" adopted. F. Oct. 8, 1974; eff. Oct. 28, 1974.

Amended: F. Apr. 16, 1976; eff. May 6, 1976.

Amended: F. Mar. 18, 1980 eff. Apr. 7, 1980.

Amended: F. Aug. 4, 1982; eff. Aug. 24, 1982.

Amended: F. Apr. 23, 1984; eff. May 13, 1984.

Amended: F. July 31, 1984; eff. Aug. 20, 1984.

Amended: F. Oct. 5, 1992; eff. Oct. 25, 1992.

Repealed: New Rule entitled "Application for Licensure" adopted. F. Dec. 9, 2002; eff. Dec. 29, 2002.

Repealed: New Rule of same title adopted. F. Apr. 8, 2010; eff. Apr. 28, 2010.

Amended: New title "Application for Licensure for Veterinarians." F. Mar. 24, 2021; eff. Apr. 13, 2021.

700-2-.03 Examinations for Veterinarians

(1) The Georgia State Board of Veterinary Medicine has adopted the North American Veterinary Licensure Examination (NAVLE) administered by the International Council for Veterinary Assessment (ICVA) as its examination for licensure. All applications and fees for the NAVLE must be sent directly to the ICVA. The Board reserves the right to adopt other examinations similar in nature and scope.

(2) The NAVLE candidate must abide by all rules and regulations established by the ICVA concerning the NAVLE.

(3) A NAVLE score of 75 or greater is required for licensure consideration.

(4) An applicant for licensure who does not obtain a NAVLE score of 75 or higher may reapply to sit for the NAVLE, pay the appropriate fee and submit a new application directly to the ICVA.

Cite as Ga. Comp. R. & Regs. R. 700-2-.03

AUTHORITY: O.C.G.A. §§ 43-1-25**,** 43-50-21**,** 43-50-31(a)**,** 43-50-110**.**

HISTORY: Original Rule entitled "Fees" adopted. F. and eff. June 30, 1965.

Amended: F. Oct. 8, 1974; eff. Oct. 28, 1974.

Repealed: New Rule entitled "Examination" adopted. F. Dec. 9, 2002; eff. Dec. 29, 2002.

Repealed: New Rule of same title adopted. F. Apr. 8, 2004; eff. Apr. 28, 2004.

Repealed: New Rule of same title adopted. F. Apr. 8, 2010; eff. Apr. 28, 2010.

Repealed: New Rule of same title adopted. F. Jun. 27, 2013; eff. Jul. 17, 2013.

Amended: New title "Examinations for Veterinarians." F. Mar. 24, 2021; eff. Apr. 13, 2021.

Department 700. RULES OF GEORGIA STATE BOARD OF VETERINARY MEDICINE

Chapter 700-5. FACULTY LICENSE

700-5-.01 Application for Faculty License

(1) Application for veterinary faculty license shall be made on forms furnished by the Georgia State Board of Veterinary Medicine.

(2) All applicants shall meet requirements as stated in code section 43-50-43 of the Georgia Veterinary Practice Act.

(3) Veterinary faculty license will expire on December 31 and be renewable biennially on the even numbered years.

(4) All applications for licensure expire one year from the date of receipt of the application and non-refundable fee.

Cite as Ga. Comp. R. & Regs. R. 700-5-.01

AUTHORITY: O.C.G.A. §§ 43-1-25**,** 43-50-21**,** 43-50-43**,** 43-50-110**.**

HISTORY: Original Rule was filed on October 8, 1974; effective October 29,1974.

Amended: Filed April 16, 1976; effective May 6, 1976.

Repealed: New Rule of same title adopted. F. June 28, 2001; eff. July 18, 2001.

Amended: F. Mar. 24, 2021; eff. Apr. 13, 2021.

Department 700. RULES OF GEORGIA STATE BOARD OF VETERINARY MEDICINE

Chapter 700-6. REGISTRATION OF VETERINARY TECHNICIANS

700-6-.01 Application for Veterinary Technician License

(1) Application for licensure of Veterinary Technicians shall be made on forms furnished by the Georgia State Board of Veterinary Medicine.

(2) All applicants shall meet the following requirements as provided in Code Section 43-50-52 of the Georgia Veterinary Practice Act:

(a) The applicant has attained the age of 18;

(b) The applicant is of good moral character; and

(c) The applicant is a graduate of a Veterinary Technician program approved by the American Veterinary Medical Association, however, the Board will review all other programs on an individual basis. The veterinary technician program may provide the electronic submission of proof of graduation or an official transcript.

(d) If licensed in another state(s) with license requirements substantially the same as this state, which were in effect at the time the applicant was first admitted to practice in the other state(s), provide verification of licensure from that state(s);

(e) The applicant has paid all applicable fees.

(3) All applicants for licensure must present proof of having obtained a passing scaled score of at least 425 where the scores range from 200-800 or a passing score of at least 75 when the range is from 0-100 on the National Veterinary Technician Examination or other examination similar in nature and scope as the Board from time to time will adopt.

(a) Such previous scores must be reported to the Georgia Board of Veterinary Medicine by the Interstate Reporting Service.

(b) Candidates desiring to transfer scores must pay all applicable fees.

(4) Proof of a passing score on the Georgia Veterinary Technician Law Exam.

(5) All applications for licensure expire one year from the date of receipt of the application and non-refundable fee.

(6) Licenses shall be renewable biennially by December 31 of the year in which the license expires.

(a) Licenses must be renewed within one year after expiration date with the payment of the renewal and late fees.

(b) Failure to comply voids the license.

Cite as Ga. Comp. R. & Regs. R. 700-6-.01

AUTHORITY: O.C.G.A. §§ 43-1-25**,** 43-50-21**,** 43-50-52(2)(D)**,** 43-50-110**.**

HISTORY: Original Rule entitled "Application for Registration of Animal Technician" adopted. F. Oct. 8, 1974; eff. Oct. 28, 1974.

Amended: F. Apr. 16, 1976; eff. May 6, 1976.

Repealed: New Rule entitled "Application for Registration of Veterinary Technicians" adopted. F. Aug. 31, 1984; eff. Sept. 20, 1984.

Amended: F. Nov. 10, 1998; eff. Nov. 30, 1998.

Repealed: New Rule of same title adopted. F. Apr. 8, 2002; eff. Apr. 28, 2002.

Repealed: New Rule of same title adopted. F. Apr. 3, 2003; eff. Apr. 23, 2003.

Repealed: New Rule of same title adopted. F. Apr. 8, 2004; eff. Apr. 28, 2004.

Repealed: New Rule of same title adopted. F. Aug. 5, 2004; eff. Aug. 25, 2004.

Amended: F. Feb. 4, 2010; eff. Feb. 24, 2010.

Repealed: New rule of same title adopted. F. Jun. 19, 2012; eff. Jul. 9, 2012.

Amended: Mar. 1, 2023; eff. Mar. 21, 2013.

Amended: New title "Application for Veterinary Technician License." F. Mar. 24, 2021; eff. Apr. 13, 2021.

Department 700. RULES OF GEORGIA STATE BOARD OF VETERINARY MEDICINE

Chapter 700-7. RENEWAL OF LICENSE

700-7-.01 Renewal of License

(1) Every person who holds a valid license, as issued by the Board, shall immediately upon issuance thereof be deemed registered with the Board and be issued a certificate of registration. Said license shall expire on December 31 of the even numbered years and shall be renewable biennially in accordance with the Official Code of Georgia Annotated Section 43-50-40 upon payment of the biennial license fees. Any licensee whose address changes must update their address information online via the Board website or notify the Board in writing within 30 days of that change of address.

(2) The payment of the renewal fee for a licensed veterinarian on active duty with any branch of the armed forces of the United States shall be waived for a period of time not to exceed when the licensee is on active duty with any branch of the armed forces of the United States.

(3) Any service member as defined in O.C.G.A. § 15-12-1 whose license to practice veterinary medicine or as a veterinary technician expired while serving on active duty outside the state shall be permitted to practice veterinary medicine or as a veterinary technician in accordance with the expired license and shall not be charged with a violation relating to such practice on an expired license for a period of six (6) months from the date of her or her discharge from active duty or reassignment to a location within the state. Any such service member shall be entitled to renew such expired license without penalty within six (6) months after the date of her or her discharge from active duty or reassignment to a location with the state. The service member must present to the board a copy of the official military orders or a written verification signed by the service members commanding officer to waive any charges.

Cite as Ga. Comp. R. & Regs. R. 700-7-.01

AUTHORITY: O.C.G.A. §§ 43-1-25**,** 43-1-31**,** 43-50-21**,** 43-50-40**;** 43-50-110**.**

HISTORY: Original Rule entitled "Renewal of License" was filed on October 5, 1974; effective October 28, 1974.

Amended: Filed April 16, 1976; effective May 6, 1976.

Amended: Rule repealed and a new Rule of the same title adopted. Filed August 31, 1984: effective September 20, 1984.

Amended: Rule repealed and a new Rule of the same title adopted. Filed June 18, 1985 effective July 8,1985.

Amended: Filed September 10, 1987; effective September 30, 1987.

Repealed: New Rule of same title adopted. F. Apr. 8, 2004; eff. Apr. 28, 2004.

Repealed: New Rule of same title adopted. F. Oct. 6, 2005; eff. Oct. 26, 2005.

Repealed: New Rule of same title adopted. F. Aug. 8, 2011; eff. Aug. 28, 2011.

Amended: F. April 10, 2012; eff. April 30, 2012.

Amended: F. Mar. 24, 2021; eff. Apr. 13, 2021.

700-7-.02 Reinstatement of Expired Licenses

(1) Any license issued by the Board which has not been renewed by the end of the established late renewal period shall be administratively lapsed for failure to renew. Such failure to renew shall have the same force and effect as a revocation of said license as provided in Sec. 43-1-19(1) of the Official Code of Georgia Annotated. Licenses administratively lapsed for failure to renew may, in the Board's discretion, be reinstated; and, as a condition thereof, the Board may impose any disciplinary or corrective method provided by law.

(2) For purposes of this regulation, the administrative lapsing of license for failure to renew shall not be treated as a disciplinary action or contested case.

(3) To return a license to active status, an individual shall submit a complete application for reinstatement, which shall include, but may not be limited to, the following:

(a) A detailed resume of the applicant's work experience since the date the license was last renewed.

(b) Proof of completion of continuing education within the two years prior to seeking reinstatement as follows:

1) Veterinarians and veterinary faculty must submit proof of having completed a minimum of thirty (30) hours of Board approved continuing education as required in Board Rule 700-7-.03; and,

2) Veterinary technicians must submit proof of having completed a minimum of ten (10) hours of Board approved continuing education as required in Board Rule 700-7-.04.

(c) An applicant for reinstatement who has been practicing outside of the State of Georgia must furnish verification of licensure from all recognized licensing jurisdictions where the applicant is or has been licensed to practice veterinary medicine or veterinary technology.

(4) A reinstatement applicant may be required to retake the national examination or a species specific examination if the applicant has not engaged in the active practice of veterinary medicine within the past 5 years.

Cite as Ga. Comp. R. & Regs. R. 700-7-.02

AUTHORITY: O.C.G.A. §§ 43-1-19(a)(1), (2), (g), 43-1-25, 43-50-21, 43-50-110, 43-50-40, 43-50-41(a)(1), 43-50-41(a)(2).

HISTORY: Original Rule entitled "Reinstatement of Expired Licenses" adopted. F. June 18, 1985; eff. July 8, 1985.

Repealed: New Rule of same title adopted. F. June 15, 2009; eff. July 5, 2009.

Amended: F. Apr. 13, 2017; eff. May 3, 2017.

Amended: F. Mar. 24, 2021; eff. Apr. 13, 2021.

700-7-.03 Continuing Veterinary Education

The Georgia State Board of Veterinary Medicine in accordance with the provisions of State Law and for the purpose of establishing certain minimum standards for continuing education in the best interest of and for the protection of the public health, safety and welfare hereby adopts the following rule:

(a) General Requirements:

1. Each veterinarian and veterinary faculty member licensed to practice in the State of Georgia must obtain thirty (30) hours of Board approved continuing education per biennium for license renewal.

(i) Of the thirty (30) hours required, two (2) per renewal period must be acquired in Georgia laws, rules and professionalism, which may be acquired in person or by live, interactive webinars that include measures to ensure active participation throughout the course. Georgia licensees who do not practice in the State of Georgia are not required to meet the two (2) hour requirement in Georgia laws, rules and professionalism; and

(ii) Eighteen (18) of the thirty (30) hours must include scientific subject matter. Scientific subject matter includes all conventional medical and surgical sub-categories that are evidence based in addition to the science of diagnosis, treatment and prevention of disease as it relates directly to patients and includes a comprehensive range of the practice of veterinary medicine.

2. At the time of license renewal, each veterinarian shall certify to the Georgia State Board of Veterinary Medicine that he/she has completed the continuing education required for license renewal.

3. Veterinarians and veterinary faculty member licensed during the first year of a biennium must obtain fifteen (15) hours of continuing education and is not required to meet the two (2) hour requirement in Georgia laws, rules and professionalism. Veterinarians and veterinary faculty members licensed during the second year of a biennium is exempt from obtaining continuing education for that renewal period. After this time period, the entire thirty (30) hours is required for each renewal.

4. In the event that a veterinarian or a veterinary faculty member fails to verify or submit documentation of continuing education credits at the same time of renewal of his/her license, the Board will not process his/her renewal until continuing education requirements have been met and proof of such has been received and approved by the Board.

5. If documentation of continuing education is requested in conjunction with any audit and not received by the Board on or before the deadline date provided, the licensee will be subject to disciplinary action.

6. A veterinarian or veterinary faculty member may not carry over continuing education credits from one biennium license renewal period to the next.

7. Each veterinarian or veterinary faculty member must maintain a record of credit hours earned and proof of attendance of such hours for a period of three years from the date of the preceding renewal period and must provide the Board with said documentation upon request.

8. Veterinarians or veterinary faculty members who attend programs where more than one course is taught must maintain proof of the courses attended and the number of hours awarded for each course.

(b) Approved Continuing Education Programs and Hours:

1. Blanket approval is awarded to any National, State and International veterinary association meetings, United States Department of Agriculture and Georgia Department of Agriculture sponsored meeting, Board Certified Specialties programs recognized by the American Veterinary Medical Association, all AVMA accredited veterinary college or school sponsored classes and programs, all AAVSB RACE approved programs, any GVMA constituent organization programs, AAHA programs, programs sponsored by the United States or Southern Animal Health Association and any course approved by another state board.

2. Blanket approval does not apply to any continuing education programs on Georgia laws, rules and professionalism (LEAP). All LEAP courses and any other (non-LEAP) continuing education course which is not offered by a blanket approved organization must be awarded Board approval before the course is offered.

3. Providers may be awarded Board approval for a continuing education course by submitting the following for consideration by the Board:

(i) A continuing education application form;

(ii) A detailed course outline or syllabus;

(iii) A current curriculum vitae or resume must be provided for each speaker or lecturer;

(iv) The procedure to be used for recording attendance; and,

(v) The number of continuing education hours for which the course sponsor requests approval.

4. In addition to the LEAP requirements, the remaining credit hours may be earned as follows:

(i) One (1) hour may be given for each 50 minutes of contact time. Seminars are composed of lectures or labs; welcoming remarks, business sessions, unstructured demonstrations or degree programs are not considered seminars.

(ii) Three (3) hours can be for journal studies where follow-up testing is required. Fifteen (15) hours of interactive computer generated courses will be allowed. Follow-up testing is required.

(iii) A maximum of twelve (12) hours will be allowed per calendar day.

(iv) A maximum of six (6) hours for veterinarians can be acquired through in house training at the licensees' place of employment.

(v) A maximum of ten (10) hours can be acquired through in house training for veterinary faculty at AVMA accredited institutions. For the purposes of this rule, "in house training" refers to programs that are only offered to employees of the institution.

(vi) A maximum of three (3) hours can be acquired by licensees who conducted peer reviews for the Board.

(vii) Two (2) hours of continuing education credit per lecture for a subject area, regardless of the number of times the licensee presents the course, for a maximum of five different subjects.

(c) Continuing Education Audit:

1. During the renewal period, the Board staff will randomly select a percentage of its licensees to audit for continuing education compliance.

2. If selected for continuing education audit, each licensee must submit continuing education records to meet the renewal requirements for that license renewal period.

(d) Provider and Sponsor Criteria: All providers and sponsors must provide the following information to the Board if they have not been awarded blanket approval:

1. Each sponsor or provider shall have an administrator whose responsibility is to maintain the criteria for quality in programming.

2. Providers shall use qualified personnel to develop and present the programs, which shall utilize appropriate instructional materials and resources.

3. Providers shall provide to the Board adequate advanced promotional information, material about target audiences, program content, faculty credentials and fees.

4. Providers shall provide a means of registration of the participants at each program and maintain a record of attendance for a period of three years from the date of the program.

5. Providers shall develop policies and procedures for the management of grievances.

6. Providers shall provide each participant with adequate documentation of his/her successful completion of the program. The documentation shall include:

(i) Name and license number of participant;

(ii) Name of provider;

(iii) Name and title of program to include the date and time each individual course was offered;

(iv) Hours/CEU's completed;

(v) Date of completion; and

(vi) Authorizing signature.

7. All continuing education providers seeking approval of the continuing education program by the Georgia State Board of Veterinary shall submit a current Program Approval Form for each program presented to include all program materials requested. These forms must be complete and should be submitted 60 days in advance in order to be considered by the Board.

Cite as Ga. Comp. R. & Regs. R. 700-7-.03

AUTHORITY: O.C.G.A. §§ 43-1-25**,** 43-50-21**,** 43-50-40**,** 43-50-52**;** 43-50-110**.**

HISTORY: Original Rule entitled "Continuing Veterinary Education" was filed November 4, 1988: effective November 24, 1988.

Amended: F. Dec. 19, 1990: eff. Jan. 8, 1991.

Amended: F. Jun. 20, 1997; eff. Jul. 10, 1997.

Repealed: New Rule of same title adopted. F. Apr. 8, 2002; eff. Apr. 28, 2002.

Repealed: New Rule of same title adopted. F. Feb. 6, 2005; eff. Feb. 26, 2005.

Amended: F. Aug. 24, 2007; eff. Sept. 13, 2007.

Amended: F. Sept. 2, 2008; eff. Sept. 22, 2008.

Repealed: New Rule of the same title adopted. F. Aug. 12, 2010; eff. Sept. 1, 2010.

Repealed: New Rule of the same title adopted. F. Jun. 19, 2012; eff. Jul. 9, 2012.

Amended: F. Nov. 5, 2014; eff. Nov. 25, 2014.

Amended: F. May 26, 2017; eff. June 15, 2017.

Amended: F. Mar. 16, 2018; eff. Apr. 5, 2018.

Amended: F. Mar. 24, 2021; eff. Apr. 13, 2021.

Department 700. RULES OF GEORGIA STATE BOARD OF VETERINARY MEDICINE

Chapter 700-10. FEES

700-10-.01 Fees

(1) The required fee must accompany the appropriate application as noted in the following schedule.

(a) Application fees for:

1. Veterinarian-As set forth on the fee schedule adopted by the Board.

2. Veterinarian Technician-As set forth on the fee schedule adopted by the Board.

3. Faculty Veterinarian-As set forth on the fee schedule adopted by the Board.

4. Temporary Veterinarian License-As set forth on the fee schedule adopted by the Board.

(b) Examination fees for:

1. Veterinarian-As set forth by the International Council for Veterinary Assessment (ICVA).

2. Veterinarian Technician-As set forth by the American Association of Veterinary State Boards (AAVSB).

(c) Renewal Fees for:

1. Veterinarian-As set forth on the fee schedule adopted by the Board.

2. Veterinarian Technician-As set forth on the fee schedule adopted by the Board.

3. Faculty Veterinarian-As set forth on the fee schedule adopted by the Board.

4. Temporary Veterinarian License-As set forth on the fee schedule adopted by the Board.

(d) Renewal Delinquency Fees for:

1. Veterinarian-As set forth on the fee schedule adopted by the Board.

2. Veterinarian Technician-As set forth on the fee schedule adopted by the Board.

3. Faculty Veterinarian-As set forth on the fee schedule adopted by the Board.

(e) Duplicate Licenses for:

1. Veterinarian-As set forth on the fee schedule adopted by the Board.

2. Veterinarian Technician-As set forth on the fee schedule adopted by the Board.

3. Faculty Veterinarian-As set forth on the fee schedule adopted by the Board.

(2) All renewals after December 31st of the renewal year must be accompanied by the delinquent fee plus the renewal fee.

Cite as Ga. Comp. R. & Regs. R. 700-10-.01

AUTHORITY: O.C.G.A. §§ 43-1-7**;** 43-1-25**;** 43-50-21**;** 43-50-110**.**

HISTORY: Original Rule entitled "Fees" was filed on August 26, 1982; effective September 15, 1982.

Amended: Filed June 22, 1983; effective July 12, 1983.

Amended: Filed January 10, 1984; effective January 30, 1984.

Amended: Rule repealed and a new Rule of the same title adopted. Filed July 31, 1984; effective August 20, 1984.

Amended: Filed June 18, 1985; effective July 8, 1985.

Amended: Filed April 6, 1987; effective April 26, 1987.

Amended: F. Oct. 20, 1992; eff. Nov. 9, 1992.

Repealed: New Rule, same title, adopted. F. Aug. 20, 1993; eff. Sept. 9, 1993.

Amended: F. Nov. 10, 1998; eff. Nov. 30, 1998.

Amended: F. Mar. 24, 2021; eff. Apr. 13, 2021.

Department 700. RULES OF GEORGIA STATE BOARD OF VETERINARY MEDICINE

Chapter 700-11. INACTIVE STATUS

700-11-.01 Inactive Status

(1) A licensee who wishes to discontinue the practice of veterinary medicine may apply for an "inactive license." A veterinarian or veterinary technician holding an "inactive license" may not practice.

(2) A licensee who holds a valid current active license to practice in the State of Georgia may request the license be placed on inactive status under the following provisions:

(a) The Board receives a written request from the licensee requesting inactive status. The written request shall contain the notarized signature of the licensee and contain the following statements:

1. "I understand that with an inactive license I shall not engage in the practice of veterinary medicine as a veterinarian or veterinary technician and shall not hold myself out to the public as being available to provide veterinary services."

2. "I understand that I am not required to renew said license while on inactive status."

3. "I understand I am not required to obtain the continuing education credits while on inactive status unless I request to be placed on active status."

4. "I understand that to practice or to hold oneself out as available to practice veterinary medicine with an inactive license is unlicensed practice and I would be subject to disciplinary action."

(b) A licensee holding an inactive license may seek active status.

To reinstate the license to active status the licensee must:

1. Submit a reinstatement application and any other information required by the Board.

2. Submit proof of attendance at not less than 30 hours (veterinarian and veterinary faculty) or 10 hours (veterinary technician) of Board approved continuing education within two years of the date of the request to reinstate.

3. Provide evidence acceptable to the Board that the licensee has not had a license revoked, suspended, disciplined or otherwise sanctioned in any other jurisdiction that ever issued a license to practice.

4. Provide evidence acceptable to the Board that licensee has not been convicted of a felony or any crime involving moral turpitude.

5. Pay the reinstatement fee, as determined by the Board in the fee schedule.

6. Reinstatement is in the discretion of the Board.

Cite as Ga. Comp. R. & Regs. R. 700-11-.01

AUTHORITY: O.C.G.A. §§ 43-1-25**,** 43-50-21**,** 43-50-40(c)**,** 43-50-110**.**

HISTORY: Original Rule entitled "Inactive Status" adopted. F. Jan. 14, 2003; eff. Feb. 3, 2003.

Amended: F. Mar. 1, 2013; eff. Mar. 21, 2013.

Amended: F. Mar. 24, 2021; eff. Apr. 13, 2021.

Department 700. RULES OF GEORGIA STATE BOARD OF VETERINARY MEDICINE

Chapter 700-12. MINIMUM STANDARDS

700-12-.01 Definitions

(1) "Appropriately" for the purposes of these rules means the expected level of care and environmental quality in accordance with the animal species and the scope of veterinary services being offered, as determined by the State Board of Veterinary Medicine.

(2) "As appropriate" for the purposes of these rules means the expected level of care and environmental quality in accordance with the animal species and the scope of veterinary services being offered, as determined by the State Board of Veterinary Medicine.

(3) "Clean and orderly" for the purposes of these rules means the expected level of care and environmental quality in accordance with the animal species and the scope of veterinary services being offered, as determined by the State Board of Veterinary Medicine.

(4) "Good State" for the purposes of these rules means the expected level of care and environmental quality in accordance with the animal species and the scope of veterinary services being offered, as determined by the State Board of Veterinary Medicine.

(5) "Proper" for the purposes of these rules means the expected level of care and environmental quality in accordance with the animal species and the scope of veterinary services being offered, as determined by the State Board of Veterinary Medicine.

(6) "Veterinary facility" means any premises owned or operated by a veterinarian or his or her employer where the practice of veterinary medicine occurs, including but not limited to veterinary hospitals, clinics, or mobile clinics; provided, however, that such does not include a client's private property where a licensed veterinarian treats the client's animals.

Cite as Ga. Comp. R. & Regs. R. 700-12-.01

AUTHORITY: O.C.G.A. §§ 43-1-25**,** 43-50-21**,** 43-50-41**,** 43-50-55**,** 43-50-110**.**

HISTORY: Original Rule entitled "Definitions" adopted. F. Apr. 8, 2004; eff. Apr. 28, 2004.

Amended: F. Mar. 24, 2021; eff. Apr. 13, 2021.

700-12-.02 Facility Standards

(1) A licensed veterinarian employed at a veterinary facility or mobile clinic is responsible to assure that the following criteria pertaining to facilities are met:

(a) Facility must maintain appropriate federal, state and local permits.

(b) Facility must be appropriately secured.

(c) Facility must be sanitary.

(d) Facility must be well ventilated.

(e) Facility must be appropriately illuminated.

(f) Facility must be in a good state of repair.

(g) Facility walls and floors must be easily sanitized.

(h) Facility must have means for disposal of dead animals, tissue, hazardous materials, medical waste which must meet local and state requirements.

(i) Facility must have exterior legible sign.

(j) Facility must keep grounds clean and orderly, if applicable.

(k) Facility must have a restroom in working order which is maintained in a clean and orderly manner. Mobile clinics are exempt from this requirement.

(l) Facility must have clean and orderly receiving area.

(m) Facility must have a telephone answering machine or answering service available after business hours.

(n) Facility must have a holding or housing area with proper sanitation, ventilation, lighting, size, and temperature appropriate for the animal species. Each animal must be contained in a secure manner identified as appropriate and any contagious animals must be isolated as appropriate.

(o) Facility must have appropriate waste receptacles available.

(p) Facility must have effective insect and rodent control.

(q) Facility must store pharmaceuticals, biologicals, reagents and lab samples in accordance with label directions or other instructions.

(r) Facility must have fire extinguisher with current annual inspection.

(s) Facility must post in a prominent public area a copy of the current license issued by the Georgia State Board of Veterinary Medicine or current online verification of licensure from the Board website for each veterinarian and veterinary technician working at the facility.

Cite as Ga. Comp. R. & Regs. R. 700-12-.02

AUTHORITY: O.C.G.A. §§ 43-1-25**,** 43-50-21**,** 43-50-55**,** 43-50-90(a)**,** 43-50-110**.**

HISTORY: Original Rule entitled "Facility Standards" adopted. F. Apr. 8, 2004; eff. Apr. 28, 2004.

Amended: F. Sep. 22, 2014; eff. Oct. 12, 2014.

Amended: F. Mar. 24, 2021; eff. Apr. 13, 2021.

700-12-.03 [Repealed]

Cite as Ga. Comp. R. & Regs. R. 700-12-.03

AUTHORITY: O.C.G.A. §§ 43-1-25**,** 43-50-21**,** 43-50-41**.**

HISTORY: Original Rule entitled "Housing" adopted. F. Apr. 8, 2004; eff. Apr. 28, 2004.

Repealed: F. Mar. 24, 2021; eff. Apr. 13, 2021.

700-12-.12 [Repealed]

Cite as Ga. Comp. R. & Regs. R. 700-12-.12

AUTHORITY: O.C.G.A. §§ 43-1-25**,** 43-50-21**,** 43-50-41**.**

HISTORY: Original Rule entitled "Renewal Statement" adopted. F. Apr. 8, 2004; eff. Apr. 28, 2004.

Repealed: F. Mar. 24, 2021; eff. Apr. 13, 2021.

Department 750. RULES OF STATE BOARD OF EXAMINERS FOR CERTIFICATION OF WATER AND WASTEWATER TREATMENT PLANT OPERATORS AND LABORATORY ANALYSTS

Chapter 750-2. DEFINITIONS

750-2-.01 Definitions

The following words or phrases as used in these Rules shall, unless a different meaning is required by context, have the following meaning:

(a) "Act" means the certification of Water and Wastewater Treatment Plant Operators and Laboratory Analysts Act, approved April 8, 1969, and as hereafter may be amended.

(b) "Board" or "Board of Examiners" means the State Board of Examiners for Certification of Water and Wastewater Treatment Plant Operators and Laboratory Analysts.

(c) "Certificate" or "Certification" means a document issued by the Board stating that the operator or laboratory analyst has met the requirements for the specified classification of the certification program.

(d) "Course(s)" means educational curriculum as approved by the Board.

(e) "Division" means the Environmental Protection Division of the Georgia Department of Natural Resources.

(f) "Laboratory analyst" means any person who performs a laboratory test in conjunction with the operation of a public water system or wastewater treatment plant.

(g) "Laboratory test" means any test performed in conjunction with the operation of a public water supply or wastewater treatment plant that is required for regulatory reporting purposes excluding dissolved oxygen, pH, chlorine residual, turbidity, temperature and specific conductance. Tests performed in a commercial environmental laboratory approved under the Division's "Rules for Commercial Environmental Laboratories" are also excluded.

(h) "Operational/analytical topics" means topics of instruction that directly relate to the performance of the duties of a water operator, wastewater operator, distribution operator, collection system operator, or laboratory analyst.

(i) "Operator" means any person who performs operation duties, as defined by the Board, at wastewater treatment systems, wastewater collection systems, water distribution systems, public water systems, or water treatment systems.

(j) "Operator in responsible charge" means any operator who has direct general charge of the day-to-day field operation of a wastewater treatment system, wastewater collection system, water distribution system, or public water system, and who is responsible for the quality of the treated water or wastewater effluent.

(k) "Operation duties":

1. for a wastewater treatment system and for a water treatment system means day-to-day process control decisions which may affect the treatment and, therefore, quality of the treated water and/or wastewater effluent; and

2. for a wastewater collection system or water distribution system means the onsite supervision of the cleaning, maintaining, and repairing of the system.

(l) "Points" means continuing education credits required by the Board for certificate renewal. The number of points awarded by the Board for a course or conference may or may not be the same as the number of contact hours in the course or conference.

(m) "Process Control decisions" means decisions which may affect the treatment and, therefore, quality of the treated water and/or wastewater effluent.

(n) "Public water supply system" means the system of pipes, structures, and facilities through which water is obtained and treated, to be offered to the public for household use or for any other public consumption.

(o) "Supervision" means accountability for the work of the person being supervised.

(p) "System" means all integral unit operations and processes, including conduits, appurtenances, machine, control elements and laboratory functions.

(q) "Trainee" means an individual engaged in a training period. A trainee is not required to hold a certificate and may not perform operation duties or perform laboratory test, unless under the direct supervision of a certified operator or a certified laboratory analyst.

(r) "Training period" means a period of time during which a trainee is learning operator or laboratory analyst duties under the direction of a certified operator or laboratory analyst.

(s) "Wastewater collection system" means the system of sanitary sewers, pipes, manholes, pumps, and other such apparatus used to convey sewage to wastewater treatment plants.

(t) "Wastewater treatment" means any biological, physical/chemical, or settling processes which remove pollutants from industrial or domestic wastewaters prior to discharge to a stream, sewer or land. It includes only those processes permitted by the Division or an approved local government under the Georgia Water Quality Control Act or its successor. It excludes those processes that consist solely of one or more of the following: screening, pH adjustment, sedimentation processes without mechanical solids removal, septic tanks, grease traps or oil-water separators, unless specifically required in a permit.

(u) "Wastewater treatment plant" means the facilities provided for the treatment and disposal of wastewater, including industrial process wastewater, as classified by the Division.

(v) "Wastewater treatment system" means the combination of a wastewater collection system and a wastewater treatment plant.

(w) "Water distribution system" means the system of pipes, pumps, valves, and other such apparatus used to distribute water to the public.

(x) "Water treatment plant" means the portion of the water supply system which in some way alters the physical, chemical, or bacteriological quality of the water as classified by the Division and as defined in the Act.

(y) "Water treatment system" means a public water supply system as classified by the Division and as defined in the Act.

(z) "Webinar" means a live online educational presentation that is instructor led with student interaction, where student participation is monitored and verified.

Cite as Ga. Comp. R. & Regs. R. 750-2-.01

AUTHORITY: O.C.G.A. §§ 43-51-5**,** 43-51-6**,** 43-51-6.1**,** 43-1-4**,** 43-1-25**.**

HISTORY: Original Rule entitled "Definitions" was filed on October 8, 1971; effective October 28, 1971.

Amended: Filed August 26, 1976; effective September 15, 1976.

Amended: Rule repealed and a new Rule of same title adopted. Filed November 19, 1980; effective December 9, 1980.

Amended: Filed July 8, 1988; effective July 28, 1988.

Repealed: New Rule, same title, adopted. F. Dec. 17, 1991; eff. Jan. 6, 1992.

Repealed: New Rule of same title adopted. F. Feb. 5, 1993; eff. Feb. 25, 1993.

Repealed: New Rule, same title, adopted. F. Sept 20, 1993; eff. Oct. 10, 1993.

Amended: ER 750-2-0.1 -.01 was f. Jun. 7, 1994; eff. Jul. 1, 1994, as specified by the Agency, to remain in effect for 120 days or until the effective date of a Permanent Rule covering the same subject matter superseding said ER, as specified by the Agency.

Amended: Permanent Rule adopted. F. Jul. 27, 1994; eff. Aug. 16, 1994.

Amended: F. Sept. 11, 1995; eff. Oct. 1, 1995.

Amended: F. Dec. 2, 1997; eff. Dec. 22, 1997.

Amended: F. Jan. 11, 2001; eff. Jan. 31, 2001.

Amended: F. Dec. 8, 2020; eff. Dec. 28, 2020.

Amended: F. Mar. 10, 2021; eff. Mar. 30, 2021.

Department 750. RULES OF STATE BOARD OF EXAMINERS FOR CERTIFICATION OF WATER AND WASTEWATER TREATMENT PLANT OPERATORS AND LABORATORY ANALYSTS

Chapter 750-6. EXPIRATION, RENEWAL, AND CONTINUING EDUCATION

750-6-.04 Education Providers, Courses, and Points

(1) The Board shall maintain a list of currently approved course providers in accordance with eligibility criteria published by the Board. Course providers must be approved by the Board or its designee in order for applicants to receive credit. The Board may also elect to approve individual courses. A request by a course provider for approval must be submitted on a form that may be obtained from the Board and must be accompanied by the appropriate fee and supporting documents as required by the Board (See Fee Schedule). Effective July 1, 2013, course providers shall agree to provide rosters in electronic format of all attendees for all courses approved by the Board. The Professional Licensing Boards Division shall provide the electronic format for use in submitting rosters. All course approvals shall expire on or before January 31 of even-numbered years.

(2) Providers of Basic and Advanced courses must teach such courses in a traditional classroom setting or by Webinar, as defined in Rule 750-2-.01. These courses are required for applicants to be eligible to sit for a certification examination.

(3) Education Providers desiring Board consideration for approval must submit to the Board a completed Registration Form and required information to the Board; and

(4) The Board may conduct an audit of Education Providers and education courses to ensure compliance.

(5) The Board may require Education Providers to submit an electronic roster of attendees for all courses approved by the Board.

(6) Continuing Education Courses.

Approved education courses expire January 31 of even numbered years. The Board may approve continuing education courses for Management Safety, Water, Wastewater, or both Water and Wastewater, which are offered in person, online, through correspondence courses, and Webinars and webcasts subject to the following:

(a) Submission of completed application and appropriate fee; and

(b) documentation of topic(s) to be taught, indicating hours of instruction for each topic; and

(c) credentials of the educators/presenters involved; and

(d) name of the moderator documenting on-site attendance/registration.

(e) Only operational or regulatory topics will be approved for Webinars or webcasts.

(f) Certificates of completion must be presented to attendees who complete the Webinars or webcast.

(7) Determination of Continuing Education Points.

(a) Points shall be awarded in whole numbers. No partial points shall be awarded for courses that total less than whole hours.

(b) Traditional classroom courses and Webinars on operational, analytical, safety and management topics shall be granted one point per contact hour up to a maximum of 6 points per day and 12 points per event.

(c) Online courses on operational, analytical, safety, and management topics shall be granted one-half point per contact hour up to a maximum of 6 points, unless the course is a Webinar, or unless the course provider demonstrates greater credit is justified through beta testing results, or unless the course provider is IACET (International Association for Continuing Education and Training) approved.

Cite as Ga. Comp. R. & Regs. R. 750-6-.04

AUTHORITY: O.C.G.A. §§ 43-51-5**,** 43-51-6**,** 43-51-6.1**,** 43-1-4**,** 43-1-25**.**

HISTORY: Original Rule entitled "Operator Certification" was filed on October 8, 1971; effective October 28, 1971.

Amended: Rule repealed. F. November 19, 1980; eff. December 9, 1980.

Repealed: New Rule entitled "Basic, Advanced and Continuing Education Courses" adopted. F. Dec. 17, 1991; eff. Jan. 6, 1992.

Repealed: New Rule, same title adopted. F. Jan. 11, 2001; eff. Jan. 31, 2001.

Repealed: New Rule of same title adopted. F. June 16, 2005; eff. July 6, 2005.

Repealed: New Rule of same title adopted. F. Feb. 22, 2012; eff. Mar. 13, 2012.

Amended: New title "Education Providers, Courses, and Points." F. Jan. 14, 2021; eff. Feb. 3, 2021.

Amended: F. Mar. 10, 2021; eff. Mar. 30, 2021.