PROPOSED AMENDMENTS TO THE RULES OF THE DEPARTMENT OF NATURAL RESOURCES ENVIRONMENTAL PROTECTION DIVISION RADIOACTIVE MATERIALS, CHAPTER 391-3-17

The Rules of the Department of Natural Resources, Chapter 391-3-17, Radioactive Materials, are hereby amended, added to, repealed in part, revised, as hereinafter explicitly set forth in the attached amendments, additions, partial repeals, and revisions for specific rules, or such subdivisions thereof as may be indicated.

[Note: Underlined text is proposed to be added. Lined-through text is proposed for deletion.]

Rule 391-3-17-.03(12), "Precautionary Procedures," is being amended to read as follows:

(12) **Precautionary Procedures**

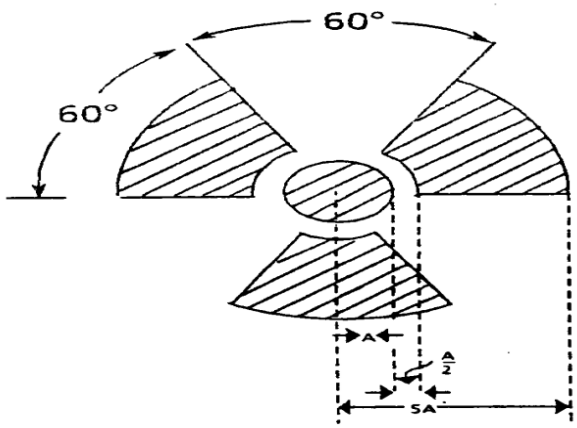
(a) Caution Signs.

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.

[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.

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, the NRC Headquarters Operations Center 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(14~~6~~)(~~j~~).

5. Each licensee shall:

(i) Establish, maintain, and retain written procedures for safely opening packages in which radioactive material is received; and

[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.

(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.

Rule 391-3-17-.03(15), "Reports," is being amended to read as follows:

(15) **Reports**

(a) Reports of Stolen, Lost, or Missing Licensed Sources of Radiation.

1. Telephone. Each licensee shall report to the Division and the NRC Headquarters Operation Center 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 and the NRC Headquarters Operation Center 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 and the NRC Headquarters Operation Center 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 and the NRC Headquarters Operation Center 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. A~~n~~ 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 and the NRC Headquarters Operation Center 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 and the NRC Headquarters Operation Center 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~~paragraph must be made as follows:

(i) Licensees shall make reports required by (15)(b)~~(~~1.~~)~~ and ~~(~~2.~~)~~ by telephone to the Division and the NRC Headquarters Operation Center. 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 and USNRC, Region II, 245 Peachtree Center Avenue, NE., Suite 1200, Atlanta, GA 30303–1257. 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 and the NRC Headquarters Operation Center 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

[7] For purposes of these Regulations, the U.S. Environmental Protection Agency Standards apply only to source material mills and nuclear power plants.

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) [Reserve]

(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~~paragraph. 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
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.

Rule 391-3-17-.05(22), "Training for Radiation Safety Officer," is amended to read as follows:

(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~~paragraph, 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 licensee. 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.

Rule 391-3-17-.05(24), "Training for an Authorized Nuclear Pharmacist," is amended to read as follows:

(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~~Accreditation 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.

Rule 391-3-17-.05(26), "Provisions for Experienced Radiation Safety Officer, Teletherapy or Medical Physicist, Authorized Medical Physicist, Authorized User, Nuclear Pharmacist, and Authorized Nuclear Pharmacist," is amended to read as follows:

(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 in accordance with~~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~~paragraph 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.

Rule 391-3-17-.05(64), "Training for Ophthalmic Use of Strontium-90," is amended to read as follows:

(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).

Rule 391-3-17-.05(75), "Full Calibration Measurements on Gamma Stereotactic Radiosurgery Units," is amended to read as follows:

(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 microswitches;

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).

Rule 391-3-17-.05(78), "Periodic Spot-Checks for Gamma Stereotactic Radiosurgery Units," is amended to read as follows:

(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 microswitches;

(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~~paragraph 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).

Rule 391-3-17-.05(111), "Records of Periodic Spot-Checks for Gamma Stereotactic Radiosurgery Units," is amended to read as follows:

(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 microswitches, 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.

Rule 391-3-17-.08(15), "Conditions of Specific Licenses Issued Under (12)," is amended to read as follows:

(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<u>5</u>)] 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.

Rule 391-3-17-.09(5), "Operation of Irradiators," is amended to read as follows:

(5) **Operation of Irradiators.**

(a) Training.

1. Before an individual is permitted to operate an irradiator without a supervisor present, the individual must be instructed in the following:

(i) The fundamentals of radiation protection applied to irradiators (including the differences between external radiation and radioactive contamination, units of radiation dose, Division's dose limits, why large radiation doses must be avoided, how shielding and access controls prevent large doses, how an irradiator is designed to prevent contamination, the proper use of survey meters and personnel dosimeters, other radiation safety features of an irradiator, and the basic function of the irradiator);

(ii) The requirements of this Rule and Rule 391-3-17-.07 that are applicable to the irradiator;

(iii) The operation of the irradiator;

(iv) Those operating and emergency procedures listed in (5)(b) of this Rule that the individual is responsible for performing; and

(v) Case histories of accidents or problems involving irradiators.

2. Before an individual is permitted to operate an irradiator without a supervisor present, the individual shall pass a written test on the instruction received, consisting primarily of questions based on the licensee's operating and emergency procedures that the individual is responsible for performing and other operations necessary to safely operate the irradiator without supervision.

3. Before an individual is permitted to operate an irradiator without a supervisor present, the individual must have received on-the-job training or simulator training in the use of the irradiator as described in the license application. The individual shall also demonstrate the ability to perform those portions of the operating and emergency procedures that he or she is to perform.

4. The licensee shall conduct safety reviews for irradiator operators at least annually. The licensee shall give each operator a brief written test on the information. Each safety review must include, to the extent appropriate, each of the following:

(i) Changes in operating and emergency procedures since the last review, if any;

(ii) Changes in Regulations and license conditions since the last review, if any;

(iii) Reports on recent accidents, mistakes, or problems that have occurred at irradiators, if any;

(iv) Relevant results of inspections of operator safety performance;

(v) Relevant results of the facility's inspection and maintenance checks; and

(vi) A drill to practice an emergency or abnormal event procedure.

5. The licensee shall evaluate the safety performance of each irradiator operator at least annually to ensure that the Regulations, license conditions, and operating and emergency procedures are followed. The licensee shall discuss the results of the evaluation with the operator and shall instruct the operator on how to correct any mistakes or deficiencies observed.

6. Individuals who will be permitted unescorted access to the radiation room of the irradiator or the area around the pool of an underwater irradiator, but who have not received the training required for operators and the Radiation Safety Officer, shall be instructed and tested in any precautions they should take to avoid radiation exposure, and procedures or parts of procedures listed in (5)8. of this Rule that they are expected to perform or comply with, and their proper response to alarms required in this Rule. Tests may be oral.

7. Individual who must be prepared to respond to alarms required by (4)(b)2., (4)(b)10., (4)(d)1., (4)(e)1., and (5)(e)2. of this Rule shall be trained and tested on how to respond. Each individual shall be retested at least once a year. Tests may be oral.

(b) Operating and emergency procedures.

1. The licensee shall have and follow written operating procedures for the following:

(i) Operation of the irradiator, including entering and leaving the radiation room;

(ii) Use of personnel dosimeters;

(iii) Surveying the shielding of panoramic irradiators;

(iv) Monitoring pool water for contamination while the water is in the pool and before release of pool water to unrestricted areas;

(v) Leak testing of sources;

(vi) Inspection and maintenance checks required by (5)(f) of this Rule;

(vii) Loading, unloading, and repositioning sources, if the operations will be performed by the licensee; and

(viii) Inspection of movable shielding required by (4)(b)8. of this Rule, if applicable.

2. The licensee shall have and follow emergency or abnormal event procedures, appropriate to the irradiator type, for the following:

(i) Source stuck in the unshielded position;

(ii) Personnel overexposures;

(iii) A radiation alarm from the product exit portal monitor or pool monitor;

(iv) Detection of leaking sources, pool contamination, or alarm cause by contamination of pool water;

(v) A low or high water level indicator, an abnormal water loss, or leakage from the source storage pool;

(vi) A prolonged loss of electrical power;

(vii) A fire alarm or explosion in the radiation room;

(viii) An alarm indicating unauthorized entry into the radiation room, area around the pool, or another alarm area;

(ix) Natural phenomena, including an earthquake, tornado, flooding, or other phenomena as appropriate for the geographical location of the facility; and

(x) The jamming of the automatic conveyor system.

3. The licensee may revise operating and emergency procedures without Division approval only if all of the following conditions are met:

(i) The revisions do not reduce the safety of the facility,

(ii) The revisions are consistent with the outline or summary of procedures submitted with the license application,

(iii) The revisions have been reviewed and approved by the Radiation Safety Officer, and

(iv) The users or operators are instructed and tested on the revised procedures before they are put into use.

(c) Personnel monitoring.

1. Irradiator operators shall wear a personnel monitoring device while operating a panoramic irradiator or while in the area around the pool of an underwater irradiator. The personnel monitoring device processor must be capable of detecting high energy photons in the normal and accident dose ranges. Each personnel monitoring device must be assigned to and worn only by one individual. Film Badges must be replaced at least monthly and all other personnel monitoring devices must be processed at least quarterly. All personnel dosimeters must be evaluated at least quarterly or promptly after replacement, whichever is more frequent.

2. Other individuals who enter the radiation room of a panoramic irradiator shall wear a dosimeter, which may be a pocket dosimeter. For groups of visitors, only two people who enter the radiation room are required to wear dosimeters. If pocket dosimeters are used to meet the requirements of this paragraph, a check of their response to radiation must be done at least annually. Acceptable dosimeters must read within plus or minus 30 percent of the true radiation dose.

(d) Radiation surveys.

1. A radiation survey of the area outside the shielding of the radiation room of a panoramic irradiator must be conducted with the sources in the exposed position before the facility starts to operate. A radiation survey of the area above the pool of pool irradiators must be conducted after the sources are loaded but before the facility starts to operate. Additional radiation surveys of the shielding must be performed at intervals not to exceed 3 years and before resuming operations after addition of new sources or any modification to the radiation room shielding or structure that might increase dose rate.

2. If the radiation levels specified in (4)(c) of this Rule are exceeded, the facility must be modified to comply with the requirements of (4)(c) of this Rule.

3. Portable radiation survey meters must be calibrated at least annually to an accuracy of ±20 percent of the gamma energy of the sources in use. The calibration must be done at two points on each scale or, for digital instruments, at one point per decade over the range that will be used. Portable radiation survey meters must be of a type that does not saturate and read zero at high radiation dose rates.

4. Water from the irradiator pool, other potentially contaminated liquids, and sediments from pool vacuuming must be monitored for radioactive contamination before release to unrestricted

areas. Radioactive concentrations must not exceed those specified in 10 CFR Part 20, Table 2, Column 2 or Table 3 of Appendix B, "Annual Limits on Intake (ALIs) and Derived Air Concentrations (DACs) of Radionuclides for Occupational Exposure; Effluent Concentrations; Concentrations for Release to Sewerage".

5. Before releasing resins for unrestricted use, they must be monitored before release in an area with a background level of less than 0.5 millirem (0.005 millisievert) per hour. The resins may be released only if the survey does not detect radiation levels above background radiation levels. The survey meter used must be capable of detecting radiation levels of 0.5 millirem (0.005 millisievert) per hour.

(e) Detection of leaking sources.

1. Each dry-source-storage sealed source must be tested for leakage at intervals not to exceed six months using a leak test kit or method approved by the Division, an Agreement State, or the U.S. Nuclear Regulatory Commission. In the absence of a certificate from a transferor that a test has been made within the six months before the transfer, the sealed source may not be used until tested. The test must be capable of detecting the presence of 0.005 microcurie (200 becquerels) of radioactive material and must be performed by a person approved by the Division, an Agreement State, or the U.S. Nuclear Regulatory Commission to perform the test.

2. For pool irradiators, sources may not be put into the pool unless the licensee tests the sources for leaks or has a certificate from a transferor that a leak test has been done within the six months before the transfer. Water from the pool must be checked for contamination each day the irradiator operates. The check may be done either by using a radiation monitor on a pool water circulating system or by analysis of a sample of pool water. If a check for contamination is done by analysis of a sample of pool water, the results of the analysis must be available within 24 hours. If the licensee uses a radiation monitor on a pool water circulating system, the detection of above normal radiation levels must activate an alarm. The alarm set-point must be set as low as practical, but high enough to avoid false alarms. The licensee may reset the alarm set-point to a higher level if necessary to operate the pool water purification system to clean up contamination in the pool if specifically provided for in written emergency procedures.

3. If a leaking source is detected, the licensee shall arrange to remove the leaking source from service and have it decontaminated, repaired, or disposed of by the Division, Agreement State, or U.S. Nuclear Regulatory Commission licensee that is authorized to perform these functions. The licensee shall promptly check its personnel, equipment, facilities, and irradiated product for radioactive contamination. No product may be shipped until the product has been checked and found free of contamination. If a product has been shipped that may have been inadvertently contaminated, the licensee shall arrange to locate and survey that product for contamination. If any personnel are found to be contaminated, decontamination must be performed promptly. If contaminated equipment, facilities, or products are found, the licensee shall arrange to have them decontaminated or disposed of by the Division, U.S. Nuclear Regulatory Commission, or Agreement State licensee that is authorized to perform these functions. If a pool is contaminated, the licensee shall arrange to clean the pool until the contamination levels do not

exceed the appropriate concentration in Table 2, Column 2, Appendix B to 20.1001 to 20.2401 of 10 CFR 20.

(f) Inspection and maintenance.

1. The licensee shall perform inspection and maintenance checks that include, as a minimum, each of the following at the frequency specified in the license or license application:

(i) Operability of each aspect of the access control system required by (4)(b) of this Rule.

(ii) Functioning of the source position indicator required by (4)(f) of this Rule.

(iii) Operability of the radiation monitor for radioactive contamination in pool water required by (5)(e)2. of this Rule using a radiation check source, if applicable.

(iv) Operability of the over-the-pool radiation monitor at underwater irradiators as required by (4)(e)3. of this Rule.

(v) Operability of the product exit monitor required by (4)(e)1. of this Rule.

(vi) Operability of the emergency source return control required by (4)(e)3. of this Rule.

(vii) Leak-tightness of systems through which pool water circulates (visual inspection).

(viii) Operability of the heat and smoke detectors and extinguisher system required by (4)(d) of this Rule (but without turning extinguishers on).

(ix) Operability of the means of pool water replenishment required by (4)(g)3. of this Rule.

(x) Operability of the indicators of high and low pool water levels required by (4)(g)4. of this Rule.

(xi) Operability of the intrusion alarm required by (4)(b)10. of this Rule, if applicable.

(xii) Functioning and wear of the system, mechanism, and cables used to raise and lower sources.

(xiii) Condition of the barrier to prevent products from hitting the sources or source mechanism as required by (4)(h) of this Rule.

(xiv) Amount of water added to the pool to determine if the pool is leaking.

(xv) Electrical wiring on required safety systems for radiation damage.

(xvi) Pool water conductivity measurements and analysis as required by (5)(g)2. of this Rule.

2. Malfunctions and defects found during inspection and maintenance checks must be repaired without undue delay.

(g) Pool water purity.

1. The pool water purification system must be run sufficiently to maintain the conductivity of the pool water below 20 micromhos per centimeter under normal circumstances. If pool water conductivity rises above 20 micromhos per centimeter, the licensee shall take prompt actions to lower the pool water conductivity, and shall take corrective actions to prevent future recurrences.

2. The licensee shall measure the pool water conductivity frequently enough, but not less than weekly, to assure that the conductivity remains below 20 micromhos per centimeter. Conductivity meters must be calibrated at least annually.

(h) Attendance during operation.

1. Both an irradiator operator and at least one other individual, who is trained on how to respond and prepared to promptly render or summon assistance if the access control alarm sounds, shall be present onsite:

(i) Whenever the irradiator is operated using an automatic product conveyor system; and

(ii) Whenever the product is moved into or out of the radiation room when the irradiator is operated in a batch mode.

2. At a panoramic irradiator at which static irradiations (no movement of the product) are occurring, a person who has received the training on how to respond to alarms described in (5)(a)7. of this Rule must be onsite.

3. At an underwater irradiator, an irradiator operator must be present at the facility whenever the product is moved into or out of the pool. Individuals who move the product into or out of the pool of an underwater irradiator need not be qualified as irradiator operators; however, they must have received the training described in (5)(a)6. and 7. of this Rule. Static irradiations may be performed without a person present at the facility.

4. Irradiator operators shall not be on duty more than 12 hours in any 24-hour period without at least 8 hours uninterrupted rest, unless an emergency exists and prior authorization has been given by the Division.

(i) Entering and leaving the radiation room.

1. Upon first entering the radiation room of a panoramic irradiator after an irradiation, the irradiator operator shall use a survey meter to determine that the source has returned to its fully shielded position. The operator shall check the functioning of the survey meter with a radiation check source while entering the radiation room. The survey meter must be of a type that does not saturate and read zero at high radiation dose rates.

2. Before exiting from and locking the door to the radiation room of a panoramic irradiator prior to a planned irradiation, the irradiator operator shall:

(i) Visually inspect the entire radiation room to verify that no one else is in it; and

(ii) Activate a control in the radiation room that permits the sources to be moved from the shielded position only if the door to the radiation room is locked within a preset time after setting the control.

3. During a power failure, the area around the pool of an underwater irradiator may not be entered without using an operable and calibrated radiation survey meter unless the over-the-pool monitor required by (4)(e)3. of this Rule is operating with backup power.

(j) Irradiation of explosive or flammable materials.

1. Irradiation of explosive material is prohibited unless the licensee has received prior written authorization from the Division. Authorization will not be granted unless the licensee can demonstrate that detonation of the explosive would not rupture the sealed sources, injure personnel, damage safety systems, or cause radiation overexposures of personnel.

2. Irradiation of more than small quantities of flammable material (flash point below 140°F) is prohibited in panoramic irradiators unless the licensee has received prior written authorization from the Division. Authorization will not be granted unless the licensee can demonstrate that a fire in the radiation room could be controlled without damage to sealed sources or safety systems and without radiation overexposures of personnel.

Rule 391-3-17-.10, "Administration," is amended to read as follows:

391-3-17-.10 Administration

(1) Scope. The provisions of this Rule, 391-3-17-.10, shall apply to the administrative procedures required by this Chapter.

(2) Administration.

(a) Administrative Examination of Applications. Applications for the issuance of a license, amendment of a license at the request of the holder, and renewal of a license will be given a docket or other identifying number for administrative examination. The applicant may be required to submit additional information and may be requested to confer informally regarding the application. The Division will give to others such notice of the filing of applications as is required under the applicable provisions of this Chapter and such additional notices as it deems appropriate.

(b) Effect of Timely Renewal Application. In the case of an application for renewal, if the licensee has made application for the renewal of an existing license at least 30 days prior to its

expiration date, the license shall not be deemed to have expired until such application shall have been determined.

(c) Filing of Papers. Unless otherwise specified, papers required to be filed with the Division shall be filed with the Environmental Protection Division, Radioactive Materials Program, 4244 International Parkway, Suite 120 Atlanta, Georgia 30354. Papers required to be filed with the Division shall be deemed filed upon actual receipt with the Division at the location specified. Unless otherwise specified, the filing, when by mail, shall upon actual receipt be deemed complete as of the date of deposit in the mail. Papers may be filed at the Division's offices in Atlanta, Georgia.

(d) Payment of Fees. All licensees shall remit annual fees in accordance with Table 1, the Radioactive Materials License Fee Schedule. Annual fee payments for general and specific licenses are due before the end of the calendar year for the following calendar year. New licensees shall be invoiced for annual fees at a prorated rate. Such fees shall be due and payable thirty (30) days after the invoice date. Fees for applications for specific licenses, and annual fees for reciprocity applicants, shall accompany the request. An application fee must accompany renewal applications that are submitted after a license has expired. Licensees with fees which are delinquent shall not have any request for amendment or renewal of their licenses, except in the interest of public health and safety, honored by the Division until such fees are paid in full or a payment plan has been accepted by the Division.

Table 1
Radioactive Materials License Fee Schedule

License Category	Fee Category	New License Application Fee	Annual Fee, Nominal	Annual Fee, Small Entity [See subparagraph (e)]	Annual Fee, Lower Tier [See subparagraph (f)]
Medical Teletherapy	A.1.a	$4,750.00	$9,500.00	$3,500.00	$2,000.00
Stereotactic Radiosurgery (i.e., Gamma Knife) & Proton Beam Therapy	A.1.b	$4,750.00	$9,500.00	$3,500.00	$2,000.00
Broad Medical (single campus)	A.10.a	$3,774.00	$20,468.40	$5,460.00	$4,483.50
Broad Medical (multiple campuses) (2-5 locations of use)	A.10.b	$5,683.20	$34,796.25	$9,282.00	$7,621.95
Broad Medical (multiple campuses) (6-10 locations of use)	A.10.c	$9,679.20	$43,495.35	$11,602.50	$9,527.50
Broad Medical (multiple campuses) (11+ locations of use)	A.10.d	$9,679.20	$52,194.50	$13,923.00	$11,432.90
Eye Applicators	A.11	$1,198.80	$3,818.40	$2,379.30	$1,402.80
Source Material	A.12	$2,397.60	$5,505.60	$522.90	$522.90
Depleted Uranium	A.12	$266.40	$799.20	$319.20	$319.20
Institutional Medical-Mult. Use (Including HDR)	A.2.a	$2,250.00	$4,500.00	$4,250.00	$3,900.00
Institutional Medical-Mult. Use	A.2.b	$1,198.80	$3,818.40	$2,379.30	$1,402.80
Institutional Medical-Mult. Use (diagnostic only)	A.2.c	$1,198.80	$3,818.40	$2,100.00	$1,123.50
Institutional Medical-Single Use (therapy only)	A.3	$1,198.80	$3,818.40	$2,379.30	$1,402.80
Private Practice (Therapy-HDR)	A.4.a	$1,198.80	$3,818.40	$3,780.00	$2,803.50
Private Practice (Limited Therapy)	A.4.b	$1,198.80	$3,818.40	$2,379.30	$1,402.80
Private Practice (Diagnostic Only)	A.4.c	$1,198.80	$3,818.40	$2,205.00	$1,228.50
Private Practice (Veterinary)	A.4.d	$665.00	$2,100.00	$1,950.00	$1,100.00
In-Vitro Specific Licenses	A.5	$665.00	$2,175.60	$1,764.00	$997.50
In-Vitro General Licenses	A.6	$0.00	$120.00	$120.00	$120.00
Bone Mineral Analyzers	A.7	$1,198.80	$3,818.40	$2,100.00	$1,123.50
Nuclear Pharmacy	A.8.a.1	$4,250.00	$8,500.00	$5,500.00	$4,000.00
Medical Manufacturer for Distribution	A.8.a.2	$2,886.00	$7,503.60	$2,828.70	$1,852.20
Medical Distribution or Redistribution Only (sealed sources)	A.8.b.1	$2,262.86	$4,460.63	$2,030.70	$1,054.20
Medical Distribution or Redistribution Only (GL)	A.8.b.2	$488.40	$1,420.80	$1,420.80	$829.50
Mobile Nuclear Medicine	A.9.a	$1,198.80	$3,818.40	$2,730.00	$1,753.50
Mobile HDR	A.9.b	$1,198.80	$3,818.40	$2,730.00	$1,753.50

License Category	Fee Category	New License Application Fee	Annual Fee, Nominal	Annual Fee, Small Entity [See subparagraph (e)]	Annual Fee, Lower Tier [See subparagraph (f)]
Special Nuclear Material (sealed sources in devices)	B.1.a	$577.20	$1,598.40	$1,243.20	$686.70
Special Nuclear Material (power sources in devices)	B.1.b	$1,110.00	$3,241.20	$1,188.60	$632.10
Special Nuclear Material (other)	B.2	$1,110.00	$3,241.20	$2,274.30	$1,297.80
Pacemaker, Byproduct or SNM -- Medical Inst	B.3	$1,198.80	$3,818.40	$2,274.30	$1,297.80
Industrial Mfg. for Distribution	C.1	$1,953.60	$5,505.60	$2,925.30	$1,948.80
Installed Gauges	C.10.a	$665.00	$2,100.00	$1,950.00	$997.50
Gas Chromatograph, etc.	C.10.b	$665.00	$2,175.60	$1,680.00	$913.50
Portable Moisture Density Gauges, Pb analyzers, etc.	C.11	$665.00	$2,100.00	$1,950.00	$1,300.00
Calibration Sources	C.12.a	$665.00	$2,175.60	$2,100.00	$1,333.50
Calibration Sources (Radium)	C.12.b	$665.00	$2,175.60	$1,619.10	$852.60
Decontamination Services	C.13.a	$2,841.60	$6,615.60	$2,520.00	$1,753.50
Industrial (other) (NORM) (Gauge Service)	C.13.b	$2,841.60	$6,615.60	$2,100.00	$1,333.50
Contaminated Equipment	C.14	$665.00	$2,175.60	$1,619.10	$852.60
In-house Industrial Radiography	C.2	$3,000.00	$12,500.00	$4,900.00	$3,800.00
Multiple Job-Site Industrial Radiography	C.3	$3,000.00	$12,500.00	$4,900.00	$3,800.00
Gamma Irradiators (Self-Shielded)	C.4.a	$1,420.80	$4,040.40	$1,362.90	$806.40
Gamma Irradiators (<10K Ci)	C.4.b.1	$2,841.60	$6,882.00	$2,100.00	$1,123.50
Gamma Irradiators (>10K<100K Ci)	C.4.b.2	$27,172.80	$62,559.60	$5,355.00	$4,378.50
Gamma Irradiators (>100K<1M Ci)	C.4.b.3	$27,172.80	$62,559.60	$9,660.00	$8,683.50
Gamma Irradiators (>1M Ci)	C.4.b.4	$27,172.80	$62,559.60	$21,210.00	$20,233.50
Broad Scope Distribution, Specific (Type A)	C.5.a.1	$5,683.20	$19,314.00	$6,258.00	$5,281.50
Broad Scope Distribution, Specific (Type B)	C.5.a.2	$5,683.20	$19,314.00	$3,318.00	$2,341.50
Broad Scope Distribution, Specific (Type C)	C.5.a.3	$5,683.20	$19,314.00	$2,730.00	$1,753.50
GL Distribution (source and / or device evaluation)	C.5.b	$888.00	$2,131.20	$1,986.60	$1,010.10
GL Distribution (no source and /or device eval)	C.5.c	$488.40	$1,420.80	$1,420.80	$1,161.30
Possession Incident to NRC Exempt Distribution	C.6.c	$665.00	$2,175.60	$2,087.40	$1,110.90
Well Logging /Tracers	C.7.a	$1,465.20	$4,528.80	$2,660.70	$1,684.20
Field Flooding Studies	C.7.b	$1,028.58	$3,520.62	$2,100.00	$1,333.50

License Category	Fee Category	New License Application Fee	Annual Fee, Nominal	Annual Fee, Small Entity [See subparagraph (e)]	Annual Fee, Lower Tier [See subparagraph (f)]
Nuclear Laundries	C.8	$9,679.20	$20,468.40	$3,108.00	$2,131.50
Industrial Research & Development	C.9	$1,554.00	$3,862.80	$2,282.70	$1,306.20
Broad Scope (Academic) (Type A & B)	D.1.a	$3,250.00	$7,000.00	$3,998.80	$2,275.00
Broad Scope (Academic) (Type C)	D.1.b	$3,250.00	$7,000.00	$3,237.80	$1,640.25
Broad Scope (Industrial R&D) (Type A)	D.2.a	$2,397.60	$6,526.80	$3,076.50	$2,100.00
Broad Scope (Industrial R&D) (Type B)	D.2.b	$2,397.60	$6,526.80	$2,751.00	$1,774.50
Broad Scope (Industrial R&D) (Type C)	D.2.c	$2,397.60	$6,526.80	$2,490.60	$1,514.10
Broad Scope (Medical Manufacturer for Dist) (R&D)	D.3	$2,886.00	$6,882.00	$3,318.00	$2,341.50
Civil Defense (Emergency Management)	E.1	$1,110.00	$3,996.00	$1,507.80	$741.30
Civil Defense (Emergency Response)	E.2	$1,110.00	$3,996.00	$1,425.90	$659.40
Teletherapy Service Co.	F	$2,841.60	$6,615.60	$2,282.70	$1,306.20
Consultants (Leak Testing Service)	G	$665.00	$2,175.60	$1,619.10	$493.50
Generally Licensed Devices (except tritium safety signs)	GL	$0.00	$120.00	$120.00	$120.00
Academic (Non-Broad)	I	$1,554.00	$3,862.80	$1,680.00	$913.50
Device Evaluation	J.1	$5,514.48	$6,420.24	$1,260.00	$283.50
Source Evaluation	J.2	$2,051.28	$2,783.88	$1,050.00	$283.50
Radioactive Waste Disposal-Burial	L.1	$185,143.84	$186,240.92	$47,460.00	$46,483.50
Radioactive Waste Disposal-Incineration	L.2	$185,143.84	$186,240.92	$47,460.00	$46,483.50
Radioactive Waste, Processing & Repackaging	L.3.a	$3,729.60	$14,208.00	$6,468.00	$5,491.50
Radioactive Waste, Prepackaged	L.3.b	$2,175.60	$6,615.60	$4,263.00	$3,286.50
Reciprocity	K.	$500 + Appropriate nominal annual fee (eligible for Small Entity/Lower Tier)			

License Category	Fee Category	New License Application Fee	Annual Fee, Nominal	Annual Fee, Small Entity [See subparagraph (e)]	Annual Fee, Lower Tier [See subparagraph (f)]
Medical Teletherapy	A.1.a	$3,256.00	$6,623.00	$2,026.50	$1,212.75
Stereotactic Radiosurgery (i.e., Gamma Knife)	A.1.b	$3,256.00	$6,623.00	$2,026.50	$1,212.75
Broad Medical	A.10	$3,145.00	$17,057.00	$4,550.00	$3,736.25
Eye Applicators	A.11	$999.00	$3,182.00	$1,982.75	$1,169.00
Source Material	A.12	$1,998.00	$4,588.00	$435.75	$435.75
Depleted Uranium	A.12	$222.00	$666.00	$266.00	$266.00
Institutional Medical Mult. Use (Including HDR)	A.2.a	$999.00	$3,182.00	$3,150.00	$2,336.25
Institutional Medical Mult. Use	A.2.b	$999.00	$3,182.00	$1,982.75	$1,169.00
Institutional Medical Mult. Use (diagnostic only)	A.2.c	$999.00	$3,182.00	$1,750.00	$936.25
Institutional Medical Single Use (therapy only)	A.3	$999.00	$3,182.00	$1,982.75	$1,169.00
Private Practice (Therapy HDR)	A.4.a	$999.00	$3,182.00	$3,150.00	$2,336.25
Private Practice (Limited Therapy)	A.4.b	$999.00	$3,182.00	$1,982.75	$1,169.00
Private Practice (Diagnostic Only)	A.4.c	$999.00	$3,182.00	$1,837.50	$1,023.75
Private Practice (Veterinary)	A.4.d	$555.00	$1,813.00	$1,750.00	$936.25
In Vitro Specific Licenses	A.5	$555.00	$1,813.00	$1,470.00	$831.25
In Vitro General Licenses	A.6	$0.00	$100.00	$100.00	$100.00
Bone Mineral Analyzers	A.7	$999.00	$3,182.00	$1,750.00	$936.25
Nuclear Pharmacy	A.8.a.1	$2,405.00	$6,253.00	$3,990.00	$3,176.25
Medical Manufacturer for Distribution	A.8.a.2	$2,405.00	$6,253.00	$2,357.25	$1,543.50
Medical Distribution or Redistribution Only (sealed sources)	A.8.b.1	$1,885.72	$3,717.19	$1,692.25	$878.50
Medical Distribution or Redistribution Only (GL)	A.8.b.2	$407.00	$1,184.00	$1,184.00	$691.25
Mobile Nuclear Medicine	A.9.a	$999.00	$3,182.00	$2,275.00	$1,461.25
Mobile HDR	A.9.b	$999.00	$3,182.00	$2,275.00	$1,461.25
Special Nuclear Material (sealed sources in devices)	B.1.a	$481.00	$1,332.00	$1,036.00	$572.25

License Category	Fee Category	New License Application Fee	Annual Fee, Nominal	Annual Fee, Small Entity [See subparagraph (e)]	Annual Fee, Lower Tier [See subparagraph (f)]
Special Nuclear Material (power sources in devices)	B.1.b	$925.00	$2,701.00	$990.50	$526.75
Special Nuclear Material (other)	B.2	$925.00	$2,701.00	$1,895.25	$1,081.50
Pacemaker, Byproduct or SNM – Medical Inst	B.3	$999.00	$3,182.00	$1,895.25	$1,081.50
Industrial Mfg. for Distribution	C.1	$1,628.00	$4,588.00	$2,437.75	$1,624.00
Installed Gauges	C.10.a	$555.00	$1,813.00	$1,470.00	$831.25
Gas Chromatograph, etc.	C.10.b	$555.00	$1,813.00	$1,400.00	$761.25
Portable Moisture Density Gauges, Pb analyzers, etc.	C.11	$555.00	$1,813.00	$1,750.00	$1,111.25
Calibration Sources	C.12.a	$555.00	$1,813.00	$1,750.00	$1,111.25
Calibration Sources (Radium)	C.12.b	$555.00	$1,813.00	$1,349.25	$710.50
Decontamination Services	C.13.a	$2,368.00	$5,513.00	$2,100.00	$1,461.25
Industrial (other) (NORM) (Gauge Service)	C.13.b	$2,368.00	$5,513.00	$1,750.00	$1,111.25
Contaminted Equipment	C.14	$555.00	$1,813.00	$1,349.25	$710.50
In-house Industrial Radiography	C.2	$1,480.00	$9,583.00	$3,780.00	$2,966.25
Multiple Job-Site Industrial Radiography	C.3	$1,480.00	$9,583.00	$3,780.00	$2,966.25
Gamma Irradiators (Self-Shielded)	C.4.a	$1,184.00	$3,367.00	$1,135.75	$672.00
Gamma Irradiators (<10K Ci)	C.4.b.1	$2,368.00	$5,735.00	$1,750.00	$936.25
Gamma Irradiators (>10K<100K Ci)	C.4.b.2	$22,644.00	$52,133.00	$4,462.50	$3,648.75
Gamma Irradiators (>100K<1M Ci)	C.4.b.3	$22,644.00	$52,133.00	$8,050.00	$7,236.25
Gamma Irradiators (>1M Ci)	C.4.b.4	$22,644.00	$52,133.00	$17,675.00	$16,861.25
Broad Scope Distribution, Specific (Type A)	C.5.a.1	$4,736.00	$16,095.00	$5,215.00	$4,401.25
Broad Scope Distribution, Specific (Type B)	C.5.a.2	$4,736.00	$16,095.00	$2,765.00	$1,951.25
Broad Scope Distribution, Specific (Type C)	C.5.a.3	$4,736.00	$16,095.00	$2,275.00	$1,461.25
GL Distribution (source and / or device evaluation)	C.5.b	$740.00	$1,776.00	$1,655.50	$841.75
GL Distribution (no source and /or device evaluation)	C.5.c	$407.00	$1,184.00	$1,184.00	$967.75
Possession Incident to NRC Exempt Distribution	C.6.c	$555.00	$1,813.00	$1,739.50	$925.75
Well Logging /Tracers	C.7.a	$1,221.00	$3,774.00	$2,217.25	$1,403.50
Field Flooding Studies	C.7.b	$857.15	$2,933.85	$1,750.00	$1,111.25
Nuclear Laundries	C.8	$8,066.00	$17,057.00	$2,590.00	$1,776.25
Industrial Research & Development	C.9	$1,295.00	$3,219.00	$1,902.25	$1,088.50
Broad Scope (Academic) (Type A & B)	D.1.a	$1,998.00	$5,439.00	$2,563.75	$1,750.00
Broad Scope (Academic) (Type C)	D.1.b	$1,998.00	$5,439.00	$2,075.50	$1,261.75
Broad Scope (Industrial R&D) (Type A)	D.2.a	$1,998.00	$5,439.00	$2,563.75	$1,750.00
Broad Scope (Industrial R&D) (Type B)	D.2.b	$1,998.00	$5,439.00	$2,292.50	$1,478.75
Broad Scope (Industrial R&D) (Type C)	D.2.c	$1,998.00	$5,439.00	$2,075.50	$1,261.75
Broad Scope (Medical Manufacturer for Distribution) (R&D)	D.3	$2,405.00	$5,735.00	$2,765.00	$1,951.25

~~Civil Defense (Emergency Management)~~	~~E.1~~	~~$925.00~~	~~$3,330.00~~	~~$1,256.50~~	~~$617.75~~
~~Civil Defense (Emergency Response)~~	~~E.2~~	~~$925.00~~	~~$3,330.00~~	~~$1,188.25~~	~~$549.50~~
~~Teletherapy Service Co.~~	~~F~~	~~$2,368.00~~	~~$5,513.00~~	~~$1,902.25~~	~~$1,088.50~~
~~Consultants (Leak Testing Service)~~	~~G~~	~~$555.00~~	~~$1,813.00~~	~~$1,349.25~~	~~$411.25~~
~~G L Devices (except tritium safety signs)~~	~~GL~~	~~$0.00~~	~~$100.00~~	~~$100.00~~	~~$100.00~~
~~Academic (Non-Broad)~~	~~I~~	~~$1,295.00~~	~~$3,219.00~~	~~$1,400.00~~	~~$761.25~~
~~Device Evaluation~~	~~J.1~~	~~$4,595.40~~	~~$5,350.20~~	~~$1,050.00~~	~~$236.25~~
~~Source Evaluation~~	~~J.2~~	~~$1,709.40~~	~~$2,319.90~~	~~$875.00~~	~~$236.25~~
~~Radioactive Waste Disposal-Burial~~	~~L.1~~	~~$154,286.53~~	~~$155,200.77~~	~~$39,550.00~~	~~$38,736.25~~
~~Radioactive Waste Disposal-Incineration~~	~~L.2~~	~~$154,286.53~~	~~$155,200.77~~	~~$39,550.00~~	~~$38,736.25~~
~~Radioactive Waste, Processing & Repackaging~~	~~L.3.a~~	~~$3,108.00~~	~~$11,840.00~~	~~$5,390.00~~	~~$4,576.25~~
~~Radioactive Waste, Prepackaged~~	~~L.3.b~~	~~$1,813.00~~	~~$5,513.00~~	~~$3,552.50~~	~~$2,738.75~~
~~Reciprocity~~	~~K.~~	~~appropriate nominal annual fee (eligible for Small Entity/Lower Tier)~~			

(e) **Small Entity**

The size standards for Georgia small entities are as follows:

1. A small business is a business with annual receipts of $3.5 million or less except private practice physicians for which the standard is annual receipts of $1 million or less.

2. A small organization is a not-for-profit organization which is independently owned and operated and has annual receipts of $3.5 million or less.

3. Small governmental jurisdictions are governments of cities, counties, towns, school districts, or special districts with a population of less than 50,000.

4. A small educational institution is one that is (1) supported by a qualifying small governmental jurisdiction, or (2) one that is not state or publicly supported and has 500 employees or less.

(f) **Small Entity Lower Tier**

Small businesses and not-for-profit organizations with annual receipts of less than $250,000 and small governmental jurisdictions with populations of less than 20,000 qualify for the lower tier small entity fee.

(3) Penalties.

(a) Any person who engages in any of the following conduct shall be guilty of a misdemeanor as found in O.C.G.A. Section 31-13-13: 1. Hindering, obstructing, or otherwise interfering with any representative of the Department in the discharge of his official duties in making inspections or impounding radioactive materials as provided in Code Section 31-13-5 and 31-13-11 respectively; or 2. Violating the provisions of Code Section 31-13-7 (permits for disposal of

radioactive waste; bonding of permittees), or any Rule or Regulation promulgated thereunder; or 3. Violating the provisions of Code Section 31-13-12 (Prohibited Uses of Sources of Radiation).

(b) Any person who submits any false statements or writings, concealment of facts, and fraudulent documents in matters within the jurisdiction of the Division shall be guilty of a felony as found in O.C.G.A. Section 16-10-20:

1. A person who knowingly and willfully falsifies, conceals, or covers up by any trick, scheme, or device a material fact; makes a false, fictitious, or fraudulent statement or representation; or makes or uses any false writing or document, knowing the same to contain any false, fictitious, or fraudulent statement or entry, in any matter within the jurisdiction of the Division shall, upon conviction thereof, be punished by a fine of not more than $1,000.00 or by imprisonment for not less than one nor more than five years, or both.

(c) Any person who:

1. Violates any licensing provision of this 31-13-1, et. seq., or any Rule, Regulation, or Order issued under 31-13-1, et. seq., or any term, condition, or limitation of any license issued under this Chapter; or

2. Commits any violation for which a license may be revoked under rules or regulations issued pursuant to this 31-13-1, et. seq., may be subject to a civil penalty, to be imposed by the Division, not to exceed $10,000.00. If any violation is a continuing one, each day of such violation shall constitute a separate violation for the purpose of computing the applicable civil penalty.

3. If a violation is found to exist during an inspection or visit and is then found to exist on a subsequent inspection or visit, there shall arise a rebuttable presumption that the violation continued throughout the period of time between the initial inspection or visit and the subsequent inspection or visit.

(d) Whenever the Division proposes to subject a person to the imposition of a civil penalty, it shall notify such person in writing:

1. Setting forth the date, facts, and nature of each act or omission with which the person is charged.

2. Specifically identifying the particular provision or provisions of the Code section, Rule, Order, or license condition involved in the violation; and

3. Advising of each penalty which the Division proposes to impose and its amount.

(e) Such written notice shall be sent by registered or certified mail by the Division to the last known address of such person. The person so notified shall be granted an opportunity to show in writing, within ten days from receipt of such notice, why such penalty should not be imposed. The notice shall also advise such person that upon failure to pay the civil penalty subsequently determined by the Division, if any, the penalty may be collected by civil action.

(f) Upon receipt of a written response from the person so notified, alleging that a penalty should not be imposed, the Director shall consider the response and make a final decision on the appropriateness and amount of the penalty. The Division may, at its discretion, conduct an onsite inspection in order to make a final decision. In making this decision, the Director may, as deemed appropriate by the Director, consider such factors as: errors concerning the amount or nature of the penalty, corrective action taken by the licensee, and approved disposal of radioactive material by the licensee.

(g) The Division shall inform the licensee of its final decision by registered or certified mail to the last known address of the licensee. Within 10 days of receipt of the Division's final determination concerning the civil penalty, the licensee may request an administrative hearing pursuant to the Georgia Administrative Procedure Act, O.C.G.A. 50-13-1, et. seq.

Rule 391-3-17-.13, "Physical Protection of Category 1 and Category 2 Quantities of Radioactive Materials," is amended to read as follows:

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.~~
U.S. Nuclear Regulatory Commission
Director, Division of Physical and Cyber Security Policy
Attn: Criminal History Program/Mail Stop – T-07D04M
11545 Rockville Pike
Rockville, MD 20852-2738

(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

(7) In lieu of the address given in 10 CFR 37.23(a)(2), licensee should provide oath or affirmation certifications to the Georgia Department of Natural Resources, Environmental Protection Division.

Authority: O.C.G.A. Section 31-13-1 et seq., as amended.