

Instructions:

Revise R.61-63 pursuant to each individual instruction provided with the text below:

Text:

Revise 1.2.38 “Unrefined and unprocessed ore” to read:

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

Delete 1.15.11.

Add 1.15.11 and subparagraphs 1.15.11.1 through 1.15.11.2.8 to read:

1.15.11 Decommissioning Funding Plan.

1.15.11.1 Each decommissioning funding plan must be submitted for review and approval and must contain:

1.15.11.1.1 A detailed cost estimate for decommissioning, in an amount reflecting:

1.15.11.1.1.1 The cost of an independent contractor to perform all decommissioning activities;

1.15.11.1.1.2 The cost of meeting the RHA 3.57.2 criteria for unrestricted use, provided that, if the applicant or licensee can demonstrate its ability to meet the provisions of RHA 3.57.3, the cost estimate may be based on meeting the RHA 3.57.3 criteria;

1.15.11.1.1.3 The volume of onsite subsurface material containing residual radioactivity that will require remediation to meet the criteria for license termination; and

1.15.11.1.1.4 An adequate contingency factor.

1.15.11.1.2 Identification of and justification for using the key assumptions contained in the DCE;

1.15.11.1.3 A description of the method of assuring funds for decommissioning from RHA 1.15.12, including means for adjusting cost estimates and associated funding levels periodically over the life of the facility;

1.15.11.1.4 A certification by the licensee that financial assurance for decommissioning has been provided in the amount of the cost estimate for decommissioning; and

1.15.11.1.5 A signed original of the financial instrument obtained to satisfy the requirements of RHA 1.15.12 of this section (unless a previously submitted and accepted financial instrument continues to cover the cost estimate for decommissioning).

1.15.11.2 At the time of license renewal and at intervals not to exceed 3 years, the decommissioning funding plan must be resubmitted with adjustments as necessary to account for changes in costs and the extent of contamination. If the amount of financial assurance will be adjusted downward, this cannot be done until the updated decommissioning funding plan is approved. The decommissioning

funding plan must update the information submitted with the original or prior approved plan, and must specifically consider the effect of the following events on decommissioning costs:

- 1.15.11.2.1 Spills of radioactive material producing additional residual radioactivity in onsite subsurface material;
- 1.15.11.2.2 Waste inventory increasing above the amount previously estimated;
- 1.15.11.2.3 Waste disposal costs increasing above the amount previously estimated;
- 1.15.11.2.4 Facility modifications;
- 1.15.11.2.5 Changes in authorized possession limits;
- 1.15.11.2.6 Actual remediation costs that exceed the previous cost estimate;
- 1.15.11.2.7 Onsite disposal; and
- 1.15.11.2.8 Use of a settling pond.

Revise 1.15.12 to read:

1.15.12 The financial instrument must include the licensee's name, license number, and docket number; and the name, address, and other contact information of the issuer, and, if a trust is used, the trustee. When any of the foregoing information changes, the licensee must, within 30 days, submit financial instruments reflecting such changes. The financial instrument submitted must be a signed original or signed original duplicate, except where a copy is specifically permitted. Financial assurance for decommissioning must be provided by one or more of the following methods:

Revise 2.3.1 to read:

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

Add subparagraphs 2.3.1.1 through 2.3.1.4 to read:

2.3.1.1 No more than 1.5 kg (3.3 lb) of uranium and thorium in dispersible forms (e.g., gaseous, liquid, powder, etc.) at any one time. Any material processed by the general licensee that alters the chemical or physical form of the material containing source material must be accounted for as a dispersible form. A person authorized to possess, use, and transfer source material under this paragraph may not receive more than a total of 7 kg (15.4 lb) of uranium and thorium in any one calendar year. Persons possessing source material in excess of these limits as of August 27, 2013, may continue to possess up to 7 kg (15.4 lb) of uranium and thorium at any one time for one year beyond this date, or until the Commission takes final action on a pending application submitted on or August 27, 2014, for a specific license for such material; and receive up to 70 kg (154 lb) of uranium or thorium in any one calendar year until December 31, 2014, or until the Commission takes final action on a pending application submitted on or before August 27, 2014, for a specific license for such material; and

2.3.1.2 No more than a total of 7 kg (15.4 lb) of uranium and thorium at any one time. A person authorized to possess, use, and transfer source material under this paragraph may not receive more than a total of 70 kg (154 lb) of uranium and thorium in any one calendar year. A person may not alter the chemical or physical form of the source material possessed under this paragraph unless it is accounted for under the limits of RHA 2.3.1.1; or

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

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

Revise 2.3.2 to read:

2.3.2 Any person who receives, possesses, uses, or transfers source material in accordance with the general license in RHA 2.3.1:

Add subparagraphs 2.3.2.1 through 2.3.2.4 to read:

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

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

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

2.3.2.2.2 In accordance with RHA 3.27.

2.3.2.3 Is subject to the provisions in Part II of Title A.

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

Revise subparagraphs 2.4.2.2 through 2.4.2.3 to read:

2.4.2.2 The general license in RHA 2.4.2.1 applies only to radioactive material contained in devices which have been manufactured or initially transferred and labeled in accordance with the specifications contained in the subparagraphs below. The devices must have been received from one of the specific licensees described in the following subparagraphs or through a transfer made under RHA 2.4.2.3.8 of this part:

2.4.2.2.1 A specific license issued under Part 2 of this Regulation; or

2.4.2.2.2 An equivalent specific license issued by an Agreement State; or

2.4.2.2.3 An equivalent specific license issued by a State with provisions comparable to Part 2 of this Regulation.

Delete 2.5.7 and subparagraphs 2.5.7.1 through 2.5.7.3.2.

Add 2.5.7 and subparagraphs 2.5.7.1 through 2.5.7.4 to read:

2.5.7 Application for a specific license in form of sealed source.

2.5.7.1 Except as provided in RHA 2.5.7.2, 2.5.7.3, and 2.5.7.4, an application for a specific license to use byproduct material in the form of a sealed source or in a device that contains the sealed source must either--

2.5.7.1.1 Identify the source or device by manufacturer and model number as registered with the Department under RHA 2.29 or comparable regulation, or for a source or a device containing radium-226 or accelerator-produced radioactive material with a State under provisions comparable to RHA 2.29; or

2.5.7.1.2 Contain the information identified in RHA 2.29.

2.5.7.2 For sources or devices manufactured before October 23, 2012 that are not registered with the Commission under 10 CFR 32.210 or with an Agreement State, and for which the applicant is unable to provide all categories of information specified in RHA 2.29, the application must include:

2.5.7.2.1 All available information identified in RHA 2.29 concerning the source, and, if applicable, the device; and

2.5.7.2.2 Sufficient additional information to demonstrate that there is reasonable assurance that the radiation safety properties of the source or device are adequate to protect health and minimize danger to life and property. Such information must include a description of the source or device, a description of radiation safety features, the intended use and associated operating experience, and the results of a recent leak test.

2.5.7.3 For sealed sources and devices allowed to be distributed without registration of safety information in accordance with RHA 2.29, the applicant may supply only the manufacturer, model number, and radionuclide and quantity.

2.5.7.4 If it is not feasible to identify each sealed source and device individually, the applicant may propose constraints on the number and type of sealed sources and devices to be used and the conditions under which they will be used, in lieu of identifying each sealed source and device.

Add 2.7.1.1.6 to read:

2.7.1.1.6 The device has been registered in the Sealed Source and Device Registry.

Add 2.7.7.1.4 to read:

2.7.7.1.4 The source or device has been registered in the Sealed Source and Device Registry.

Revise 2.7.8.1.4.2 to read:

2.7.8.1.4.2 The source has been subjected to and has satisfactorily passed the appropriate tests prescribed by 2.7.8.4.

Add subparagraphs 2.7.13.1.5 through 2.7.13.1.5.4 to read:

2.7.13.1.5 The applicant shall subject at least five prototypes of each source that is designed to contain more than 0.185 kilobecquerel (0.005 microcurie) of americium-241 or radium-226 to tests as follows:

2.7.13.1.5.1 The initial quantity of radioactive material deposited on each source is measured by direct counting of the source.

2.7.13.1.5.2 The sources are subjected to tests that adequately take into account the individual, aggregate, and cumulative effects of environmental conditions expected in service that could adversely affect the effective containment or binding of americium-241 or radium-226, such as physical handling, moisture, and water immersion.

2.7.13.1.5.3 The sources are inspected for evidence of physical damage and for loss of americium-241 or radium-226, after each stage of testing, using methods of inspection adequate for determining compliance with the criteria in RHA 2.7.8.1.5.4.

2.7.13.1.5.4 Source designs are rejected for which the following has been detected for any unit: removal of more than 0.185 kilobecquerel (0.005 microcurie) of americium-241 or radium-226 from the source or any other evidence of physical damage.

Revise 2.7.13.3 to read:

2.7.13.3 Each person licensed under RHA 2.7.8 shall perform a dry wipe test upon each source containing more than 3.7 kilobecquerels (0.1 microcurie) of Americium-241 or Radium-226 before transferring the source to a general licensee under RHA 2.4.5, or comparable regulation. This test shall be performed by wiping the entire radioactive surface of the source with a filter paper with the application of moderate finger pressure. The radioactivity on the paper shall be measured by using methods capable of detecting 0.185 kilobecquerel (0.005 microcurie) of Americium-241 or Radium-226. If a source has been shown to be leaking or losing more than 0.185 kilobecquerel (0.005 microcurie) of americium-241 or radium-226 by the methods described in this section, the source must be rejected and must not be transferred to a general licensee RHA 2.4.5 or comparable regulation.

Add 2.7.14 and subparagraphs 2.7.14.1 through 2.7.14.6 to read:

2.7.14 Luminous safety devices for use in aircraft: Requirements for license to manufacture, assemble, repair or initially transfer. An application for a specific license to manufacture, assemble, repair or initially transfer luminous safety devices containing tritium or promethium-147 for use in aircraft, for distribution to persons generally licensed under RHA 2.4.4, will be approved if:

2.7.14.1 The applicant satisfies the general requirements specified in RHA 2.6;

2.7.14.2 The applicant submits sufficient information regarding each device pertinent to evaluation of the potential radiation exposure, including:

2.7.14.2.1 Chemical and physical form and maximum quantity of tritium or promethium-147 in each device;

2.7.14.2.2 Details of construction and design;

2.7.14.2.3 Details of the method of binding or containing the tritium or promethium-147;

2.7.14.2.4 Procedures for and results of prototype testing to demonstrate that the tritium or promethium-147 will not be released to the environment under the most severe conditions likely to be encountered in normal use;

2.7.14.2.5 Quality assurance procedures to be followed that are sufficient to ensure compliance with § 32.55;

2.7.14.2.6 Any additional information, including experimental studies and tests, required by the Department to facilitate a determination of the safety of the device.

2.7.14.3 Each device will contain no more than 10 curies of tritium or 300 millicuries of promethium-147. The levels of radiation from each device containing promethium-147 will not exceed 0.5 millirad per hour at 10 centimeters from any surface when measured through 50 milligrams per square centimeter of absorber.

2.7.14.4 The Department determines that:

2.7.14.4.1 The method of incorporation and binding of the tritium or promethium-147 in the device is such that the tritium or promethium-147 will not be released under the most severe conditions which are likely to be encountered in normal use and handling of the device;

2.7.14.4.2 The tritium or promethium-147 is incorporated or enclosed so as to preclude direct physical contact by any person with it;

2.7.14.4.3 The device is so designed that it cannot easily be disassembled; and

2.7.14.4.4 Prototypes of the device have been subjected to and have satisfactorily passed the tests required by 2.7.9.5.

2.7.14.5 The applicant shall subject at least five prototypes of the device to tests as follows:

2.7.14.5.1 The devices are subjected to tests that adequately take into account the individual, aggregate, and cumulative effects of environmental conditions expected in service that could adversely affect the effective containment of tritium or promethium-147, such as temperature, moisture, absolute pressure, water immersion, vibration, shock, and weathering.

2.7.14.5.2 The devices are inspected for evidence of physical damage and for loss of tritium or promethium-147, after each stage of testing, using methods of inspection adequate for determining compliance with the criteria in RHA 2.7.14.5.3.

2.7.14.5.3 Device designs are rejected for which the following has been detected for any unit:

2.7.14.5.3.1 A leak resulting in a loss of 0.1 percent or more of the original amount of tritium or promethium-147 from the device; or

2.7.14.5.3.2 Surface contamination of tritium or promethium-147 on the device of more than 2,200 disintegrations per minute per 100 square centimeters of surface area; or

2.7.14.5.3.3 Any other evidence of physical damage.

2.7.14.6 The device has been registered in the Sealed Source and Device Registry.

Add 2.7.15 and subparagraphs 2.7.15.1 through 2.7.15.7 to read:

2.7.15 Ice detection devices containing strontium-90; requirements for license to manufacture or initially transfer. An application for a specific license to manufacture or initially transfer ice detection devices containing strontium-90 for distribution to persons generally licensed under RHA 2.4.7 will be approved if:

2.7.15.1 The applicant satisfies the general requirements specified in RHA 2.6

2.7.15.2 The applicant submits sufficient information regarding each type of device pertinent to evaluation of the potential radiation exposure, including:

2.7.15.2.1 Chemical and physical form and maximum quantity of strontium-90 in the device;

2.7.15.2.2 Details of construction and design of the source of radiation and its shielding;

2.7.15.2.3 Radiation profile of a prototype device;

2.7.15.2.4 Procedures for and results of prototype testing of devices to demonstrate that the strontium-90 contained in each device will not be released or be removed from the device under the most severe conditions likely to be encountered in normal handling and use;

2.7.15.2.5 Details of quality control procedures to be followed in manufacture of the device;

2.7.15.2.6 Description of labeling to be affixed to the device;

2.7.15.2.7 Instructions for handling and installation of the device;

2.7.15.2.8 Any additional information, including experimental studies and tests, required by the Department to facilitate a determination of the safety of the device;

2.7.15.3 Each device will contain no more than 50 microcuries of strontium-90 in an insoluble form;

2.7.15.4 Each device will bear durable, legible labeling which includes the radiation caution symbol prescribed by Part 3, a statement that the device contains strontium-90 and the quantity thereof, instructions for disposal and statements that the device may be possessed pursuant to a general license, that the manufacturer or civil authorities should be notified if the device is found, that removal of the labeling is prohibited and that disassembly and repair of the device may be performed only by a person holding a specific license to manufacture or service such devices;

2.7.15.5 The Department determines that:

2.7.15.5.1 The method of incorporation and binding of the strontium-90 in the device is such that the strontium-90 will not be released from the device under the most severe conditions which are likely to be encountered in normal use and handling of the device;

2.7.15.5.2 The strontium-90 is incorporated or enclosed so as to preclude direct physical contact by any individual with it and is shielded so that no individual will receive a radiation exposure to a major portion of his body in excess of 0.5 rem in a year under ordinary circumstances of use;

2.7.15.5.3 The device is so designed that it cannot be easily disassembled;

2.7.15.5.4 Prototypes of the device have been subjected to and have satisfactorily passed the tests required by RHA 2.7.15.6 of this section.

2.7.15.5.5 Quality control procedures have been established to satisfy the requirements of 10 CFR 32.62.

2.7.15.6 The applicant shall subject at least five prototypes of the device to tests as follows:

2.7.15.6.1 The devices are subjected to tests that adequately take into account the individual, aggregate, and cumulative effects of environmental conditions expected in service that could adversely affect the effective containment of strontium-90, such as temperature, moisture, absolute pressure, water immersion, vibration, shock, and weathering.

2.7.15.6.2 The devices are inspected for evidence of physical damage and for loss of strontium-90 after each stage of testing, using methods of inspection adequate for determining compliance with the criteria in RHA 2.7.15.6.3.

2.7.15.6.3 Device designs are rejected for which the following has been detected for any unit:

2.7.15.6.3.1 A leak resulting in a loss of 0.1 percent or more of the original amount of strontium-90 from the device; or

2.7.15.6.3.2 Surface contamination of strontium-90 on the device of more than 2,200 disintegrations per minute per 100 square centimeters of surface area; or

2.7.15.6.3.3 Any other evidence of physical damage.

2.7.15.7 The device has been registered in the Sealed Source and Device Registry.

Add 2.7.16 and subparagraphs 2.7.16.1 through 2.7.16.2.5 to read:

2.7.16 Requirements for license to initially transfer source material for use under the 'small quantities of source material' general license

2.7.16.1 An application for a specific license to initially transfer source material for use under RHA 2.3, will be approved if:

2.7.16.1.1 The applicant satisfies the general requirements specified in RHA 2.6; and

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

2.7.16.2 Conditions of licenses to initially transfer source material for use under the ‘small quantities of source material’ general license: Quality control, labeling, safety instructions, and records and reports

2.7.16.2.1 Each person licensed under RHA 2.7.16 shall label the immediate container of each quantity of source material with the type of source material and quantity of material and the words, “radioactive material.”

2.7.16.2.2 Each person licensed under RHA 2.7.16 shall ensure that the quantities and concentrations of source material are as labeled and indicated in any transfer records.

2.7.16.2.3 Each person licensed under RHA 2.7.16 shall provide the information specified in this paragraph to each person to whom source material is transferred for use under RHA 2.3. This information must be transferred before the source material is transferred for the first time in each calendar year to the particular recipient. The required information includes:

2.7.16.2.3.1 A copy of RHA 2.3 and RHA 2.18, or relevant equivalent regulations of the Agreement State.

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

2.7.16.2.4 Each person licensed under RHA 2.7.16 shall report transfers as follows:

2.7.16.2.4.1 File a report with the Department. The report shall include the following information:

2.7.16.2.4.1.1 The name, address, and license number of the person who transferred the source material;

2.7.16.2.4.1.2 For each general licensee under RHA 2.3 to whom greater than 50 grams (0.11 lb) of source material has been transferred in a single calendar quarter, the name and address of the general licensee to whom source material is distributed; a responsible agent, by name and/or position and phone number, of the general licensee to whom the material was sent; and the type, physical form, and quantity of source material transferred; and

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

2.7.16.2.4.2 File a report with each responsible Agreement State agency that identifies all persons, operating under provisions equivalent to RHA 2.3, to whom greater than 50 grams (0.11 lb) of source material has been transferred within a single calendar quarter. The report shall include the following information specific to those transfers made to the Agreement State being reported to:

2.7.16.2.4.2.1 The name, address, and license number of the person who transferred the source material; and

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

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

2.7.16.2.4.3 Submit each report by January 31 of each year covering all transfers for the previous calendar year. If no transfers were made to persons generally licensed under RHA 2.3 during the current period, a report shall be submitted to the Department indicating so. If no transfers have been made to general licensees during the reporting period, this information shall be reported to the Department upon request.

2.7.16.2.5 Each person licensed under RHA 2.7.16 shall maintain all information that supports the reports required concerning each transfer to a general licensee for a period of 1 year after the event is included in a report to the Department.

Delete 2.10.2.

Add 2.10.2.1 through 2.10.2.2.2 to read:

2.10.2 Specific license transfer requirements.

2.10.2.1 No license issued or granted pursuant to the regulations in Parts II, VII, and XI nor any right under a license 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 Department 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.

2.10.2.2 An application for transfer of license must include:

2.10.2.2.1 The identity, technical and financial qualifications of the proposed transferee; and

2.10.2.2.2 Financial assurance for decommissioning information required by RHA 1.15.

Revise 2.10.6.2 to read:

2.10.6.2 An entity (as that term is defined in 11 U.S.C. 101 (15)) controlling the licensee or listing the license or licensee as property of the estate; or

Revise 2.15 to read:

RHA 2.15 INALIENABILITY OF LICENSES

2.15.1 No license issued or granted under these regulations and no right to possess or utilize radioactive material granted by any license issued pursuant to these regulations shall be transferred, assigned, or in any manner disposed of, either voluntarily or involuntarily, indirectly or directly through transfer of

control of any license to any person unless the Department 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.

Add 2.15.2 and subparagraphs 2.15.2.1 through 2.15.2.2 to read:

2.15.2 An application for transfer of license must include:

2.15.2.1 The identity, technical and financial qualifications of the proposed transferee; and

2.15.2.2 Financial assurance for decommissioning information required by RHA 1.15.

Revise 2.20.1.3 to read:

2.20.1.3 Any person is exempt from the requirements for a license set forth in the Act and from the regulations in Parts III and VI of Title A to the extent that such person receives, possesses, uses, or transfers:

Revise 2.20.1.3.2 to read:

2.20.1.3.2 Source material contained in the following products; (1) glazed ceramic tableware manufactured before August 27, 2013, provided that the glaze contains not more than 20 percent by weight source material; (2) piezoelectric ceramic containing not more than 2 percent by weight source material; (3) glassware containing not more than 2 percent by weight source material or, for glassware manufactured before August 27, 2013, 10 percent by weight source material; but not including commercially manufactured glass brick, pane glass, ceramic tile or other glass or ceramic used in constructions; and (4) glass enamel or glass enamel frit containing not more than 10 percent by weight source material imported or ordered for importation into the United States, or initially distributed by manufacturers in the United States before July 25, 1983.

Delete 2.20.1.3.5.1 and renumber 2.20.1.3.5.2 thru 2.20.1.3.5.4, accordingly.

Revise Footnote 5 (2.20.1.3.5.3) to read:

⁵The requirements specified in subdivisions RHA 2.20.1.3.5.1 and 2.20.1.3.5.2 need not be met by counterweights manufactured prior to December 31, 1969; provided, that such counterweights were manufactured under a specific license issued by the Atomic Energy Commission and were impressed with the legend required by RHA 2.20.1.3.5.2 in effect on June 30, 1969.

Revise subparagraphs 2.20.1.3.7 through 2.20.1.3.7.2 to read:

2.20.1.3.7 Thorium or uranium contained in or on finished optical lenses and mirrors, provided that each lens or mirror does not contain more than 10 percent by weight of thorium or uranium or, for lenses manufactured before August 27, 2013, 30 percent by weight of thorium. The exemption contained in this subparagraph (2.20.1.3.7) shall not be deemed to authorize either:

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

2.20.1.3.7.2 The receipt, possession, use or transfer of uranium or thorium contained in contact lenses, or in spectacles, or in eyepieces in binoculars or other optical instruments.

Add subparagraphs 2.20.1.3.10 through 2.20.1.3.10.2 to read:

2.20.1.3.10 No person may initially transfer for sale or distribution a product containing source material to persons exempt under RHA 2.20.1.3, or equivalent regulations unless authorized by a specific license to initially transfer such products for sale or distribution.

2.20.1.3.10.1 Persons initially distributing source material in products covered by the exemptions in RHA 2.20.1.3 before August 27, 2013, without specific authorization may continue such distribution for 1 year beyond this date. Initial distribution may also be continued until the Department takes final action on a pending application for license or license amendment to specifically authorize distribution submitted no later than 1 year beyond this date.

2.20.1.3.10.2 Persons authorized to manufacture, process, or produce these materials or products containing source material by the NRC or an Agreement State, and persons who import finished products or parts, for sale or distribution must be authorized by a specific license for distribution only and are exempt from the requirements of Parts III and VI of Title A, and RHA 2.6.1 and 2.6.2.

Revise 2.20.2.2.1.8 to read:

2.20.2.2.1.8 1 microcurie (37 kBq) of Radium-226 timepiece in intact timepieces manufactured prior to November 30, 2007.

Add subparagraphs 2.20.2.2.10 through 2.20.2.2.12 to read:

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

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

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

Revise subparagraphs 2.20.2.3 through 2.20.2.3.1 to read:

2.20.2.3 Gas and aerosol detectors containing byproduct material. Except for persons who manufacture, possess, produce, or initially transfer for sale or distribution gas and aerosol detectors containing byproduct material, any person is exempt from the requirements for a license in these regulations to the extent that such person receives, possesses, uses, transfers, owns, or acquires byproduct material in gas and aerosol detectors designed to protect health, safety, or property, and manufactured, processed, produced, or initially transferred in accordance with a specific license issued by the U.S. Nuclear Regulatory Commission pursuant to Section 32.26 of 10 CFR Part 32 which license authorizes the initial transfer of the product for use under this section. This exemption also covers gas and aerosol detectors manufactured or distributed before November 30, 2007 in accordance with a specific license issued by a Licensing State with comparable provisions to 10 CFR 32.26 authorizing distribution to persons exempt from regulatory requirements.

Any person who desires to manufacture, process, or produce gas and aerosol detectors containing byproduct material, or to initially transfer such products for use under RHA 2.20.2.3, should apply for a license under 10 CFR 32.26 and for a certificate of registration in accordance with RHA 2.29.

Revise 2.20.2.4.1 to read:

2.20.2.4.1 Any person who desires to manufacture, process, or produce, or initially transfer for sale or distribution self-luminous products containing tritium, krypton-85, or promethium-147 for use under RHA 2.20.2.4, should apply for a license pursuant to Part 2 and for a certificate of registration in accordance with RHA 2.29.

Add subparagraphs 2.20.2.5.6.1 through 2.20.2.5.6.2 to read:

2.20.2.5.6.1 Except for persons who manufacture, process, produce, or initially transfer for sale or distribution industrial devices containing byproduct material designed and manufactured for the purpose of detecting, measuring, gauging or controlling thickness, density, level, interface location, radiation, leakage, or qualitative or quantitative chemical composition, or for producing an ionized atmosphere, any person is exempt from the requirements for a license set forth in Regulation 61-63, Title A to the extent that such person receives, possesses, uses, transfers, owns, or acquires byproduct material, in these certain detecting, measuring, gauging, or controlling devices and certain devices for producing an ionized atmosphere, and manufactured, processed, produced, or initially transferred in accordance with a specific license issued under Part 2, which license authorizes the initial transfer of the device for use under this section. This exemption does not cover sources not incorporated into a device, such as calibration and reference sources.

2.20.2.5.6.2 Any person who desires to manufacture, process, produce, or initially transfer for sale or distribution industrial devices containing byproduct material for use under 2.20.2.5.6.1, should apply for a license under RHA 2.5 and for a certificate of registration in accordance with RHA 2.29.

Revise 2.29.1 to read:

2.29.1 Any manufacturer or initial distributor of a sealed source or device containing a sealed source may submit a request to the Department for evaluation of radiation safety information about its product and for its registration.

Revise 2.29.2 to read:

2.29.2 The request for review must be sent to the Department. The request for a review of a sealed source or a device must include sufficient information about the design, manufacture, prototype testing, quality control program, labeling, proposed uses and leak testing and for a device, the request must also include sufficient information about installation, service and maintenance, operating and safety instructions, and its potential hazards, to provide reasonable assurance that the radiation safety properties of the source or device are adequate to protect health and minimize danger to life and property.

Revise 2.29.3 to read:

2.29.3 The Department normally evaluates a sealed source or a device using radiation safety criteria in accepted industry standards. If these standards and criteria do not readily apply to a particular case, the Department formulates reasonable standards and criteria with the help of the manufacturer or distributor. The Department shall use criteria and standards sufficient to ensure that the radiation safety properties of

the device or sealed source are adequate to protect health and minimize danger to life and property. RHA 2.20 of this part includes specific criteria that apply to certain exempt products and RHA 2.4 includes specific criteria applicable to certain generally licensed devices. RHA 2.7 includes specific provisions that apply to certain specifically licensed items.

Revise 2.29.4 to read:

2.29.4 After completion of the evaluation, the Department issues a certificate of registration to the person making the request. The certificate of registration acknowledges the availability of the submitted information for inclusion in an application for a specific license proposing use of the product, or concerning use under an exemption from licensing or general license as applicable for the category of certificate.

Add 2.29.6 and subparagraphs 2.29.6.1 through 2.29.6.2.3 to read:

2.29.6 Authority to manufacture or initially distribute a sealed source or device to specific licensees may be provided in the license without the issuance of a certificate of registration in the following cases:

2.29.6.1 Calibration and reference sources containing no more than:

2.29.6.1.1 37 MBq (1 mCi), for beta and/or gamma emitting radionuclides; or

2.29.6.1.2 0.37 MBq (10 µCi), for alpha emitting radionuclides; or

2.29.6.2 The intended recipients are qualified by training and experience and have sufficient facilities and equipment to safely use and handle the requested quantity of radioactive material in any form in the case of unregistered sources or, for registered sealed sources contained in unregistered devices, are qualified by training and experience and have sufficient facilities and equipment to safely use and handle the requested quantity of radioactive material in unshielded form, as specified in their licenses; and

2.29.6.2.1 The intended recipients are licensed under RHA 2.8, or comparable regulation; or

2.29.6.2.2 The recipients are authorized for research and development; or

2.29.6.2.3 The sources and devices are to be built to the unique specifications of the particular recipient and contain no more than 740 GBq (20 Ci) of tritium or 7.4 GBq (200 mCi) of any other radionuclide.

Add 2.29.7 to read:

2.29.7 After the certificate is issued, the Department may conduct an additional review as it determines is necessary to ensure compliance with current regulatory standards. In conducting its review, the Department will complete its evaluation in accordance with criteria specified in this section. The Department may request such additional information as it considers necessary to conduct its review and the certificate holder shall provide the information as requested.

Add 2.29.8 and subparagraphs 2.29.8.1 through 2.29.8.3 to read:

2.29.8 Inactivation of certificates of registration of sealed sources and devices.

2.29.8.1 A certificate holder who no longer manufactures or initially transfers any of the sealed source(s) or device(s) covered by a particular certificate issued by the Department shall request inactivation of the registration certificate. Such a request must be made to the Department and must normally be made no later than two years after initial distribution of all of the source(s) or device(s) covered by the certificate has ceased. However, if the certificate holder determines that an initial transfer was in fact the last initial transfer more than two years after that transfer, the certificate holder shall request inactivation of the certificate within 90 days of this determination and briefly describe the circumstances of the delay.

2.29.8.2 If a distribution license is to be terminated in accordance with RHA 2.11, the licensee shall request inactivation of its registration certificates associated with that distribution license before the Department will terminate the license. Such a request for inactivation of certificate(s) must indicate that the license is being terminated and include the associated specific license number.

2.29.8.3 A specific license to manufacture or initially transfer a source or device covered only by an inactivated certificate no longer authorizes the licensee to initially transfer such sources or devices for use. Servicing of devices must be in accordance with any conditions in the certificate, including in the case of an inactive certificate.

Revise 3.16.1 to read:

3.16.1 Each licensee shall make or cause to be made, surveys of areas, including the subsurface, that--

Revise subparagraphs 3.16.1.2.2 through 3.16.1.2.3 to read:

3.16.1.2.2 Concentrations or quantities of residual radioactivity; and

3.16.1.2.3 The potential radiological hazards of the radiation levels and residual radioactivity detected.

Revise 3.57.3.3.1 to read:

3.57.3.3.1 Funds placed into a trust segregated from the licensee's assets and outside the licensee's administrative control, and in which the adequacy of the trust funds is to be assessed based on an assumed annual 1 percent real rate of return on investment;

Delete 3.57.3.3.2 and renumber 3.57.3.3 through 3.57.3.4, accordingly.

Add 3.57.4.3 to read:

3.57.4.3 Has provided sufficient financial assurance in the form of a trust fund to enable an independent third party, including a governmental custodian of a site, to assume and carry out responsibilities for any necessary control and maintenance of the site.

Revise 3.57.6 to read:

3.57.6 Minimization of contamination

3.57.6.1 Applicants for licenses, other than renewals, whose applications are submitted after August 20, 1997, shall describe in the application how facility design and procedures for operation will minimize, to

the extent practicable, contamination of the facility and the environment, facilitate eventual decommissioning, and minimize, to the extent practicable, the generation of radioactive waste.

Add 3.57.6.2 to read:

3.57.6.2 Licensees shall, to the extent practical, conduct operations to minimize the introduction of residual radioactivity into the site, including the subsurface, in accordance with the existing radiation protection requirements in RHA 3.4 and radiological criteria for license termination in RHA 3.57, Appendix F.

Revise opening paragraph for Appendix G, RHA 3.58 to read:

APPENDIX G

RHA 3.58 NATIONALLY TRACKED SOURCES - SERIALIZATION AND REPORTS OF TRANSACTIONS

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. Each licensee who manufactures, transfers, receives, disassembles, or disposes of a nationally tracked source shall complete and submit a National Source Tracking Transaction Report to the National Source Tracking System as specified in paragraphs 3.58.1 through 3.58.5 of this section for each type of transaction.

Revise 5.6.1 to read:

5.6.1 Each radiographic exposure device, source assembly or sealed source, and all associated equipment must meet the requirements specified in American National Standard N432-1980 "Radiological Safety for the Design and Construction of Apparatus for Gamma Radiography," (published as NBS Handbook 136 issued January 1981). This publication has been approved for incorporation by reference by the Director of the Federal Register in accordance with 5 U.S.C. 552(a). This publication may be purchased from the American National Standards Institute, Inc., 25 West 43rd Street, New York, New York 10036; Telephone (212) 642-4900. Copies of the document are available for inspection at the Nuclear Regulatory Commission library, 11545 Rockville Pike, Rockville, Maryland, 20852-2738. A copy of the document is also on file at the Office of the Federal Register, 800 North Capitol Street NW, Suite 700, Washington, DC 20408.

Engineering analyses may be submitted by an applicant or licensee to demonstrate the applicability of previously performed testing on similar individual radiography equipment components. Upon review, the Department may find this an acceptable alternative to actual testing of the component pursuant to the referenced standard.

Revise 8.4.1 to read:

8.4.1 The applicant shall satisfy the general requirements specified in RHA 2.6 of these regulations, as appropriate, and any special requirements contained in this Part.

Revise 11.3.2 to read:

11.3.2 The applicant shall satisfy the general requirements specified in RHA 2.6 and the requirements contained in this Part.

Add Part XII to read:

PART XII

PHYSICAL PROTECTION OF CATEGORY 1 AND CATEGORY 2 QUANTITIES OF RADIOACTIVE MATERIAL

Subpart A—General Provisions

- 12.1 Purpose
- 12.2 Definitions
- 12.3 Specific exemptions

Subpart B—Background Investigations and Access Control Program

- 12.4 Personnel access authorization requirements for Category 1 or Category 2 quantities of radioactive material
- 12.5 Access authorization program requirements
- 12.6 Background investigations
- 12.7 Requirements for criminal history records checks of individuals granted unescorted access to Category 1 or Category 2 quantities of radioactive material
- 12.8 Relief from fingerprinting, identification, and criminal history records checks and other elements of background investigations for designated categories of individuals permitted unescorted access to certain radioactive materials
- 12.9 Protection of information
- 12.10 Access authorization program review

Subpart C—Physical Protection Requirements During Use

- 12.11 Security program
- 12.12 General security program requirements
- 12.13 LLEA coordination
- 12.14 Security zones
- 12.15 Monitoring, detection, and assessment
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- 12.17 Requirements for mobile devices
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Subpart D—Physical Protection in Transit

- 12.20 Additional requirements for transfer of Category 1 and Category 2 quantities of radioactive material
- 12.21 Applicability of physical protection of Category 1 and Category 2 quantities of radioactive material during transit
- 12.22 Preplanning and coordination of shipment of Category 1 or Category 2 quantities of radioactive material
- 12.23 Advance notification of shipment of Category 1 quantities of radioactive material
- 12.24 Requirements for physical protection of Category 1 and Category 2 quantities of radioactive material during shipment
- 12.25 Reporting of events

Subpart E—Records

- 12.26 Form of records

12.27 Record retention.

Appendix A—Category 1 and Category 2 Radioactive Materials

Subpart A --- General Provisions

RHA 12.1 Purpose

This part has been established to provide the requirements for the physical protection program for any licensee that possesses an aggregated Category 1 or Category 2 quantity of radioactive material listed in Appendix A to this part. These requirements provide reasonable assurance of the security of Category 1 or Category 2 quantities of radioactive material by protecting these materials from theft or diversion. Specific requirements for access to material, use of material, transfer of material, and transport of material are included. No provision of this part authorizes possession of licensed material.

RHA 12.2 Definitions. As used in this part:

12.2.1 “**Access control**” means a system for allowing only approved individuals to have unescorted access to the security zone and for ensuring that all other individuals are subject to escorted access.

12.2.2 “**Aggregated**” means accessible by the breach of a single physical barrier that would allow access to radioactive material in any form, including any devices that contain the radioactive material, when the total activity equals or exceeds a Category 2 quantity of radioactive material.

12.2.3 “**Approved individual**” means an individual whom the licensee has determined to be trustworthy and reliable for unescorted access in accordance with Subpart B and who has completed the training required by RHA 12.12.3.

12.2.4 “**Background investigation**” means the investigation conducted by a licensee or applicant to support the determination of trustworthiness and reliability.

12.2.5 “**Carrier**” means a person engaged in the transportation of passengers or property by land or water as a common, contract, or private carrier, or by civil aircraft.

12.2.6 “**Category 1 quantity of radioactive material**” means a quantity of radioactive material meeting or exceeding the Category 1 threshold in Table 1 of Appendix A to this part. This is determined by calculating the ratio of the total activity of each radionuclide to the Category 1 threshold for that radionuclide and adding the ratios together. If the sum is equal to or exceeds 1, the quantity would be considered a Category 1 quantity. Category 1 quantities of radioactive material do not include the radioactive material contained in any fuel assembly, subassembly, fuel rod, or fuel pellet.

12.2.7 “**Category 2 quantity of radioactive material**” means a quantity of radioactive material meeting or exceeding the Category 2 threshold but less than the Category 1 threshold in Table 1 of Appendix A to this part. This is determined by calculating the ratio of the total activity of each radionuclide to the Category 2 threshold for that radionuclide and adding the ratios together. If the sum is equal to or exceeds 1, the quantity would be considered a Category 2 quantity. Category 2 quantities of radioactive material do not include the radioactive material contained in any fuel assembly, subassembly, fuel rod, or fuel pellet.

12.2.8 “**Curie**” means that amount of radioactive material which disintegrates at the rate of 37 billion atoms per second.

12.2.9 “**Department**” means the SC Department of Health & Environmental Control or its duly authorized representatives.

12.2.10 “**Diversions**” means the unauthorized movement of radioactive material subject to this part to a location different from the material’s authorized destination inside or outside of the site at which the material is used or stored.

12.2.11 “**Escorted access**” means accompaniment while in a security zone by an approved individual who maintains continuous direct visual surveillance at all times over an individual who is not approved for unescorted access.

12.2.12 “**Fingerprint orders**” means the orders issued by the U.S. Nuclear Regulatory Commission or the legally binding requirements issued by Agreement States that require fingerprints and criminal history records checks for individuals with unescorted access to Category 1 and Category 2 quantities of radioactive material or safeguards information-modified handling.

12.2.13 “**Local law enforcement agency (LLEA)**” means a public or private organization that has been approved by a federal, state, or local government to carry firearms and make arrests, and is authorized and has the capability to provide an armed response in the jurisdiction where the licensed Category 1 or Category 2 quantity of radioactive material is used, stored, or transported.

12.2.14 “**Mobile device**” means a piece of equipment containing licensed radioactive material that is either mounted on wheels or casters, or otherwise equipped for moving without a need for disassembly or dismounting; or designed to be hand carried. Mobile devices do not include stationary equipment installed in a fixed location.

12.2.15 “**Movement control center**” means an operations center that is remote from transport activity and that maintains position information on the movement of radioactive material, receives reports of attempted attacks or thefts, provides a means for reporting these and other problems to appropriate agencies and can request and coordinate appropriate aid.

12.2.16 “**No-later-than arrival time**” means the date and time that the shipping licensee and receiving licensee have established as the time at which an investigation will be initiated if the shipment has not arrived at the receiving facility. The no-later-than-arrival time may not be more than 6 hours after the estimated arrival time for shipments of Category 2 quantities of radioactive material.

12.2.17 “**Reviewing official**” means the individual who shall make the trustworthiness and reliability determination of an individual to determine whether the individual may have, or continue to have, unescorted access to the Category 1 or Category 2 quantities of radioactive materials that are possessed by the licensee.

12.2.18 “**Sabotage**” means deliberate damage, with malevolent intent, to a Category 1 or Category 2 quantity of radioactive material, a device that contains a Category 1 or Category 2 quantity of radioactive material, or the components of the security system.

12.2.19 “**Safe haven**” means a readily recognizable and readily accessible site at which security is present or from which, in the event of an emergency, the transport crew can notify and wait for the local law enforcement authorities.

12.2.20 “**Security zone**” means any temporary or permanent area determined and established by the licensee for the physical protection of Category 1 or Category 2 quantities of radioactive material.

12.2.21 “**Telemetric position monitoring system**” means a data transfer system that captures information by instrumentation and/or measuring devices about the location and status of a transport vehicle or package between the departure and destination locations.

12.2.22 “**Trustworthiness and reliability**” are characteristics of an individual considered dependable in judgment, character, and performance, such that unescorted access to Category 1 or Category 2 quantities of radioactive material by that individual does not constitute an unreasonable risk to the public health and safety or security. A determination of trustworthiness and reliability for this purpose is based upon the results from a background investigation.

12.2.23 “**Unescorted access**” means solitary access to an aggregated Category 1 or Category 2 quantity of radioactive material or the devices that contain the material.

RHA 12.3 Specific exemptions

12.3 A licensee that possesses radioactive waste that contains Category 1 or Category 2 quantities of radioactive material is exempt from the requirements of Subparts B, C, and D. Except that any radioactive waste that contains discrete sources, ion-exchange resins, or activated material that weighs less than 2,000 kg (4,409 lbs) is not exempt from the requirements of this part. The licensee shall implement the following requirements to secure the radioactive waste:

12.3.1 Use continuous physical barriers that allow access to the radioactive waste only through established access control points;

12.3.2 Use a locked door or gate with monitored alarm at the access control point;

12.3.3 Assess and respond to each actual or attempted unauthorized access to determine whether an actual or attempted theft, sabotage, or diversion occurred; and

12.3.4 Immediately notify the LLEA and request an armed response from the LLEA upon determination that there was an actual or attempted theft, sabotage, or diversion of the radioactive waste that contains Category 1 or Category 2 quantities of radioactive material.

Subpart B --- Background Investigations and Access Authorization Program

RHA 12.4 Personnel access authorization requirements for Category 1 or Category 2 quantities of radioactive material

12.4.1 General.

12.4.1.1 Each licensee that possesses an aggregated quantity of radioactive material at or above the Category 2 threshold shall establish, implement, and maintain its access authorization program in accordance with the requirements of Subpart B.

12.4.1.2 An applicant for a new license and each licensee that would become newly subject to the requirements of Subpart B upon application for modification of its license shall implement the

requirements of Subpart B, as appropriate, before taking possession of an aggregated Category 1 or Category 2 quantity of radioactive material.

12.4.1.3 Any licensee that has not previously implemented the Security Orders or been subject to the provisions of Subpart B shall implement the provisions of Subpart B before aggregating radioactive material to a quantity that equals or exceeds the Category 2 threshold.

12.4.2 General performance objective. The licensee's access authorization program must ensure that the individuals specified in paragraph RHA 12.4.3.1 of this section are trustworthy and reliable.

12.4.3 Applicability.

12.4.3.1 Licensees shall subject the following individuals to an access authorization program:

12.4.3.1.1 Any individual whose assigned duties require unescorted access to Category 1 or Category 2 quantities of radioactive material or to any device that contains the radioactive material; and

12.4.3.1.2 Reviewing officials.

12.4.3.2 Licensees need not subject the categories of individuals listed in RHA 12.8.1.1 through 12.8.1.13 to the investigation elements of the access authorization program.

12.4.3.3 Licensees shall approve for unescorted access to Category 1 or Category 2 quantities of radioactive material only those individuals with job duties that require unescorted access to Category 1 or Category 2 quantities of radioactive material.

12.4.3.4 Licensees may include individuals needing access to safeguards information-modified handling under 10 CFR Part 73 in the access authorization program under Subpart B.

RHA 12.5 Access authorization program requirements

12.5.1 Granting unescorted access authorization.

12.5.1.1 Licensees shall implement the requirements of Subpart B for granting initial or reinstated unescorted access authorization.

12.5.1.2 Individuals who have been determined to be trustworthy and reliable shall also complete the security training required by RHA 12.12.3 before being allowed unescorted access to Category 1 or Category 2 quantities of radioactive material.

12.5.2 Reviewing officials.

12.5.2.1 Reviewing officials are the only individuals who may make trustworthiness and reliability determinations that allow individuals to have unescorted access to Category 1 or Category 2 quantities of radioactive materials possessed by the licensee.

12.5.2.2 Each licensee shall name one or more individuals to be reviewing officials. After completing the background investigation on the reviewing official, the licensee shall provide under oath or affirmation, a certification that the reviewing official is deemed trustworthy and reliable by the licensee. The fingerprints of the named reviewing official must be taken by a law enforcement agency, Federal or State agencies that provide fingerprinting services to the public, or commercial fingerprinting services

authorized by a State to take fingerprints. The licensee shall recertify that the reviewing official is deemed trustworthy and reliable every 10 years in accordance with RHA 12.6.2.

12.5.2.3 Reviewing officials must be permitted to have unescorted access to Category 1 or Category 2 quantities of radioactive materials or access to safeguards information or safeguards information-modified handling, if the licensee possesses safeguards information or safeguards information modified handling.

12.5.2.4 Reviewing officials cannot approve other individuals to act as reviewing officials.

12.5.2.5 A reviewing official does not need to undergo a new background investigation before being named by the licensee as the reviewing official if:

12.5.2.5.1 The individual has undergone a background investigation that included fingerprinting and an FBI criminal history records check and has been determined to be trustworthy and reliable by the licensee; or

12.5.2.5.2 The individual is subject to a Category listed in RHA 12.8.1.

12.5.3 Informed consent.

12.5.3.1 Licensees may not initiate a background investigation without the informed and signed consent of the subject individual. This consent must include authorization to share personal information with other individuals or organizations as necessary to complete the background investigation. Before a final adverse determination, the licensee shall provide the individual with an opportunity to correct any inaccurate or incomplete information that is developed during the background investigation. Licensees do not need to obtain signed consent from those individuals that meet the requirements of RHA 12.6.2. A signed consent must be obtained prior to any reinvestigation.

12.5.3.2 The subject individual may withdraw his or her consent at any time. Licensees shall inform the individual that:

12.5.3.2.1 If an individual withdraws his or her consent, the licensee may not initiate any elements of the background investigation that were not in progress at the time the individual withdrew his or her consent; and

12.5.3.2.2 The withdrawal of consent for the background investigation is sufficient cause for denial or termination of unescorted access authorization.

12.5.4 Personal history disclosure.

Any individual who is applying for unescorted access authorization shall disclose the personal history information that is required by the licensee's access authorization program for the reviewing official to make a determination of the individual's trustworthiness and reliability. Refusal to provide, or the falsification of, any personal history information required by Subpart B is sufficient cause for denial or termination of unescorted access.

12.5.5 Determination basis.

12.5.5.1 The reviewing official shall determine whether to permit, deny, unfavorably terminate, maintain, or administratively withdraw an individual's unescorted access authorization based on an evaluation of all of the information collected to meet the requirements of Subpart B.

12.5.5.2 The reviewing official may not permit any individual to have unescorted access until the reviewing official has evaluated all of the information collected to meet the requirements of Subpart B and determined that the individual is trustworthy and reliable. The reviewing official may deny unescorted access to any individual based on information obtained at any time during the background investigation.

12.5.5.3 The licensee shall document the basis for concluding whether or not there is reasonable assurance that an individual is trustworthy and reliable.

12.5.5.4 The reviewing official may terminate or administratively withdraw an individual's unescorted access authorization based on information obtained after the background investigation has been completed and the individual granted unescorted access authorization.

12.5.5.5 Licensees shall maintain a list of persons currently approved for unescorted access authorization. When a licensee determines that a person no longer requires unescorted access or meets the access authorization requirement, the licensee shall remove the person from the approved list as soon as possible, but no later than 7 working days, and take prompt measures to ensure that the individual is unable to have unescorted access to the material.

12.5.6 Procedures. Licensees shall develop, implement, and maintain written procedures for implementing the access authorization program. The procedures must include provisions for the notification of individuals who are denied unescorted access. The procedures must include provisions for the review, at the request of the affected individual, of a denial or termination of unescorted access authorization. The procedures must contain a provision to ensure that the individual is informed of the grounds for the denial or termination of unescorted access authorization and allow the individual an opportunity to provide additional relevant information.

12.5.7 Right to correct and complete information.

12.5.7.1 Prior to any final adverse determination, licensees shall provide each individual subject to Subpart B with the right to complete, correct, and explain information obtained as a result of the licensee's background investigation. Confirmation of receipt by the individual of this notification must be maintained by the licensee for a period of 1 year from the date of the notification.

12.5.7.2 If, after reviewing his or her criminal history record, an individual believes that it is incorrect or incomplete in any respect and wishes to change, correct, update, or explain anything in the record, the individual may initiate challenge procedures. These procedures include direct application by the individual challenging the record to the law enforcement agency that contributed the questioned information or a direct challenge as to the accuracy or completeness of any entry on the criminal history record to the Federal Bureau of Investigation, Criminal Justice Information Services (CJIS) Division, ATTN: SCU, Mod. D-2, 1000 Custer Hollow Road, Clarksburg, WV 26306 as set forth in 28 CFR 16.30 through 16.34. In the latter case, the Federal Bureau of Investigation (FBI) will forward the challenge to the agency that submitted the data, and will request that the agency verify or correct the challenged entry. Upon receipt of an official communication directly from the agency that contributed the original information, the FBI Identification Division makes any changes necessary in accordance with the information supplied by that agency. Licensees must provide at least 10 days for an individual to initiate action to challenge the results of an FBI criminal history records check after the record being made available for his or her review. The licensee may make a final adverse determination based upon the criminal history records only after receipt of the FBI's confirmation or correction of the record.

12.5.8 Records.

12.5.8.1 The licensee shall retain documentation regarding the trustworthiness and reliability of individual employees for 3 years from the date the individual no longer requires unescorted access to Category 1 or Category 2 quantities of radioactive material.

12.5.8.2 The licensee shall retain a copy of the current access authorization program procedures as a record for 3 years after the procedure is no longer needed. If any portion of the procedure is superseded, the licensee shall retain the superseded material for 3 years after the record is superseded.

12.5.8.3 The licensee shall retain the list of persons approved for unescorted access authorization for 3 years after the list is superseded or replaced.

RHA 12.6 Background investigations

12.6.1 Initial investigation. Before allowing an individual unescorted access to Category 1 or Category 2 quantities of radioactive material or to the devices that contain the material, licensees shall complete a background investigation of the individual seeking unescorted access authorization. The scope of the investigation must encompass at least the 7 years preceding the date of the background investigation or since the individual's eighteenth birthday, whichever is shorter. The background investigation must include at a minimum:

12.6.1.1 Fingerprinting and an FBI identification and criminal history records check in accordance with RHA 12.7;

12.6.1.2 Verification of true identity. Licensees shall verify the true identity of the individual who is applying for unescorted access authorization to ensure that the applicant is who he or she claims to be. A licensee shall review official identification documents (*e.g.*, driver's license; passport; government identification; certificate of birth issued by the state, province, or country of birth) and compare the documents to personal information data provided by the individual to identify any discrepancy in the information. Licensees shall document the type, expiration, and identification number of the identification document, or maintain a photocopy of identifying documents on file in accordance with RHA 12.9. Licensees shall certify in writing that the identification was properly reviewed, and shall maintain the certification and all related documents for review upon inspection;

12.6.1.3 Employment history verification. Licensees shall complete an employment history verification, including military history. Licensees shall verify the individual's employment with each previous employer for the most recent 7 years before the date of application;

12.6.1.4 Verification of education. Licensees shall verify that the individual participated in the education process during the claimed period;

12.6.1.5 Character and reputation determination. Licensees shall complete reference checks to determine the character and reputation of the individual who has applied for unescorted access authorization. Unless other references are not available, reference checks may not be conducted with any person who is known to be a close member of the individual's family, including but not limited to the individual's spouse, parents, siblings, or children, or any individual who resides in the individual's permanent household. Reference checks under Subpart B must be limited to whether the individual has been and continues to be trustworthy and reliable;

12.6.1.6 The licensee shall also, to the extent possible, obtain independent information to corroborate that provided by the individual (*e.g.*, seek references not supplied by the individual); and

12.6.1.7 If a previous employer, educational institution, or any other entity with which the individual claims to have been engaged fails to provide information or indicates an inability or unwillingness to provide information within a time frame deemed appropriate by the licensee but at least after 10 business days of the request or if the licensee is unable to reach the entity, the licensee shall document the refusal, unwillingness, or inability in the record of investigation; and attempt to obtain the information from an alternate source.

12.6.2 Grandfathering.

12.6.2.1 Individuals who have been determined to be trustworthy and reliable for unescorted access to Category 1 or Category 2 quantities of radioactive material under the Fingerprint Orders may continue to have unescorted access to Category 1 and Category 2 quantities of radioactive material without further investigation. These individuals shall be subject to the reinvestigation requirement.

12.6.2.2 Individuals who have been determined to be trustworthy and reliable under the provisions of 10 CFR Part 73 or the security orders for safeguards information-modified handling, or risk-significant material may have unescorted access to Category 1 and Category 2 quantities of radioactive material without further investigation. The licensee shall document that the individual was determined to be trustworthy and reliable under the provisions of 10 CFR Part 73 or a security order. Security order, in this context, refers to any order that was issued by the NRC that required fingerprints and an FBI criminal history records check for access to safeguards information, safeguards information-modified handling, or risk significant material such as special nuclear material or large quantities of uranium hexafluoride. These individuals shall be subject to the reinvestigation requirement.

12.6.3 Reinvestigations. Licensees shall conduct a reinvestigation every 10 years for any individual with unescorted access to Category 1 or Category 2 quantities of radioactive material. The reinvestigation shall consist of fingerprinting and an FBI identification and criminal history records check in accordance with RHA 12.7. The reinvestigations must be completed within 10 years of the date on which these elements were last completed.

RHA 12.7 Requirements for criminal history records checks of individuals granted unescorted access to Category 1 or Category 2 quantities of radioactive material

12.7.1 General performance objective and requirements.

12.7.1.1 Except for those individuals listed in RHA 12.8 and those individuals grandfathered under RHA 12.6.2, each licensee subject to the provisions of Subpart B shall fingerprint each individual who is to be permitted unescorted access to Category 1 or Category 2 quantities of radioactive material. Licensees shall transmit all collected fingerprints to the Department for transmission to the FBI. The licensee shall use the information received from the FBI as part of the required background investigation to determine whether to grant or deny further unescorted access to Category 1 or Category 2 quantities of radioactive materials for that individual.

12.7.1.2 The licensee shall notify each affected individual that his or her fingerprints will be used to secure a review of his or her criminal history record, and shall inform him or her of the procedures for revising the record or adding explanations to the record.

12.7.1.3 Fingerprinting is not required if a licensee is reinstating an individual's unescorted access authorization to Category 1 or Category 2 quantities of radioactive materials if:

12.7.1.3.1 The individual returns to the same facility that granted unescorted access authorization within 365 days of the termination of his or her unescorted access authorization; and

12.7.1.3.2 The previous access was terminated under favorable conditions.

12.7.1.4 Fingerprints do not need to be taken if an individual who is a manufacturer, or supplier has been granted unescorted access to Category 1 or Category 2 quantities of radioactive material, access to safeguards information, or safeguards information modified handling by another licensee, based upon a background investigation conducted under Subpart B, the Fingerprint Orders, or 10 CFR Part 73. An existing criminal history records check file may be transferred to the licensee asked to grant unescorted access in accordance with the provisions of RHA 12.9.3.

12.7.1.5 Licensees shall use the information obtained as part of a criminal history records check solely for the purpose of determining an individual's suitability for unescorted access authorization to Category 1 or Category 2 quantities of radioactive information, or safeguards information modified handling.

12.7.2 Prohibitions.

12.7.2.1 Licensees may not base a final determination to deny an individual unescorted access authorization to Category 1 or Category 2 quantities of radioactive material solely on the basis of information received from the FBI involving:

12.7.2.1.1 An arrest more than 1 year old for which there is no information of the disposition of the case; or

12.7.2.1.2 An arrest that resulted in dismissal of the charge or an acquittal.

12.7.2.2 Licensees may not use information received from a criminal history records check obtained under Subpart B in a manner that would infringe upon the rights of any individual under the First Amendment to the Constitution of the United States, nor shall licensees use the information in any way that would discriminate among individuals on the basis of race, religion, national origin, gender, or age.

12.7.3 Procedures for processing of fingerprint checks.

12.7.3.1 For the purpose of complying with Subpart B, Department licensees shall submit to the U.S. Nuclear Regulatory Commission, one completed, legible standard fingerprint card (Form FD-258, ORIMDNRCOOOZ), electronic fingerprint scan or, where practicable, other fingerprint record for each individual requiring unescorted access to Category 1 or Category 2 quantities of radioactive material. Copies of these forms may be obtained by writing the Office of Information Services, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, by calling 1-630-829-9565, or by email to FORMS.Resource@nrc.gov. Guidance on submitting electronic fingerprints can be found at <http://www.nrc.gov/site-help/esubmittals.html>.

12.7.3.2 Fees for the processing of fingerprint checks are due upon application. Licensees shall submit payment with the application for the processing of fingerprints through corporate check, certified check, cashier's check, money order, or electronic payment, made payable to "U.S. NRC." (For guidance on making electronic payments, contact the Security Branch, Division of Facilities and Security at 301-492-3531.) Combined payment for multiple applications is acceptable. The Commission publishes the amount

of the fingerprint check application fee on the NRC's public Web site. (To find the current fee amount, go to the Electronic Submittals page at <http://www.nrc.gov/site-help/e-submittals.html> and see the link for the Criminal History Program under Electronic Submission Systems.)

12.7.3.3 The U.S. Nuclear Regulatory Commission will forward to the submitting Department licensee all data received from the FBI as a result of the licensee's application(s) for criminal history records checks.

RHA 12.8 Relief from fingerprinting, identification, and criminal history records checks and other elements of background investigations for designated categories of individuals permitted unescorted access to certain radioactive materials

12.8.1 Fingerprinting, and the identification and criminal history records checks required by section 149 of the Atomic Energy Act of 1954, as amended, and other elements of the background investigation are not required for the following individuals prior to granting unescorted access to Category 1 or Category 2 quantities of radioactive materials:

12.8.1.1 An employee of the Department who has undergone fingerprinting for a prior U.S. Government criminal history records check;

12.8.1.2 A Member of Congress;

12.8.1.3 An employee of a member of Congress or Congressional committee who has undergone fingerprinting for a prior U.S. Government criminal history records check;

12.8.1.4 The Governor of a State or his or her designated State employee representative;

12.8.1.5 Federal, State, or local law enforcement personnel;

12.8.1.6 State Radiation Control Program Directors and State Homeland Security Advisors or their designated State employee representatives;

12.8.1.7 Agreement State employees conducting security inspections on behalf of the NRC under an agreement executed under section 274.i. of the Atomic Energy Act; (8) Representatives of the International Atomic Energy Agency (IAEA) engaged in activities associated with the U.S./IAEA Safeguards Agreement who have been certified by the NRC;

12.8.1.9 Emergency response personnel who are responding to an emergency;

12.8.1.10 Commercial vehicle drivers for road shipments of Category 2 quantities of radioactive material;

12.8.1.11 Package handlers at transportation facilities such as freight terminals and railroad yards;

12.8.1.12 Any individual who has an active Federal security clearance, provided that he or she makes available the appropriate documentation. Written confirmation from the agency/employer that granted the Federal security clearance or reviewed the criminal history records check must be provided to the licensee. The licensee shall retain this documentation for a period of 3 years from the date the individual no longer requires unescorted access to Category 1 or Category 2 quantities of radioactive material; and

12.8.1.13 Any individual employed by a service provider licensee for which the service provider licensee has conducted the background investigation for the individual and approved the individual for unescorted access to Category 1 or Category 2 quantities of radioactive material. Written verification from the service provider must be provided to the licensee. The licensee shall retain the documentation for a period of 3 years from the date the individual no longer requires unescorted access to Category 1 or Category 2 quantities of radioactive material.

12.8.2 Fingerprinting, and the identification and criminal history records checks required by section 149 of the Atomic Energy Act of 1954, as amended, are not required for an individual who has had a favorably adjudicated U.S. Government criminal history records check within the last 5 years, under a comparable U.S. Government program involving fingerprinting and an FBI identification and criminal history records check provided that he or she makes available the appropriate documentation. Written confirmation from the agency/employer that reviewed the criminal history records check must be provided to the licensee. The licensee shall retain this documentation for a period of 3 years from the date the individual no longer requires unescorted access to Category 1 or Category 2 quantities of radioactive material. These programs include, but are not limited to:

12.8.2.1 National Agency Check;

12.8.2.2 Transportation Worker Identification Credentials (TWIC) under 49 CFR part 1572;

12.8.2.3 Bureau of Alcohol, Tobacco, Firearms, and Explosives background check and clearances under 27 CFR part 555;

12.8.2.4 Health and Human Services security risk assessments for possession and use of select agents and toxins under 42 CFR part 73;

12.8.2.5 Hazardous Material security threat assessment for hazardous material endorsement to commercial drivers license under 49 CFR part 1572; and

12.8.2.6 Customs and Border Protection's Free and Secure Trade (FAST) Program.

RHA 12.9 Protection of information

12.9.1 Each licensee who obtains background information on an individual under Subpart B shall establish and maintain a system of files and written procedures for protection of the record and the personal information from unauthorized disclosure.

12.9.2 The licensee may not disclose the record or personal information collected and maintained to persons other than the subject individual, his or her representative, or to those who have a need to have access to the information in performing assigned duties in the process of granting or denying unescorted access to Category 1 or Category 2 quantities of radioactive material, safeguards information, or safeguards information-modified handling. No individual authorized to have access to the information may disseminate the information to any other individual who does not have a need to know.

12.9.3 The personal information obtained on an individual from a background investigation may be provided to another licensee:

12.9.3.1 Upon the individual's written request to the licensee holding the data to disseminate the information contained in his or her file; and

12.9.3.2 The recipient licensee verifies information such as name, date of birth, social security number, gender, and other applicable physical characteristics.

12.9.4 The licensee shall make background investigation records obtained under Subpart B available for examination by an authorized representative of the Department to determine compliance with the regulations and laws.

12.9.5 The licensee shall retain all fingerprint and criminal history records (including data indicating no record) received from the FBI, or a copy of these records if the individual's file has been transferred, on an individual for 3 years from the date the individual no longer requires unescorted access to Category 1 or Category 2 quantities of radioactive material.

RHA 12.10 Access authorization program review

12.10.1 Each licensee shall be responsible for the continuing effectiveness of the access authorization program. Each licensee shall ensure that access authorization programs are reviewed to confirm compliance with the requirements of Subpart B and that comprehensive actions are taken to correct any noncompliance that is identified. The review program shall evaluate all program performance objectives and requirements. Each licensee shall periodically (at least annually) review the access program content and implementation.

12.10.2 The results of the reviews, along with any recommendations, must be documented. Each review report must identify conditions that are adverse to the proper performance of the access authorization program, the cause of the condition(s), and, when appropriate, recommend corrective actions, and corrective actions taken. The licensee shall review the findings and take any additional corrective actions necessary to preclude repetition of the condition, including reassessment of the deficient areas where indicated.

12.10.3 Review records must be maintained for 3 years.

Subpart C --- Physical Protection Requirements During Use

RHA 12.11 Security program

12.11.1 Applicability

12.11.1.1 Each licensee that possesses an aggregated Category 1 or Category 2 quantity of radioactive material shall establish, implement, and maintain a security program in accordance with the requirements of Subpart C.

12.11.1.2 An applicant for a new license and each licensee that would become newly subject to the requirements of Subpart C upon application for modification of its license shall implement the requirements of Subpart C, as appropriate, before taking possession of an aggregated Category 1 or Category 2 quantity of radioactive material.

12.11.1.3 Any licensee that has not previously implemented the Security Orders or been subject to the provisions of Subpart C shall provide written notification to the Department at least 90 days before aggregating radioactive material to a quantity that equals or exceeds the Category 2 threshold.

12.11.2 General performance objective. Each licensee shall establish, implement, and maintain a security program that is designed to monitor and, without delay, detect, assess, and respond to an actual or attempted unauthorized access to Category 1 or Category 2 quantities of radioactive material.

12.11.3 Program features. Each licensee's security program must include the program features, as appropriate, described in RHA 12.12, 12.13, 12.14, 12.15, 12.16, 12.17, and 12.18.

RHA 12.12 General security program requirements

12.12.1 Security plan.

12.12.1.1 Each licensee identified in RHA 12.11.1 shall develop a written security plan specific to its facilities and operations. The purpose of the security plan is to establish the licensee's overall security strategy to ensure the integrated and effective functioning of the security program required by Subpart C. The security plan must, at a minimum:

12.12.1.1.1 Describe the measures and strategies used to implement the requirements of Subpart C; and

12.12.1.1.2 Identify the security resources, equipment, and technology used to satisfy the requirements of Subpart C.

12.12.1.2 The security plan must be reviewed and approved by the individual with overall responsibility for the security program.

12.12.1.3 A licensee shall revise its security plan as necessary to ensure the effective implementation of Department requirements. The licensee shall ensure that:

12.12.1.3.1 The revision has been reviewed and approved by the individual with overall responsibility for the security program; and

12.12.1.3.2 The affected individuals are instructed on the revised plan before the changes are implemented.

12.12.1.4 The licensee shall retain a copy of the current security plan as a record for 3 years after the security plan is no longer required. If any portion of the plan is superseded, the licensee shall retain the superseded material for 3 years after the record is superseded.

12.12.2 Implementing procedures.

12.12.2.1 The licensee shall develop and maintain written procedures that document how the requirements of Subpart C and the security plan will be met.

12.12.2.2 The implementing procedures and revisions to these procedures must be approved in writing by the individual with overall responsibility for the security program.

12.12.2.3 The licensee shall retain a copy of the current procedure as a record for 3 years after the procedure is no longer needed. Superseded portions of the procedure must be retained for 3 years after the record is superseded.

12.12.3 Training.

12.12.3.1 Each licensee shall conduct training to ensure that those individuals implementing the security program possess and maintain the knowledge, skills, and abilities to carry out their assigned duties and responsibilities effectively. The training must include instruction in:

12.12.3.1.1 The licensee's security program and procedures to secure Category 1 or Category 2 quantities of radioactive material, and in the purposes and functions of the security measures employed;

12.12.3.1.2 The responsibility to report promptly to the licensee any condition that causes or may cause a violation of Department requirements;

12.12.3.1.3 The responsibility of the licensee to report promptly to the local law enforcement agency and licensee any actual or attempted theft, sabotage, or diversion of Category 1 or Category 2 quantities of radioactive material; and

12.12.3.1.4 The appropriate response to security alarms.

12.12.3.2 In determining those individuals who shall be trained on the security program, the licensee shall consider each individual's assigned activities during authorized use and response to potential situations involving actual or attempted theft, diversion, or sabotage of Category 1 or Category 2 quantities of radioactive material. The extent of the training must be commensurate with the individual's potential involvement in the security of Category 1 or Category 2 quantities of radioactive material.

12.12.3.3 Refresher training must be provided at a frequency not to exceed 12 months and when significant changes have been made to the security program. This training must include:

12.12.3.3.1 Review of the training requirements of RHA 12.12.3 and any changes made to the security program since the last training;

12.12.3.3.2 Reports on any relevant security issues, problems, and lessons learned;

12.12.3.3.3 Relevant results of Department inspections; and

12.12.3.3.4 Relevant results of the licensee's program review and testing and maintenance.

12.12.3.4 The licensee shall maintain records of the initial and refresher training for 3 years from the date of the training. The training records must include dates of the training, topics covered, a list of licensee personnel in attendance, and related information.

12.12.4 Protection of information.

12.12.4.1 Except as provided in RHA 12.12.4.9, licensees authorized to possess Category 1 or Category 2 quantities of radioactive material shall limit access to and unauthorized disclosure of their security plan, implementing procedures, and the list of individuals that have been approved for unescorted access.

12.12.4.2 Efforts to limit access shall include the development, implementation, and maintenance of written policies and procedures for controlling access to, and for proper handling and protection against unauthorized disclosure of, the security plan and implementing procedures.

12.12.4.3 Before granting an individual access to the security plan or implementing procedures, licensees shall:

12.12.4.3.1 Evaluate an individual's need to know the security plan or implementing procedures; and

12.12.4.3.2 If the individual has not been authorized for unescorted access to Category 1 or Category 2 quantities of radioactive material, safeguards information, or safeguards information modified handling, the licensee must complete a background investigation to determine the individual's trustworthiness and reliability. A trustworthiness and reliability determination shall be conducted by the reviewing official and shall include the background investigation elements contained in RHA 12.6.1.2 through 12.6.1.7.

12.12.4.4 Licensees need not subject the following individuals to the background investigation elements for protection of information:

12.12.4.4.1 The categories of individuals listed in RHA 12.8.1.1 through 12.8.1.13; or

12.12.4.4.2 Security service provider employees, provided written verification that the employee has been determined to be trustworthy and reliable, by the required background investigation in RHA 12.6.1.2 through 12.6.1.7, has been provided by the security service provider.

12.12.4.5 The licensee shall document the basis for concluding that an individual is trustworthy and reliable and should be granted access to the security plan or implementing procedures.

12.12.4.6 Licensees shall maintain a list of persons currently approved for access to the security plan or implementing procedures. When a licensee determines that a person no longer needs access to the security plan or implementing procedures or no longer meets the access authorization requirements for access to the information, the licensee shall remove the person from the approved list as soon as possible, but no later than 7 working days, and take prompt measures to ensure that the individual is unable to obtain the security plan or implementing procedures.

12.12.4.7 When not in use, the licensee shall store its security plan and implementing procedures in a manner to prevent unauthorized access. Information stored in nonremovable electronic form must be password protected.

12.12.4.8 The licensee shall retain as a record for 3 years after the document is no longer needed:

12.12.4.8.1 A copy of the information protection procedures; and

12.12.4.8.2 The list of individuals approved for access to the security plan or implementing procedures.

12.12.4.9 Licensees that possess safeguards information or safeguards information modified handling are subject to the requirements of 10 CFR 73.21, and shall protect any safeguards information or safeguards information modified handling in accordance with the requirements of that section.

RHA 12.13 LLEA coordination

12.13.1 A licensee subject to Subpart C shall coordinate, to the extent practicable, with an LLEA for responding to threats to the licensee's facility, including any necessary armed response. The information provided to the LLEA must include:

12.13.1.1 A description of the facilities and the Category 1 and Category 2 quantities of radioactive materials along with a description of the licensee's security measures that have been implemented to comply with Subpart C; and

12.13.1.2 A notification that the licensee will request a timely armed response by the LLEA to any actual or attempted theft, sabotage, or diversion of Category 1 or Category 2 quantities of material.

12.13.2 The licensee shall notify the Department within 3 business days if:

12.13.2.1 The LLEA has not responded to the request for coordination within 60 days of the coordination request; or

12.13.2.2 The LLEA notifies the licensee that the LLEA does not plan to participate in coordination activities.

12.13.3 The licensee shall document its efforts to coordinate with the LLEA. The documentation must be kept for 3 years.

12.13.4 The licensee shall coordinate with the LLEA at least every 12 months, or when changes to the facility design or operation adversely affect the potential vulnerability of the licensee's material to theft, sabotage, or diversion.

RHA 12.14 Security zones

12.14.1 Licensees shall ensure that all aggregated Category 1 and Category 2 quantities of radioactive material are used or stored within licensee established security zones. Security zones may be permanent or temporary.

12.14.2 Temporary security zones must be established as necessary to meet the licensee's transitory or intermittent business activities, such as periods of maintenance, source delivery, and source replacement.

12.14.3 Security zones must, at a minimum, allow unescorted access only to approved individuals through:

12.14.3.1 Isolation of Category 1 and Category 2 quantities of radioactive materials by the use of continuous physical barriers that allow access to the security zone only through established access control points. A physical barrier is a natural or man-made structure or formation sufficient for the isolation of the Category 1 or Category 2 quantities of radioactive material within a security zone; or

12.14.3.2 Direct control of the security zone by approved individuals at all times; or

12.14.3.3 A combination of continuous physical barriers and direct control.

12.14.4 For Category 1 quantities of radioactive material during periods of maintenance, source receipt, preparation for shipment, installation, or source removal or exchange, the licensee shall, at a minimum, provide sufficient individuals approved for unescorted access to maintain continuous surveillance of sources in temporary security zones and in any security zone in which physical barriers or intrusion detection systems have been disabled to allow such activities.

12.14.5 Individuals not approved for unescorted access to Category 1 or Category 2 quantities of radioactive material must be escorted by an approved individual when in a security zone.

RHA 12.15 Monitoring, detection, and assessment

12.15.1 Monitoring and detection.

12.15.1.1 Licensees shall establish and maintain the capability to continuously monitor and detect without delay all unauthorized entries into its security zones. Licensees shall provide the means to maintain continuous monitoring and detection capability in the event of a loss of the primary power source, or provide for an alarm and response in the event of a loss of this capability to continuously monitor and detect unauthorized entries.

12.15.1.2 Monitoring and detection must be performed by:

12.15.1.2.1 A monitored intrusion detection system that is linked to an onsite or offsite central monitoring facility; or

12.15.1.2.2 Electronic devices for intrusion detection alarms that will alert nearby facility personnel; or

12.15.1.2.3 A monitored video surveillance system; or

12.15.1.2.4 Direct visual surveillance by approved individuals located within the security zone; or

12.15.1.2.5 Direct visual surveillance by a licensee designated individual located outside the security zone.

12.15.1.3 A licensee subject to Subpart C shall also have a means to detect unauthorized removal of the radioactive material from the security zone. This detection capability must provide:

12.15.1.3.1 For Category 1 quantities of radioactive material, immediate detection of any attempted unauthorized removal of the radioactive material from the security zone. Such immediate detection capability must be provided by:

12.15.1.3.1.1 Electronic sensors linked to an alarm; or

12.15.1.3.1.2 Continuous monitored video surveillance; or

12.15.1.3.1.3 Direct visual surveillance.

12.15.1.3.2 For Category 2 quantities of radioactive material, weekly verification through physical checks, tamper indicating devices, use, or other means to ensure that the radioactive material is present.

12.15.2 Assessment. Licensees shall immediately assess each actual or attempted unauthorized entry into the security zone to determine whether the unauthorized access was an actual or attempted theft, sabotage, or diversion.

12.15.3 Personnel communications and data transmission. For personnel and automated or electronic systems supporting the licensee's monitoring, detection, and assessment systems, licensees shall:

12.15.3.1 Maintain continuous capability for personnel communication and electronic data transmission and processing among site security systems; and

12.15.3.2 Provide an alternative communication capability for personnel, and an alternative data transmission and processing capability, in the event of a loss of the primary means of communication or data transmission and processing. Alternative communications and data transmission systems may not be subject to the same failure modes as the primary systems.

12.15.4 Response. Licensees shall immediately respond to any actual or attempted unauthorized access to the security zones, or actual or attempted theft, sabotage, or diversion of Category 1 or Category 2 quantities of radioactive material at licensee facilities or temporary job sites. For any unauthorized access involving an actual or attempted theft, sabotage, or diversion of Category 1 or Category 2 quantities of radioactive material, the licensee's response shall include requesting, without delay, an armed response from the LLEA.

RHA 12.16 Maintenance and testing

12.16.1 Each licensee subject to Subpart C shall implement a maintenance and testing program to ensure that intrusion alarms, associated communication systems, and other physical components of the systems used to secure or detect unauthorized access to radioactive material are maintained in operable condition and are capable of performing their intended function when needed. The equipment relied on to meet the security requirements of this part must be inspected and tested for operability and performance at the manufacturer's suggested frequency. If there is no suggested manufacturer's suggested frequency, the testing must be performed at least annually, not to exceed 12 months.

12.16.2 The licensee shall maintain records on the maintenance and testing activities for 3 years.

RHA 12.17 Requirements for mobile devices

Each licensee that possesses mobile devices containing Category 1 or Category 2 quantities of radioactive material must:

12.17.1 Have two independent physical controls that form tangible barriers to secure the material from unauthorized removal when the device is not under direct control and constant surveillance by the licensee; and

12.17.2 For devices in or on a vehicle or trailer, unless the health and safety requirements for a site prohibit the disabling of the vehicle, the licensee shall utilize a method to disable the vehicle or trailer when not under direct control and constant surveillance by the licensee. Licensees shall not rely on the removal of an ignition key to meet this requirement.

RHA 12.18 Security program review

12.18.1 Each licensee shall be responsible for the continuing effectiveness of the security program. Each licensee shall ensure that the security program is reviewed to confirm compliance with the requirements of Subpart C and that comprehensive actions are taken to correct any noncompliance that is identified. The review must include the radioactive material security program content and implementation. Each licensee shall periodically (at least annually) review the security program content and implementation.

12.18.2 The results of the review, along with any recommendations, must be documented. Each review report must identify conditions that are adverse to the proper performance of the security program, the cause of the condition(s), and, when appropriate, recommend corrective actions, and corrective actions

taken. The licensee shall review the findings and take any additional corrective actions necessary to preclude repetition of the condition, including reassessment of the deficient areas where indicated.

12.18.3 The licensee shall maintain the review documentation for 3 years.

RHA 12.19 Reporting of events

12.19.1 The licensee shall immediately notify the LLEA after determining that an unauthorized entry resulted in an actual or attempted theft, sabotage, or diversion of a Category 1 or Category 2 quantity of radioactive material. As soon as possible after initiating a response, but not at the expense of causing delay or interfering with the LLEA response to the event, the licensee shall notify the Department. In no case shall the notification to the Department be later than 4 hours after the discovery of any attempted or actual theft, sabotage, or diversion.

12.19.2 The licensee shall assess any suspicious activity related to possible theft, sabotage, or diversion of Category 1 or Category 2 quantities of radioactive material and notify the LLEA as appropriate. As soon as possible but not later than 4 hours after notifying the LLEA, the licensee shall notify the Department.

12.19.3 The initial telephonic notification required by RHA 12.19.1 must be followed within a period of 30 days by a written report submitted to the Department. The report must include sufficient information for Department analysis and evaluation, including identification of any necessary corrective actions to prevent future instances.

Subpart D --- Physical Protection in Transit

RHA 12.20 Additional requirements for transfer of Category 1 and Category 2 quantities of radioactive material

A licensee transferring a Category 1 or Category 2 quantity of radioactive material to a licensee of the Department shall meet the license verification provisions listed below instead of those listed in RHA 2.18.4:

12.20.1 Any licensee transferring Category 1 quantities of radioactive material to a licensee the Department, prior to conducting such transfer, shall verify with the NRC's license verification system or the license issuing authority that the transferee's license authorizes the receipt of the type, form, and quantity of radioactive material to be transferred and that the licensee is authorized to receive radioactive material at the location requested for delivery. If the verification is conducted by contacting the license issuing authority, the transferor shall document the verification. For transfers within the same organization, the licensee does not need to verify the transfer.

12.20.2 Any licensee transferring Category 2 quantities of radioactive material to a licensee of the Department, prior to conducting such transfer, shall verify with the NRC's license verification system or the license issuing authority that the transferee's license authorizes the receipt of the type, form, and quantity of radioactive material to be transferred. If the verification is conducted by contacting the license issuing authority, the transferor shall document the verification. For transfers within the same organization, the licensee does not need to verify the transfer.

12.20.3 In an emergency where the licensee cannot reach the license issuing authority and the license verification system is nonfunctional, the licensee may accept a written certification by the transferee that it is authorized by license to receive the type, form, and quantity of radioactive material to be transferred. The certification must include the license number, current revision number, issuing agency, expiration

date, and for a Category 1 shipment the authorized address. The licensee shall keep a copy of the certification. The certification must be confirmed by use of the NRC's license verification system or by contacting the license issuing authority by the end of the next business day.

12.20.4 The transferor shall keep a copy of the verification documentation as a record for 3 years.

RHA 12.21 Applicability of physical protection of Category 1 and Category 2 quantities of radioactive material during transit.

The shipping licensee shall be responsible for meeting the requirements of Subpart D unless the receiving licensee has agreed in writing to arrange for the in-transit physical protection required under Subpart D.

RHA 12.22 Preplanning and coordination of shipment of Category 1 or Category 2 quantities of radioactive material

12.22.1 Each licensee that plans to transport, or deliver to a carrier for transport, licensed material that is a Category 1 quantity of radioactive material outside the confines of the licensee's facility or other place of use or storage shall:

12.22.1.1 Preplan and coordinate shipment arrival and departure times with the receiving licensee;

12.22.1.2 Preplan and coordinate shipment information with the governor or the governor's designee of any State through which the shipment will pass to:

12.22.1.2.1 Discuss the State's intention to provide law enforcement escorts; and

12.22.1.2.2 Identify safe havens; and

12.22.1.3 Document the preplanning and coordination activities.

12.22.2 Each licensee that plans to transport, or deliver to a carrier for transport, licensed material that is a Category 2 quantity of radioactive material outside the confines of the licensee's facility or other place of use or storage shall coordinate the shipment no-later-than arrival time and the expected shipment arrival with the receiving licensee. The licensee shall document the coordination activities.

12.22.3 Each licensee who receives a shipment of a Category 2 quantity of radioactive material shall confirm receipt of the shipment with the originator. If the shipment has not arrived by the no-later-than arrival time, the receiving licensee shall notify the originator.

12.22.4 Each licensee, who transports or plans to transport a shipment of a Category 2 quantity of radioactive material, and determines that the shipment will arrive after the no-later than arrival time provided pursuant to RHA 12.22.2, shall promptly notify the receiving licensee of the new no-later-than arrival time.

12.22.5 The licensee shall retain a copy of the documentation for preplanning and coordination and any revision thereof, as a record for 3 years.

RHA 12.23 Advance notification of shipment of Category 1 quantities of radioactive material.

As specified in RHA 12.23.1 and 12.23.2, each licensee shall provide advance notification to the Department and the governor of a State, or the governor's designee, of the shipment of licensed material

in a Category 1 quantity, through or across the boundary of the State, before the transport, or delivery to a carrier for transport of the licensed material outside the confines of the licensee's facility or other place of use or storage.

12.23.1 Procedures for submitting advance notification.

12.23.1.1 The notification must be made to the Department and to the office of each appropriate governor or governor's designee. The contact information, including telephone and mailing addresses, of governors and governors' designees, is available on the NRC's Web site at <http://nrc-stp.ornl.gov/special/designee.pdf>. A list of the contact information is also available upon request from the Director, Division of Intergovernmental Liaison and Rulemaking, Office of Federal and State Materials and Environmental Management Programs, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001. Notifications to the NRC must be to the NRC's Director, Division of Security Policy, Office of Nuclear Security and Incident Response, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001. The notification to the NRC may be made by email to RAMQC@nrc.gov or by fax to 301-816-5151.

12.23.1.2 A notification delivered by mail must be postmarked at least 7 days before transport of the shipment commences at the shipping facility.

12.23.1.3 A notification delivered by any means other than mail must reach the Department at least 4 days before the transport of the shipment commences and must reach the office of the governor or the governor's designee at least 4 days before transport of a shipment within or through the State.

12.23.2 Information to be furnished in advance notification of shipment.

Each advance notification of shipment of Category 1 quantities of radioactive material must contain the following information, if available at the time of notification:

12.23.2.1 The name, address, and telephone number of the shipper, carrier, and receiver of the Category 1 radioactive material;

12.23.2.2 The license numbers of the shipper and receiver;

12.23.2.3 A description of the radioactive material contained in the shipment, including the radionuclides and quantity;

12.23.2.4 The point of origin of the shipment and the estimated time and date that shipment will commence;

12.23.2.5 The estimated time and date that the shipment is expected to enter each State along the route;

12.23.2.6 The estimated time and date of arrival of the shipment at the destination; and

12.23.2.7 A point of contact, with a telephone number, for current shipment information.

12.23.3 Revision notice.

12.23.3.1 The licensee shall provide any information not previously available at the time of the initial notification, as soon as the information becomes available but not later than commencement of the shipment, to the governor of the State or the governor's designee.

12.23.3.2 A licensee shall promptly notify the governor of the State or the governor's designee of any changes to the information provided in accordance with RHA 12.23.2 and 12.23.3.1 of this section.

12.23.4 Cancellation notice. Each licensee who cancels a shipment for which advance notification has been sent shall send a cancellation notice to the governor of each State or to the governor's designee previously. The licensee shall send the cancellation notice before the shipment would have commenced or as soon thereafter as possible. The licensee shall state in the notice that it is a cancellation and identify the advance notification that is being cancelled.

12.23.5 Records. The licensee shall retain a copy of the advance notification and any revision and cancellation notices as a record for 3 years.

12.23.6 Protection of information. State officials, State employees, and other individuals, whether or not licensees of the Department, who receive schedule information of the kind specified in RHA 12.23.2 shall protect that information against unauthorized disclosure as specified in 10 CFR 73.21.

RHA 12.24 Requirements for physical protection of Category 1 and Category 2 quantities of radioactive material during shipment.

12.24.1 Shipments by road.

12.24.1.1 Each licensee who transports, or delivers to a carrier for transport, in a single shipment, a Category 1 quantity of radioactive material shall:

12.24.1.1.1 Ensure that movement control centers are established that maintain position information from a remote location. These control centers must monitor shipments 24 hours a day, 7 days a week, and have the ability to communicate immediately, in an emergency, with the appropriate law enforcement agencies.

12.24.1.1.2 Ensure that redundant communications are established that allow the transport to contact the escort vehicle (when used) and movement control center at all times. Redundant communications may not be subject to the same interference factors as the primary communication.

12.24.1.1.3 Ensure that shipments are continuously and actively monitored by a telemetric position monitoring system or an alternative tracking system reporting to a movement control center. A movement control center must provide positive confirmation of the location, status, and control over the shipment. The movement control center must be prepared to promptly implement preplanned procedures in response to deviations from the authorized route or a notification of actual, attempted, or suspicious activities related to the theft, loss, or diversion of a shipment. These procedures will include, but not be limited to, the identification of and contact information for the appropriate LLEA along the shipment route.

12.24.1.1.4 Provide an individual to accompany the driver for those highway shipments with a driving time period greater than the maximum number of allowable hours of service in a 24-hour duty day as established by the Department of Transportation Federal Motor Carrier Safety Administration. The accompanying individual may be another driver.

12.24.1.1.5 Develop written normal and contingency procedures to address:

12.24.1.1.5.1 Notifications to the communication center and law enforcement agencies;

12.24.1.1.5.2 Communication protocols. Communication protocols must include a strategy for the use of authentication codes and duress codes and provisions for refueling or other stops, detours, and locations where communication is expected to be temporarily lost;

12.24.1.1.5.3 Loss of communications; and

12.24.1.1.5.4 Responses to an actual or attempted theft or diversion of a shipment.

12.24.1.1.6 Each licensee who makes arrangements for the shipment of Category 1 quantities of radioactive material shall ensure that drivers, accompanying personnel, and movement control center personnel have access to the normal and contingency procedures.

12.24.1.2 Each licensee that transports Category 2 quantities of radioactive material shall maintain constant control and/or surveillance during transit and have the capability for immediate communication to summon appropriate response or assistance.

12.24.1.3 Each licensee who delivers to a carrier for transport, in a single shipment, a Category 2 quantity of radioactive material shall:

12.24.1.3.1 Use carriers that have established package tracking systems. An established package tracking system is a documented, proven, and reliable system routinely used to transport objects of value. In order for a package tracking system to maintain constant control and/or surveillance, the package tracking system must allow the shipper or transporter to identify when anywhere the package was last and when it should arrive at the next point of control.

12.24.1.3.2 Use carriers that maintain constant control and/or surveillance during transit and have the capability for immediate communication to summon appropriate response or assistance; and

12.24.1.3.3 Use carriers that have established tracking systems that require an authorized signature prior to releasing the package for delivery or return.

12.24.2 Shipments by rail.

12.24.2.1 Each licensee who transports, or delivers to a carrier for transport, in a single shipment, a Category 1 quantity of radioactive material shall:

12.24.2.1.1 Ensure that rail shipments are monitored by a telemetric position monitoring system or an alternative tracking system reporting to the licensee, third-party, or railroad communications center. The communications center shall provide positive confirmation of the location of the shipment and its status. The communications center shall implement preplanned procedures in response to deviations from the authorized route or to a notification of actual, attempted, or suspicious activities related to the theft or diversion of a shipment. These procedures will include, but not be limited to, the identification of and contact information for the appropriate LLEA along the shipment route.

12.24.2.1.2 Ensure that periodic reports to the communications center are made at preset intervals.

12.24.2.2 Each licensee who transports, or delivers to a carrier for transport, in a single shipment, a Category 2 quantity of radioactive material shall:

12.24.2.2.1 Use carriers that have established package tracking systems. An established package tracking system is a documented, proven, and reliable system routinely used to transport objects of value. In order for a package tracking system to maintain constant control and/or surveillance, the package tracking system must allow the shipper or transporter to identify when and where the package was last and when it should arrive at the next point of control.

12.24.2.2.2 Use carriers that maintain constant control and/or surveillance during transit and have the capability for immediate communication to summon appropriate response or assistance; and

12.24.2.2.3 Use carriers that have established tracking systems that require an authorized signature prior to releasing the package for delivery or return.

12.24.3 Investigations. Each licensee who makes arrangements for the shipment of Category 1 quantities of radioactive material shall immediately conduct an investigation upon the discovery that a Category 1 shipment is lost or missing. Each licensee who makes arrangements for the shipment of Category 2 quantities of radioactive material shall immediately conduct an investigation, in coordination with the receiving licensee, of any shipment that has not arrived by the designated no-later-than arrival time.

RHA 12.25 Reporting of events.

12.25.1 The shipping licensee shall notify the appropriate LLEA and the Department within 1 hour of its determination that a shipment of Category 1 quantities of radioactive material is lost or missing. The appropriate LLEA would be the law enforcement agency in the area of the shipment's last confirmed location. During the investigation required by RHA 12.24.3, the shipping licensee will provide agreed upon updates to the Department on the status of the investigation.

12.25.2 The shipping licensee shall notify the Department within 4 hours of its determination that a shipment of Category 2 quantities of radioactive material is lost or missing. If, after 24 hours of its determination that the shipment is lost or missing, the radioactive material has not been located and secured, the licensee shall immediately notify the Department.

12.25.3 The shipping licensee shall notify the designated LLEA along the shipment route as soon as possible upon discovery of any actual or attempted theft or diversion of a shipment or suspicious activities related to the theft or diversion of a shipment of a Category 1 quantity of radioactive material. As soon as possible after notifying the LLEA, the licensee shall notify the Department upon discovery of any actual or attempted theft or diversion of a shipment, or any suspicious activity related to the shipment of Category 1 radioactive material.

12.25.4 The shipping licensee shall notify the Department as soon as possible upon discovery of any actual or attempted theft or diversion of a shipment, or any suspicious activity related to the shipment, of a Category 2 quantity of radioactive material.

12.25.5 The shipping licensee shall notify the Department and the LLEA as soon as possible upon recovery of any lost or missing Category 1 quantities of radioactive material.

12.25.6 The shipping licensee shall notify the Department as soon as possible upon recovery of any lost or missing Category 2 quantities of radioactive material.

12.25.7 The initial telephonic notification required by paragraphs RHA 12.25.1 through 12.25.4 must be followed within a period of 30 days by a written report submitted to the Department. A written report is

not required for notifications on suspicious activities required by RHA 12.25.3 and 12.25.4. The report must set forth the following information:

12.25.7.1 A description of the licensed material involved, including kind, quantity, and chemical and physical form;

12.25.7.2 A description of the circumstances under which the loss or theft occurred;

12.25.7.3 A statement of disposition, or probable disposition, of the licensed material involved;

12.25.7.4 Actions that have been taken, or will be taken, to recover the material; and

12.25.7.5 Procedures or measures that have been, or will be, adopted to ensure against a recurrence of the loss or theft of licensed material.

12.25.7.6 Subsequent to filing the written report, the licensee shall also report any additional substantive information on the loss or theft within 30 days after the licensee learns of such information.

Subpart E --- Records

RHA 12.26 Form of records

Each record required by this part must be legible throughout the retention period specified by each Department regulation. The record may be the original or a reproduced copy or a microform, provided that the copy or microform is authenticated by authorized personnel and that the microform is capable of producing a clear copy throughout the required retention period. The record may also be stored in electronic media with the capability for producing legible, accurate, and complete records during the required retention period. Records such as letters, drawings, and specifications, must include all pertinent information such as stamps, initials, and signatures. The licensee shall maintain adequate safeguards against tampering with and loss of records.

RHA 12.27 Record retention

Licensees shall maintain the records that are required by the regulations in this part for the period specified by the appropriate regulation. If a retention period is not otherwise specified, these records must be retained until the Department terminates the facility's license. All records related to this part may be destroyed upon Department termination of the facility license.

Appendix A—Category 1 and Category 2 Radioactive Materials

Table 1—Category 1 and Category 2 Threshold

Radioactive material	Category 1(TBq)	Category 1 (Ci)	Category 2 (TBq)	Category 2 (Ci)
Americium-241	60	1,620	0.6	16.2
Americium-241/Be	60	1,620	0.6	16.2
Californium-252	20	540	0.2	5.40
Cobalt-60	30	810	0.3	8.10
Curium-244	50	1,350	0.5	13.5
Cesium-137	100	2,700	1	27.0
Gadolinium-153	1,000	27,000	10	270

Iridium-192	80	2,160	0.8	21.6
Plutonium-238	60	1,620	0.6	16.2
Plutonium-239/Be	60	1,620	0.6	16.2
Promethium-147	40,000	1,080,000	400	10,800
Radium-226	40	1,080	0.4	10.8
Selenium-75	200	5,400	2	54.0
Strontium-90	1,000	27,000	10	270
Thulium-170	20,000	540,000	200	5,400
Ytterbium-169	300	8,100	3	81.0

**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.

Note: Calculations Concerning Multiple Sources or Multiple Radionuclides

The "sum of fractions" methodology for evaluating combinations of multiple sources or multiple radionuclides is to be used in determining whether a location meets or exceeds the threshold and is thus subject to the requirements of this part.

I. If multiple sources of the same radionuclide and/or multiple radionuclides are aggregated at a location, the sum of the ratios of the total activity of each of the radionuclides must be determined to verify whether the activity at the location is less than the Category 1 or Category 2 thresholds of Table 1, as appropriate. If the calculated sum of the ratios, using the equation below, is greater than or equal to 1.0, then the applicable requirements of this part apply.

II. First determine the total activity for each radionuclide from Table 1. This is done by adding the activity of each individual source, material in any device, and any loose or bulk material that contains the radionuclide. Then use the equation below to calculate the sum of the ratios by inserting the total activity of the applicable radionuclides from Table 1 in the numerator of the equation and the corresponding threshold activity from Table 1 in the denominator of the equation. Calculations must be performed in metric values (i.e., TBq) and the numerator and denominator values must be in the same units.

- R₁ = total activity for radionuclide 1
- R₂ = total activity for radionuclide 2
- R_n = total activity for radionuclide n
- AR₁ = activity threshold for radionuclide 1
- AR₂ = activity threshold for radionuclide 2
- AR_n = activity threshold for radionuclide n

$$\sum_1^n \left[\frac{R_1}{AR_1} + \frac{R_2}{AR_2} + \frac{R_n}{AR_n} \right] \geq 1.0$$