

# INDIAN AFFAIRS MANUAL

- 1.1 Purpose.** This chapter describes the minimum Safety and Risk Management Program (SRMP) requirements for protecting Indian Affairs (IA) employees and the public from adverse exposure to radiation sources.
- 1.2 Scope.** This policy applies to all offices under the authority of the Assistant Secretary - Indian Affairs (AS-IA), including the Bureau of Indian Affairs (BIA) and the Bureau of Indian Education (BIE).
- 1.3 Policy.** It is the policy of IA to comply with all applicable federal laws, regulations, and Department of the Interior (DOI) policies and procedures regarding radiation safety, and to ensure that resources are available to facilitate compliance.
- 1.4 Authority.**
- A. Statutes and Regulations.**
- 1) P.L. 91-596, Sec. 19. Federal Agency Safety Programs and Responsibilities, Occupational Safety and Health Act of 1970
  - 2) 10 CFR, Nuclear Regulatory Commission (NRC) Regulations
  - 3) 29 CFR 1910, Occupational Safety and Health Standards
  - 4) 29 CFR 1926, Safety and Health Regulations for Construction
  - 5) 29 CFR 1960, Basic Program Elements for Federal Employee Occupational Safety and Health Programs and Related Matters
  - 6) 41 CFR 102-80, Safety and Environmental Management
  - 7) 49 CFR, Transportation
- B. Guidance.**
- 1) 485 Departmental Manual (DM) 21: Radiation Safety
  - 2) Executive Order (EO) 12196: Occupational Safety and Health Programs for Federal Employees, 1980
  - 3) U.S. Nuclear Regulatory Commission Regulation (NUREG)-1556, Volume 11 Rev.1, Section 8.7, Item 7: Individual(s) Responsible for Radiation Safety Program and Their Training and Experience

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- 4) Institute of Electrical and Electronics Engineers (IEEE) C95.3-2021, Recommended Practice for Measurements and Computations of Electric, Magnetic, and Electromagnetic Fields with Respect to Human Exposure to Such Fields, 0 Hz to 300 GHz
- 5) American National Standards Institute (ANSI) Z136.1, Safe Use of Lasers

### 1.5 Responsibilities.

- A. **Director, Office of Facilities, Property, and Safety Management (OFPSM)** is the IA-Designated Safety and Health Official (IA-DASHO) and is responsible for managing and administering the IA SRMP. The Director reports to the IA Deputy Assistance Secretary – Management (DAS-M) and is responsible for oversight, policy, and procedures governing IA facilities management and construction, property, safety, and risk management, including the administration and management of the Radiation Safety Program.
- B. **Chief, Division of Safety and Risk Management (DSRM), OFPSM** is responsible for:
  - 1) advising and supporting the IA-DASHO in carrying out Radiation Safety Program responsibilities; and
  - 2) providing technical assistance and guidance to management in carrying out Radiation Safety Program requirements.
- C. **Regional Director (RD)** is responsible for:
  - 1) establishing a Radiation Safety Program;
  - 2) ensuring compliance with statutory and regulatory policy and Radiation Safety Program requirements;
  - 3) providing the resources and staff support necessary for the successful implementation of a Radiation Safety Program;
  - 4) appointing and assigning responsibilities to a qualified Radiation Safety Officer at each applicable facility; and
  - 5) providing required reports associated with the program.
- D. **BIE Deputy Bureau Director (DBD), School Operations Division** is responsible for:
  - 1) establishing a Radiation Safety Program;

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- 2) ensuring compliance with statutory and regulatory policy, and Radiation Safety Program requirements;
- 3) providing the resources and staff support necessary for the successful implementation of a Radiation Safety Program;
- 4) appointing and assigning responsibilities to a qualified Radiation Safety Officer (RSO) at each applicable facility; and
- 5) providing required reports associated with the program.

**E. Managers/Supervisors** are responsible for:

- 1) providing support at operating locations to ensure that identified controls are implemented and maintained, and work environments are safe; and
- 2) ensuring that each employee under their supervision who is an operator of a portable nuclear gauge is fully qualified to operate such equipment under the requirements of this policy, and that only such qualified individuals operate a portable nuclear gauge in the performance of their duties.

**F. RSO** is responsible for administering the Radiation Safety Program at their level, recommending or approving corrective actions, identifying radiation safety problems, initiating action(s), and ensuring regulatory compliance.

**G. Laser Safety Officer (LSO)** is responsible for developing a Laser Safety Program, reviewing/approving standard operating procedures for laser use, overseeing training for users, and implementing control measures to protect users (training, signage, barriers, etc.). LSOs are required for facilities that use Class IIIb or Class IV lasers. The LSO can be the same person as the RSO, or can be a separate duty that covers laser safety for the RSO.

### 1.6 Definitions.

**A. As Low As Reasonably Achievable (ALARA)** is the means to make every reasonable effort to maintain exposures to ionizing radiation (IR) as far below the dose limits as practical, consistent with the purpose for which the licensed activity is undertaken, taking into account the state of technology, the economics of improvements in relation to state of technology, the economics of improvements in relation to benefits to the public health and safety, and other societal and socioeconomic considerations, and in relation to utilization of nuclear energy and licensed materials in the public interest.

**B. Bill of Lading (BL or BOL)** is a legal document issued by a carrier to a shipper that details the type, quantity, and destination of the goods being carried. It also serves as

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a shipment receipt. It must be filled out in accordance with 49 CFR 172.200-204.

- C. General Licensed Materials** are those materials subject to the NRC regulations listed in 10 CFR 31.5. General licensed materials are devices containing radioactive material and are typically used to detect, measure, gauge, or control the thickness, density, level, or chemical composition of various items. Examples of such devices are gas chromatographs (detector cells), density gauges, nuclear gauges, fill-level gauges, and static elimination devices.
- D. Ionizing Radiation (IR)** is the most energetic form of radiation, capable of removing electrons from atoms (ionization) and damaging the deoxyribonucleic acid (DNA) within living cells. X-rays, gamma rays, and alpha & beta particles are examples of IR.
- E. Laser(s)** is a device that converts incident electromagnetic radiation of mixed frequencies to discrete frequencies of highly amplified and coherent ultraviolet, visible, or infrared radiation.
- F. Naturally Occurring Radioactive Materials (NORM)** are naturally occurring uranium and thorium and their decay products present in air, soil, rocks, and water. NORM is a potential health concern when concentrations and radio activities are above typical environmental levels or where anthropogenic processes such as oil and gas production, mining, mineral processing, water treatment, etc. may concentrate uranium and thorium above typical environmental levels.
- G. Non-ionizing Radiation (NIR)** is radiation having enough energy to excite atoms (make them move more rapidly), but not enough to ionize them (alter them physically). Examples of NIR include ultraviolet radiation (i.e., black lights, welding, sunlight), lasers, infrared radiation (i.e., furnaces, heat lamps), microwaves, radio waves, and extremely low frequency radiation.
- H. Qualified individual** is a person licensed in the types of materials to be used; qualified by training and experience in radiation protection as to protect health and minimize danger to life or property; and must have established administrative controls and provisions relating to organization and management, procedures, record keeping, material control, accounting, and management review that are necessary to assure safe operations.
- I. Radon** is a naturally occurring radioactive gas found in soils, rock, and water throughout the United States. It has numerous different isotopes, but radon-220 and -222 are the most common. Radon can cause lung cancer.

- J. Restricted Area(s)** is an area where access is controlled to protect an individual from exposure to radiation or radioactive materials.
  
- K. X-rays** are penetrating electromagnetic radiation (photon) having a wavelength that is much shorter than that of visible light. These rays are usually produced by excitation of the electron field around certain nuclei.

### **1.7 Standards, Requirements, and Procedures.**

Because of the long-term and systemic health effects caused by radiation, federal safety regulations require careful storage, handling, transporting, use, and labeling of radiation sources. The following sections outline these requirements to safeguard employees.

#### **A. Requirements for IR**

When employees are exposed to potential IR hazards, the following safety precautions must be followed:

- 1) Affected locations must protect employees and the public against exposures to IR, and must comply with the appropriate standards and regulations.
  
- 2) Affected locations should make every reasonable effort to maintain exposures to employees and to the public ALARA, and at no time should exceed the applicable limits set by 10 CFR 20, 29 CFR 1910.1096, and 29 CFR 1926.53.
  
- 3) Locations conducting activities or possessing radioactive materials under a license issued by the NRC will conduct activities and handle materials in accordance with their license requirements and applicable NRC regulations. These include General Licensed Materials.
  
- 4) Equipment containing radioactive sources should only be operated by trained employees who are listed on the license. The RSO can designate additional operators in writing once they have met the license training requirements.
  
- 5) Locations possessing or using radiation sources not requiring NRC licensing must implement a program to meet the requirements of 29 CFR 1910.1096.
  
- 6) Each affected location will develop, document, and implement a Radiation Safety Program that governs the use and exposure to IR. Radiation Safety Programs must include, at a minimum, the following elements:

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- Coordinating through the regional Property and Acquisitions offices, and establishing a process that provides accountability and control of IR sources through procurement, use, storage, final disposition, or disposal. This includes an annual physical inventory of radiation sources, or more often when specified by governing regulations and established procedures.
- Determining functional responsibilities for program implementation and oversight. This determination will be done by the RD or BIE DBD, School Operations Division.
- Maintaining airborne concentrations and dose below the applicable limits as specified in the governing standard or regulation.
- Conducting surveys and monitoring to determine the magnitude and extent of radiation levels; concentrations, quantities of radioactive material, and potential radiological hazards; and, where applicable, conducting leak tests of sealed sources, x-ray producing devices, and other radiation producing equipment housing radioactive materials.
- Evaluating employee and public exposure to IR where required or as applicable.
- Posting “restricted area” or other appropriate radiation caution or danger signage (i.e., 3-bladed, magenta or purple and yellow signage or other accepted color schemata); and providing the physical means to prevent unauthorized access to such areas. Barriers should be erected, or signs displayed while the source is in use. The operator should maintain constant surveillance over the device and always be aware of who is in the vicinity while in operation.  
Additionally:
  - Restricted areas will be posted with a sign or signs with the radiation caution symbol and the words: CAUTION RADIATION AREA.
  - IR source container labels will have the radiation caution symbol, identity of contents, and be labeled: CAUTION RADIOACTIVE MATERIAL. Each container of radioactive material prepared for shipment will also have the letters “RQ,” if required.
  - IR source storage areas will have a sign with the radiation caution symbol and the words: CAUTION RADIOACTIVE MATERIAL at the entrance.
    - The storage area will also have posted the NRC Notice to Employees. This notice details the location of the license, regulations, and operating procedures applicable to work under the license, and the Occupational

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Safety and Health Administration (OSHA) poster: “Your Rights Under the Energy Reorganization Act.”

- The radiation levels in unrestricted areas adjacent to restricted areas will be monitored to prevent employee and public exposure exceeding the allowable limits. Employees and members of the public will not be exposed to more than 100 millirems (mrem) per year, or be allowed to receive a dose of more than two mrem in any one hour.
- Displaying the appropriate radiation caution or danger signage labels on containers in which radioactive materials are transported, stored, or used. Radon-producing devices must also display the manufacturer’s information (make, model and any pertinent warnings) on a visible label, and must display appropriate manufacturer’s labels on radiation producing devices.
- Establishing emergency and immediate evacuation procedures, as applicable.
- Ensuring that radioactive materials are transported (shipping and receiving) in accordance with the appropriate NRC and U.S. Department of Transportation (DOT) regulations; and conducting radiation surveys as needed on packages containing radioactive materials prior to accepting receipt within the regulated timeframe.
- Providing appropriate and effective training to employees who are potentially exposed to IR. Training will be provided at the time of initial assignment and repeated if there is a change in operational procedure or exposure. DOT training is required for employees involved in the transportation of radioactive materials at least once every three years.
- Ensuring that radioactive materials are properly secured and stored. All sealed sources must be leak tested on a regular basis to ensure that the radioactive material is secure in the source and that none has leaked out.
- Ensuring that radioactive waste is disposed of in accordance with applicable regulations.
- Making appropriate notification(s) and reporting radiation incidences and over exposures to the appropriate governing authority, where applicable.
- Maintaining records of, including but not limited to, surveys, exposure monitoring, training, public dose, leak testing, maintenance, audits, program review, and other program records.

- Notifying employees of exposures in accordance with applicable regulations or standards.
  - Establishing procedures to address post-exposure action.
  - Establishing a declared pregnant worker program that initiates appropriate protective actions against exposure to IR once a pregnancy is voluntarily declared in writing to management.
  - Conducting an annual program review, and assessing local program implementation and compliance annually.
  - Repairing, maintaining, and aligning X-ray producing devices, equipment housing General License Materials, and other IR producing and measuring equipment by a trained and qualified individual of the manufacturer, or an individual approved by the DSRM or its designee.
  - Ensuring a job hazard analysis for all IR sources is prepared, and maintaining a training log for all personnel using the IR sources.
- 7) IA will evaluate potential exposures to employees involved in handling and storing NORM and performing activities at sites where exposures are above background radiation levels (i.e., working in mines with radon or collecting samples from a NORM waste stream.) Applicable procedures and requirements will be implemented to control exposures in order to ensure exposures do not exceed limits in 29 CFR 1910.1096.

#### **B. Transporting IR Sources**

Whenever an IR source is being transported, the following guidelines must be followed:

- 1) No employee will package, load, unload, receive, or transport a radioactive source without being trained.
- 2) The radioactive source must be transported in an approved shipping container. The container must have appropriate shipping labels.
- 3) All shipments of radioactive material, except for those containing limited quantities or those of low specific activity, will have identifying warning labels affixed to the outsides of the shipping container. Specifically:



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- Three different labels, White-I, Yellow-II, or Yellow-III are used on packages containing radioactive material.
  - The United Nations hazard Class “7” should be displayed on labels of radioactive material.
  - Package labels specify the radioactive content and the quantity in curies.
- 4) The letters “RQ” must be added to the proper shipping name on the shipping documents and on the shipping package to denote a “reportable quantity” of hazardous material.
- 5) An overpack is an enclosure used by a single shipper to contain one or more packages to form one handling unit for convenience of handling and stowage. Overpacks will be used to reduce Yellow III packages to Yellow II before shipping by company vehicle.
- 6) The package must be locked or sealed to prevent the package from being opened during shipment. Additionally:
- The package must be braced when in the vehicle to prevent movement during shipment.
  - The package must be inspected before shipping to assess the integrity of the package, and the inspection results recorded on a Daily Use Log.
- 7) A BOL must accompany the driver of a vehicle transporting radioactive sources on a public highway. The BOL must have the following information:
- Name of shipper
  - Description of the shipment
  - Proper shipping name to include “RQ”
  - Material identification number
  - Hazard class
  - Type of package
  - Name and activity of each nuclide
  - Category of labeling
  - Transport index
  - Emergency response telephone number
  - Shipper’s certification (only for common carriers or carriers for hire)
  - Shipper signature

- 8) Emergency response information must accompany the shipment of a radioactive source. Additionally:
- The emergency response information must be in the transport vehicle and immediately accessible to the driver if there is an emergency.
  - A 24-hour emergency telephone number must be provided on the shipping paper. This number must be in continuous operation while the radioactive source is in transport. The personnel staffing the emergency number must be knowledgeable of the hazards and characteristics of the radioactive material being shipped and the appropriate emergency response.
  - In the case of an accident or theft, the appropriate regulatory agency must be notified as soon as practicable.
  - If an accident occurs while the material is being transported, the DOT must be notified.
  - It is the responsibility of the RSO to ensure that all necessary notifications are made.
- 9) A copy of the International Atomic Energy Agency Certificate of Competent Authority for each source must be kept on file at the site, school, or facility for at least one year after shipment.

### **C. Securing and Storing IR Sources**

Whenever a radioactive source is being secured or stored, the following guidelines must be followed:

- 1) IR sources will only be stored in storage areas listed on the license.
- 2) Only the RSO and authorized users should have access to storage areas for IR.
- 3) Employees using IR source instruments must sign them out on the Daily Use Log, which should be kept in the storage area. Instrument usage must also be recorded on the Utilization Log.
- 4) All IR sources in transport must be kept locked, with the key in the operator's possession. Additionally, all IR sources in transport must be braced to avoid movement and be secured to the vehicle to prevent theft or loss.

- 5) Exterior surfaces of the transport container must not exceed two milliroentgens per hour (mR/hr). If they do, a restricted area must be maintained until the level has been reduced to or below two mR/hr.
- 6) In the field, sources must not be left unattended. If the instruments are not in use, they must be secured in their cases and locked in the vehicle.
- 7) IR sources stored at a temporary jobsite location must either be secured to the assigned vehicle or locked in a designated secured area or container. Additionally:
  - These areas are to be accessible only to authorized users.
  - Sources will not be stored in motel rooms or taken into an occupied home.
  - When a source is stored in a vehicle overnight, the gauge is to be stored inside the vehicle.

#### **D. Requirements for NIR**

While health consequences of NIR are typically less severe than those of IR, there is often uncertainty in personal susceptibility and extent of exposure. Examples of health effects include: skin and eye damage from excessive ultraviolet radiation or visible light, heat sensation and pain from infrared radiation, and tissue damage from microwave or radiofrequency radiation. The following safety precautions must be followed for NIR:

- 1) As noted in section 1.5, RDs and BIE School Operations are responsible for establishing programs and controls that prevent NIR hazards, and for ensuring employee and public exposures are below recommended regulatory limits.
- 2) NIR is not specifically regulated in the OSHA general industry standard; however, the General Duty Clause may be used to enforce industry standards. The General Duty Clause is used only where there is no standard that applies to the particular hazard. Three basic concepts apply to NIR:
  - Time: The amount of radiation exposure increases and decreases with the time people spend near the source of radiation.
  - Distance: The farther away people are from a radiation source, the less their exposure. As a rule, as the distance doubles, the exposure factor decreases by four.

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- Shielding: The greater the shielding around a radiation source, the smaller the exposure.
- 3) Each affected location will implement a program that addresses the following at a minimum:
- Ensuring that potential NIR hazards are properly identified and that appropriate hazard controls are developed.
  - Using methods such as: warning signs, barriers, and lockout-tagout procedures to prevent accidental exposures to harmful quantities of NIR. The RF radiation warning symbol is a red isosceles triangle above an inverted black isosceles triangle separated and outlined by an aluminum color border. The words “Warning - Radio-Frequency Radiation Hazard” appear in the upper triangle.
  - Maintaining inventory of hazardous NIR areas, including all known hazardous electromagnetic and radiofrequency sources and Class IIIb and IV lasers.
  - Evaluating NIR radiation sources, and notifying affected employees of monitoring results and of NIR hazardous equipment and areas. Measurement procedures and techniques recommended in IEEE C95.3 may be used as basic guidance for evaluating radiofrequency/electromagnetic hazards.
  - Ensuring that all employees receive appropriate safety training commensurate with potential hazards from NIR sources they may encounter; preparing job hazard analysis for all NIR sources; and maintaining a training log for all personnel using the NIR sources.
  - Investigating all incidents related to actual or suspected NIR exposures. Investigations will address results of NIR measurements, including detailed descriptions of circumstances leading to the incident, and recommendations to prevent future reoccurrence.
  - Following guidelines in ANSI Z136.1 if lasers are used in the workplace. This includes establishing a laser safety committee and designating a LSO for Class IIIb and IV lasers. If uncertain about the class of laser, contact the manufacturer. Only a qualified expert will design, review, and test controls for access to a Class IIIb or IV laser. The LSO will design, or review for adequacy, all laser safety standard operating procedures for each such facility.

- Inspecting NIR sources at least annually and if modifications/repairs are made, performing a radiation survey.

#### **E. Requirements for Nuclear Devices (Gauges)**

Nuclear gauges are used by repair and construction personnel for measuring material thickness, density, or make-up, such as for road pavement. As the gauges use radioactive sources, they must be carefully handled to prevent radiation exposure to employees using them.

##### **1) Licensing.**

- A license for the specific source material to be obtained must be acquired from the NRC prior to the purchase of the nuclear device, and in coordination with the regional Property and Acquisitions offices.
- The agreements made in the application for the license must be followed.
- Use of an unlicensed nuclear device to perform IA work is strictly prohibited.

##### **2) Identification of a RSO.** A qualified individual will be responsible for the Radiation Safety Program.

##### **3) Handling and Storage.**

- Nuclear gauges must be stored away from occupied areas and secured against unauthorized removal.
- Handling of nuclear gauges must be in accordance with the manufacturer's instructions.

##### **4) Transportation.**

- A BOL (also referred to as shipping papers) must be filled out in accordance with 49 CFR 172.200-204.
- Shipping papers or BOL must accompany the nuclear gauge device in the transport vehicle and be within reach of the driver.
- An emergency response information document must be in the transport vehicle and immediately accessible to the driver or emergency personnel.

- Whenever the nuclear instrument is transported in a vehicle, it must be locked in the trunk of a car, locked in a van, or secured by a lock and chain in an open bed truck.
- The nuclear instrument must be in a Type A container with a copy of the Type A container certificate from the instrument manufacturer during transport.

## 5) **Public Dose.**

- Nuclear instrument users will ensure that licensed instruments are used, transported, and stored in such a way that members of the public are not over exposed.
  - Overexposure is defined as: more than 1 millisievert (1 mSv) [100 millirem (100 mrem)] in one year, or the dose in any unrestricted areas will not exceed 0.02 millisievert (mSv) [2 millirem (2 mrem)] in any one hour.
- Members of the public include: persons who live, work, or may be near locations where portable nuclear gauges are used or stored; and employees whose assigned duties do not include the use of licensed materials and who work in the vicinity where nuclear gauges are used or stored.

## 6) **Personal Monitoring and Recordkeeping.**

- All operators must be monitored for radiation exposure by personal monitoring equipment (i.e., film badges).
- Film badges should be worn by the operators to document exposure to IR, and to help detect problems with the equipment. Radiologic technologists, diagnostic radiographers, and medical radiation technologists who specialize in imaging human anatomy for diagnosis and treatment should wear a pocket dosimeter and rate alarm.
- Processing of personal monitoring equipment will be per the manufacturer's directions and be interpreted by a qualified laboratory employee.
- The instruments must be accounted for periodically. The instruments will be inventoried at least every six months.
- The RSO must keep inventory records for three years.

**7) Records and Reports.**

- Training certificates must be on file with the RSO before engaging in nuclear instrument operations.
- Each facility storing a nuclear instrument must designate an individual to perform an annual audit, and then document any corrective actions taken. The audit will be sent to the RSO for review, verification, and signature. A copy of the signed audit report should be kept by the facility manager.
- Records of receipt, transfer, and disposal of nuclear instruments must be maintained.
- Records of licenses issued by the NRC must be maintained.
- Physical inventories should be conducted at intervals not to exceed six months.

**8) Emergency Procedures.**

- Procedures must be developed, implemented, and maintained covering any possible emergency with the nuclear instrument or possible release of nuclear material.
- Copies of the emergency procedures must be provided to all nuclear instrument users and at each job site.

**9) Leak Testing.**

- Leak tests for each nuclear instrument must be performed by an NRC-approved organization, or according to procedures approved by the NRC.
- Leak tests will be conducted at intervals approved by NRC.

**10) Security.**

- The nuclear instrument must be under constant surveillance and secured against unauthorized use or removal.
- The NRC must be notified immediately if nuclear instruments are lost or stolen.

**11) Maintenance and Maintenance Records.**

- Maintenance (routine cleaning and lubrication) of nuclear instruments must be in accordance with the manufacturer's recommendations and instructions.
- Non-routine maintenance or repair that involves tasks in which personnel could receive radiation doses exceeding NRC limits must be performed by the nuclear instrument manufacturer or a person specifically authorized by NRC.

**12) Training.**

- Operating a nuclear instrument without the required training is prohibited.
- Users must receive initial training and refresher training at least every five years, to include:
  - Radiation safety and regulatory requirements
  - Practical safety use of the instrument
  - Radiation vs. contamination
  - Internal vs. external exposure
  - Distance to shielding to minimize exposure
  - Control and surveillance of nuclear gauges
  - Location of seal source within the portable nuclear gauge
  - Inventory
  - Record keeping
  - Incidents
  - Licensing and inspection by the regulatory agency
  - Need for complete and accurate information
  - Employee protection and misconduct
- Individuals serving as a RSO must receive training as directed in NUREG-1556, Volume 11 Rev. 1, Section 8.7 Item 7: Individual(s) Responsible for Radiation Safety Program and Their Training and Experience.

**F. Requirements for Radon**

Radon is an odorless, colorless, and naturally occurring radioactive gas that seeps in through soil and building openings. The Environmental Protection Agency (EPA) has set limits for radon concentration in housing and OSHA has set limits for occupational exposure to radon. As long-term exposure to elevated radon levels can increase risk of lung cancer, employees and occupants must be protected by observing the following requirements:



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- 1) Occupational exposures of employees and volunteers must be maintained at ALARA levels, and at no time will they be above 4 Working Level Month (WLM) per year.
- 2) Areas at or exceeding 25 picoCuries per Liter of air (pCi/L) must be posted as radon hazard areas, and employees' exposures must be evaluated.
- 3) Occupational exposures of employees and volunteers under the age of 18 years must be maintained below 0.4 WLM (10% of 4 WLM).
- 4) Concentrations in IA-owned housing units must not exceed 4 pCi/L. Functional responsibilities for radon in IA-owned housing will be determined by the RD.

### Approval

**JASON FREIHAGE** Digitally signed by JASON FREIHAGE  
Date: 2022.01.12 11:20:14 -05'00'

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Jason Freihage  
Deputy Assistant Secretary – Management (DAS-M)

Date