

**Forest Service Manual
National Headquarters – Washington Office
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**Forest Service Manual 6700 – Safety and Health Program
Chapter 6740 – Radiation Safety**

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Approved by: J. Lenise Lago, Deputy Chief, Ops

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Digest: Following is an explanation of the changes throughout the directive by section.

6740: Changes the chapter title from “Hazardous Materials” to “Radiation Safety” and revises the chapter in its entirety.

6742: Removes code, caption, and direction for “Hazard Chemicals.” Recodes direction to FSM 2160, Hazardous Material Management.

6743: Removes code, caption, and direction for “Asbestos.” Recodes direction to FSM 2167.13, Asbestos.

6745: Removes code, caption, and direction for “Explosives and Blasting Materials.” Recodes direction to FSM 7103.5, Explosives and Blasting Materials.

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6741 – Radiation Protection

See FSM 2160 for further direction on radiation sources.

6741.01 – Authority

1. Title 10 of the Code of Federal Regulations, Parts 20 and 30 (10 CFR 20 and 30). U.S. Nuclear Regulatory Commission regulations Part 20 establishes standards for protection against radiation; Part 30 covers domestic licensing of by-product material.
2. Title 29 of the Code of Federal Regulations, Sections 1910.96 and 1926.53 (29 CFR 1910.96 and 1926.53). U.S. Department of Labor Occupational Safety and Health Administration regulations establish standards for employee protection from overexposure to ionizing radiation within general industry and construction activities.
3. Title 40 of the Code of Federal Regulations, Parts 171-178 (40 CFR 171-178). U.S. Department of Transportation regulations establishes requirements for transporting and handling hazardous materials.
4. U.S. Department of Agriculture, Safety and Health Manual. This manual, issued by the Office of Human Resources Management, Safety and Health Management Division, establishes safety and health requirements at the departmental and agency level throughout USDA.
5. U.S. Department of Agriculture, Departmental Regulation 4400-005, Radiation Safety. This Departmental Regulation establishes departmental and agency radiation safety policies and responsibilities.

6741.02 – Objective

To achieve safe, accident-free, handling, storage, and transportation of radiation sources in the Forest Service for satisfactorily accomplishing research, engineering applications, and other uses, thereby preventing exposure of employees, the public, visitors, facilities, and the environment to radiation contamination.

6741.03 – Policy

All Forest Service employees using radiation sources shall hold a current radiation source use permit issued by the USDA Radiation Safety Division (RSD) or be included on a University radioactive materials license. Each Region, Station, Area, Institute, tenant, or cooperator having radiation sources shall proceed as follows:

1. Comply with all applicable Federal, State, and local laws and regulations governing the use, handling, storage, and transportation of radiation sources.

2. Protect employees, the public, visitors, facilities, and the environment from the risk of radiation hazards that could result from the use, handling, storage, and transportation of radiation sources under Forest Service control.

3. Have a qualified Radiation Safety Officer (RSO) to manage the written Radiation Safety Program, which is provided by the USDA Radiation Safety Division (RSD) or a licensed University.

6741.04 – Responsibility

Every unit at all agency levels must have a process for reporting, reviewing, analyzing, and recording accidents/incidents, as outlined in this chapter. All incidents must be recorded in the eSafety database.

6741.04a – Chief

The Chief is responsible for the following:

1. Ensuring agency compliance with radiation-related laws and regulations and with USDA RSD or licensed University Radiation Safety Program policies, procedures, and practices.
2. Nominating qualified individuals to serve as USDA Radiation Safety Committee members.

6741.04b – Regional Foresters, Station Directors, Area Director, and Institute Director

Regional Foresters, Station Directors, the Area Director, and the Institute Director are responsible for the following:

1. Appointing a Location Radiation Protection Officer (LRPO) at the Region, Station, Area, and Institute, where recommended by USDA RSD or the licensed University RSO.
2. Ensuring that a signed Memorandum of Understanding (MOU) is in place for units covered under a University radioactive materials license.
3. Terminating or restricting any activity or practice involving the unsafe use of radiation sources or as recommended by any regulatory inspector authorized under the radioactive materials license, the USDA Radiation Safety Committee, RSD or University RSO based on field-inspection results or program audits, or LRPO assessment.

Ensuring employees who are occupationally exposed to radiation sources receive appropriate training and information on the associated hazards, risks, and safeguards of ionizing radiation.

6741.04c – Field Location Managers

Field Location Managers are responsible for the following:

1. Reviewing and concurring on initial and renewal requests for radiation source use permit applications submitted by unit radiation source users.
2. Appointing a Location Radiation Protection Officer (LRPO) to coordinate the local radiation protection activities, where recommended by the USDA, RSD or University RSO.
3. Ensuring that all employees using radiation sources have appropriate safety elements in their performance plans and that job descriptions clearly define actual duties and responsibilities involving radiation sources.
4. Supporting the LRPO and implementation of the Radiation Safety Program.
5. Ensuring prompt abatement of identified hazardous conditions.

6741.04d – National Radiation Protection Program Manager

The Washington Office, Office of Safety and Occupational Health (OSO), is responsible to appoint the National Radiation Protection Program Manager (NRPPM) to administer radiation safety oversight of the Forest Service Safety and Health Program, to include the following:

1. Coordinate with the USDA, Radiation Safety Committee, RSD, and Forest Service LRPOs to resolve Forest Service radiation safety issues affecting compliance with Nuclear Regulatory Commission regulations and other applicable requirements.
2. Ensure timely reviews of permit applications and other radiation safety issues at an LRPO's request.
3. Evaluating and monitoring the radiation safety portion of the Forest Service Safety and Health Program annually to ensure compliance with Nuclear Regulatory Commission regulations and USDA or licensed University Radiation Safety Program requirements.
4. Reporting all incidents (such as high or unusual radiation exposures or loss or theft of radiation sources) to the RSD upon notification from a LRPO or radiation source user.

6741.04e – Region, Station, Area, and Institute Location Radiation Protection Officer

LRPOs at the Region, Station, Area, and Institute (R/S/A/I) headquarters offices are responsible for the following:

1. Ensuring operating personnel are trained in safe working practices, emergency procedures, correct handling/record keeping/transportation/disposal procedures, and other radiation matters as needed prior to handling radiation sources. Refresher training must be accomplished at intervals not to exceed USDA or University Radiation Safety Program requirements, as specified by the radioactive materials license.
2. Taking active measures to ensure use of adequate control and safeguards when handling radiation emitters and promptly terminating or curtaining any unsafe practices.

3. Advising the R/S/A/I Director in writing of any unsafe practices, defects, or noncompliance. This report should indicate corrective actions taken and/or recommendations to preclude recurrence.
4. Coordinating Region, Station, Area, and Institute radiation activities in accordance with Federal, State, and local laws and regulations, the USDA or University Radiation Safety Program, and the radiation safety portion of the Forest Service Safety and Health Program.
5. Ensuring personnel are aware of requirements and other communications related to the USDA or University Radiation Safety Program and the radiation safety portion of the Forest Service Safety and Health Program.
6. Coordinating initial and renewal applications for radiation source use permits and other administrative actions regarding the use, handling, storage, and transportation of radiation sources, as requested by RSD or University RSO.
7. Ensuring all radiation sources on the unit are purchased, used, handled, stored, transported, and disposed of according to applicable Federal, State, and local laws and regulations; USDA or University Radiation Safety Program requirements; and Forest Service Safety and Health Program requirements.
8. Ensuring appropriate training, notification, and protective measures to prevent occupational exposure to radiation of visitors and ancillary staff (see FSM 6740.4). This responsibility may be delegated to radiation source users.

6741.04f – Radiation Source Users

Radiation source users are responsible for the following:

1. Using, handling, storing, transporting, and disposing of radiation sources in accordance with Federal, State, and local laws and regulations; USDA Radiation Safety Program requirements; and Forest Service Safety and Health Program requirements.
2. Meeting minimum standards for permit issuance by the RSD or applicable University license holder. See FSM 6740.2 for permit requirements.
3. Providing the LRPO copies of all administrative actions, such as permit changes, taken regarding radiation sources and users.
4. Promptly reporting to the LRPO all incidents of radiation source exposure, leakage, and spills and providing information on actions taken to correct and decontaminate the workplace.
5. Discontinuing all operational radiation source use and radiation administrative actions, including but not limited to permit termination, in a responsible and timely manner before the effective dates of any retirement, transfer, termination, or other personnel action that affects the status and responsibilities of radiation source users.

6. Maintaining currency in technical use, health physics, and administration of radiation sources by meeting training or refresher course requirements in compliance with the USDA or University Radiation Safety Program.
7. Complying with the USDA or University Radiation Safety Program requirements and guidance (FSM 6740.01).
8. Providing appropriate training, notification, and protective measures to prevent occupational exposure to radiation of visitors and ancillary staff when directed by the LRPO or when local conditions dictate.

6741.04g – Role of U.S. Department of Agriculture in Radiation Safety

1. The Assistant Secretary for Administration has overall responsibility for the USDA, Radiation Safety Program. Routine operational aspects of the USDA Radiation Safety Program have been delegated to the USDA RSD, Office of Homeland Security, Emergency Coordination, and Departmental Management. The USDA Radiation Safety Division manages the daily functional operations for the safe use and control of radiation sources.
2. The USDA Radiation Safety Committee establishes general policies regarding the USDA Radiation Safety Program and conducts periodic inspections and program audits of field locations and an annual audit of the USDA Radiation Safety Division. The committee includes representatives from Departmental Administration and all agencies that use radiation sources (Animal and Plant Health Inspection Service; Agricultural Research Service; Food Safety and Inspection Service; Forest Service; and Natural Resources Conservation Service).

6741.05 – Definitions

Ancillary Staff. Auxiliary or support staff personnel (for example: administrative, janitorial, maintenance, academic, and research personnel).

Health Physics. The application of radiation safety techniques for recognizing, evaluating, and controlling the effects of ionizing radiation and the use of its sources and generating equipment and devices.

Location. A building, facility, research center, area, region, or State that has been designated as a single entity for purposes of radiation protection.

Local Radiation Protection Officer. An individual who has been designated to provide advice and assistance regarding the USDA Radiation Safety Program and the radiation safety portion of the Forest Service Safety and Health Program requirements at a specific Region/Station/Area/Institute or local unit location where radiation sources are used.

Radiation-Emitting Equipment and Devices. Equipment and devices capable of producing or emitting ionizing radiation (for example: x-ray machines, electron microscopes, and x-ray diffraction units).

Radiation Safety Officer. The individual designated at USDA Radiation Safety Division or applicable licensed University to fulfill responsibilities as outlined in Title 10 of the Code of Federal Regulations (10 CFR 35.24), and with training as outlined in Title 10 of the Code of Federal Regulations (10 CFR 35.50).

Radiation Sources. Radioactive materials and/or radiation-emitting equipment and devices.

Radioactive Materials. Substances containing an element that emits ionizing radiation upon decay.

6741.1 – Procurement, Use, and Disposal of Radiation Sources

1. All Forest Service radiation source users shall hold a current and valid radiation source use permit issued by the RSD or be covered by a University radioactive materials license before engaging in any activity requiring the purchase, use, handling, storage, transfer, transportation, and/or disposal of radiation sources.
2. Radiation source users shall purchase, use, and dispose of all radiation sources in accordance with the USDA or licensed University Radiation Safety Plan and coordinate through the LRPO when applicable.
3. Radiation source users are subject to permit review, field inspections, and program audits at the discretion of Nuclear Regulatory Commission (NRC) inspectors, USDA Radiation Safety Committee, USDA RSD or University RSO, and Forest Service Safety and Health Program Manager.
4. Disposal of radiation sources, including transferring and recycling, must be coordinated with USDA RSD or applicable University RSO and fully documented by contractual agreement or other equivalent instrument. Proceed as follows to ensure proper disposal of radiation sources:
 - a. Identify all radiation sources for disposal in the contract.
 - b. Verify Nuclear Regulatory Commission or State licensing of the contractor to receive identified radiation sources.
 - c. Assess the contractor's ability to perform by contacting Federal, State, and local nuclear regulatory agencies and the contractor's former clients.
 - d. Include a contractual requirement for the contractor to certify that proper disposal of identified sources has been achieved.

6741.2 – USDA Radiation Source Use Permits

1. All uses of radiation sources require the issuance of a USDA radiation source use permit, except as otherwise noted in USDA Radiation Safety Program requirements and guidance or when covered by a University license. The Nuclear Regulatory Commission has issued USDA a specific license that regulates the use of by-product radioactive material.
2. Radiation source users shall apply for radiation source use permits issued by the RSD or be covered under a University license in order to use radiation sources. Follow current RSD guidance to apply for a radiation use permit, including completing required forms and accessing electronic applications used to track radiation source users and inventory. Forward any forms to the LRPO following the appropriate field Location Manager's concurrence.
3. The USDA RSD issues permits in five general categories. Applications for permits can include more than one category or may address a specific research or program requirement that is outside of the categories listed. The five general categories are as follows:
 - a. Unsealed radioactive material.
 - b. Portable Nuclear moisture/density gauges.
 - c. Electron Capture Detectors (used in Gas Chromatography).
 - d. Self-shielded irradiators.
 - e. X-ray producing equipment.
4. Refer to the RSD Website for application requirements and radiation safety requirements for specific radiation sources.
5. USDA radiation permit holders shall keep inventory records current in RSD Radiation Safety Management System (RSMS), as specified on the RSD Website.

6741.3 – Transportation of Radiation Sources

Comply with the U.S. Department of Transportation requirements in Title 49 of the Code of Federal Regulations, Parts 171-178, regarding transportation of radiation sources (FSM 6740.01).

6741.4 – Protection of Ancillary Staff from Occupational Radiation Exposure

1. Ensure that appropriate training and notification are provided and protection measures are taken to prevent visitors' and ancillary staff occupational exposure to radiation (FSM 6740.05).

2. Post placards and labels in restricted areas regarding the presence of radiation sources in accordance with USDA or University Radiation Safety Program requirements and Title 10 of the Code of Federal Regulations, Parts 19 and 20.
3. Post the following information in such a manner that individuals can read the information on their way into or out of restricted areas:
 - a. Nuclear Regulatory Commission Form-3, Notice to Employees.
 - b. Title 10 of the Code of Federal Regulations, Parts 19 and 20; Section 206 of the Atomic Energy Act of 1974, as amended; the USDA license and license application; and results of Nuclear Regulatory Commission (NRC) inspections and Notice of Violations and Department responses. A notice explaining where these documents can be obtained may be posted instead of the actual documents.
4. Notify local emergency response units (police, fire department, and emergency medical services) of the presence of any radiation sources so that they are aware of a potential exposure risk when responding to an emergency.
5. Ensure that clerical personnel responsible for purchasing, shipping, and receiving radiation sources are properly trained in their role in handling materials labeled as radiation sources.