

Environmental Health and Safety Manual (EHS)

EHS 113: Radiation Safety in Research and Teaching

Effective: 4/1/1967

Revised: 11/1/2023

Purpose

To use radiation-producing materials and equipment in a manner that minimizes radiation hazards and to require that research and teaching activities involving the use of radiation comply with state, federal, and university standards

Source

Environmental Health and Safety—Radiation Safety

Applicability

All research and teaching activities involving the use of radioactive materials, ionizing radiation-producing equipment, or lasers

Policy

ASU encourages the use of radiation in research and teaching to the maximum feasible extent consistent with health, safety, and the avoidance of all unnecessary radiation exposure.

All persons using radiation sources at ASU are individually responsible for:

1. using ionizing radiation-producing materials and equipment and lasers in a manner that minimizes radiation hazards
- and
2. implementing the applicable regulations set forth by the State of Arizona Bureau of Radiation Control (AZ BRC) and the standards set forth by the Nuclear Regulatory Commission, U.S. Department of Labor, U.S. Department of Energy, Occupational Safety and Health Administration, Department of Transportation, and any additional provisions that may be specified in the *ASU Radioactive Materials Manual*, the *ASU Analytical X-Ray Safety Manual*, the *ASU Particle Accelerator Safety Manual*, and the *ASU Laser Safety Manual*.

Radiation Safety Committee

The Radiation Safety Committee is responsible for establishing and implementing policies and regulations for all radioactive materials, ionizing radiation-producing equipment, and lasers used at ASU. The committee is responsible for authorizing possession of these radiation sources. For radioactive material, the committee may authorize a user as a license holder. Others may use radioactive materials, ionizing radiation-producing equipment, or lasers only under supervision of a licensee or equipment registrant.

License Holders

A license holder must be an ASU faculty or staff and be approved by the Radiation Safety Committee. This person may possess and use radioactive materials as specified in the license. Only a license holder may purchase or dispose of radioactive material. The license holder bears responsibility and accountability for the proper use and storage of radioactive material under their control.

Radiation-Producing Equipment and Laser Registrants

Those responsible for ionizing radiation-producing equipment and lasers must register the equipment with Environmental Health and Safety—Radiation Safety (EHS) and must be full time members of ASU faculty or staff. Equipment registrants bear responsibility and accountability for the proper use and storage of ionizing radiation-producing equipment and lasers.

Other Users of Radioactive Material or Operators of Ionizing Radiation-Producing Equipment and Lasers

Technical assistants, laboratory students, or others who are not licensees or registrants may use radioactive materials or radiation-producing equipment and lasers only under the supervision of a licensee or equipment registrant. All individuals using or operating these radiation sources must obtain training from EHS.

Enforcement

EHS conducts periodic surveys and inspections of laboratories authorized to use radioactive material, radiation-producing equipment, or lasers in accordance with provisions in licenses and permits issued by the AZ BRC. The purpose of inspections and surveys is to ensure that all radiation-related activities are conducted in accordance with applicable federal and state standards, as well as university policies and procedures. Laboratories are notified of any deficiencies, items of noncompliance, or safety concerns found by EHS staff during inspections or surveys. It is the responsibility of the sublicense holder or permit holder to take corrective actions as soon as practicable following notification. If the laboratory fails to take appropriate corrective actions, EHS may request intervention by the appropriate academic unit and college administration.

The university radiation safety officer and laser safety officer have the authority through the Office of the Deputy Executive Vice President for University Services to suspend, restrict, or terminate sublicenses or permits authorizing use of radioactive material, radiation-producing equipment, or lasers if he or she deems that deficiencies, items of noncompliance, or safety concerns have not been addressed within a reasonable period of time.

The actions of the radiation safety officer are reviewed by the Arizona State University Radiation Safety Committee.

Procedures

Any individual who has contact with radioactive materials, ionizing radiation-producing equipment, or lasers should:

1. Obtain copies of the following manuals from the [Radiation Safety Web site](#):
 - a. the *ASU Radioactive Materials Manual*
 - b. the *ASU Analytical X-Ray Safety Manual*
 - c. the *ASU Particle Accelerator Safety Manual*
 - d. the *ASU Laser Safety Manual*.
2. Read and follow the standards carefully.
 - a. [AZ Radiation Regulations](#)
 - b. [NRC Dosimetry Standards](#)
 - c. [NRC Full Standards](#)

Cross-Reference

For additional information, see:

1. [EHS 401](#), "Hazardous Waste Management."
2. [EHS 108](#), "Environmental Health and Safety Training"