

University of Delaware
Environmental Health and Safety Protocol

Section: Laboratory Safety

Protocol Name: Use of Radioactive Material and Machines Capable of Producing Ionizing Radiation

Origination Date: February 1976

Revisions: June 1989, November 2015

Protocol Number: L-03

I. SCOPE OF PROTOCOL

This protocol covers all work under the purview of a regulatory license, registration, or permit held by the University that authorizes the use of sources of ionizing radiation. This protocol does not apply to companies or individuals working with sources of ionizing radiation on University property who possess their own license/registration to conduct such activities by regulatory entities (e.g. a contactor conducting radiography testing of pipe welds).

II. DEFINITIONS

A. Ionizing Radiation

1. A form of radiation which includes alpha particles, beta particles, gamma rays, x-rays, neutrons, high-speed electrons, high-speed protons, and other particles capable of producing ions. Compared to non-ionizing radiation, such as radio-or microwaves, or visible, infrared, ultraviolet light, ionizing radiation is considerably more energetic.

B. Machines Capable of Producing Ionizing Radiation

2. Machines whose intended purpose is to generate ionizing radiation when electrical power is applied. Examples of such machines include x-ray diffractometers, x-ray fluorescence units, diagnostic x-ray machines, micro-CT machines, x-ray irradiators, particle accelerators, x-ray static eliminators, bone density scanners, and x-ray photoelectron spectrometers,

III. PROTOCOL STATEMENT

A. All activities related to sources of ionizing radiation shall be conducted in compliance with U.S. Nuclear Regulatory Commission regulations and license conditions, Delaware Radiation Control Regulations, and University regulations.

IV. PROTOCOL STANDARDS AND PROCEDURES

- A. All person shall purchase, receive, possess, use, transfer, and dispose of radioactive material in accordance with procedures established by the Radiation Safety Committee and the Department of Environmental Health and Safety and found in the Safe Use of Radioactive Materials Manual located on the website of the Department of Environmental Health and Safety (www.udel.edu/ehs).
- B. All persons shall purchase, receive, possess, use, transfer, and dispose of machines capable of producing ionizing radiation in accordance with procedures established by

the Radiation Safety Committee and the Department of Environmental Health and Safety found in the Radiation Safety Manual for Radiation Producing Devices located on the website of the Department of Environmental Health and Safety (www.udel.edu/ehs).

For more information regarding this policy, contact the Department of Environmental Health and Safety 302-831-8475.