Ohio Administrative Code

Rule 3342-5-12.12 Administrative pollicy for the handling of radioactive materials.

Effective: August 7, 2020

(A) Policy statement. The purpose of this policy is to establish procedures and controls for the use of all radioactive materials and radiation use at the university. The requirements for the program aligns with the requirements of the Ohio department of health/ bureau of radiation protection, Nuclear regulatory commission and the university license and registration. The Kent state university radioactive materials and radiation use program is outlined in the Kent state university radiation safety manual and distributed to all licensees on campus.

(B) Radiation safety officer. The university radiation safety officer is appointed by the senior vice president for finance and administration to oversee the use of radioactive materials. The duties of the radiation safety officer includes:

(1) Ensuring that only authorized users on the license and the radiation workers under their direct supervision use radioactive materials.

(2) Ensuring that individuals are trained to use radioactive materials and the appropriate personal monitoring equipment is used when handling radioactive materials.

(3) Receipt and monitoring of all radioactive material packages from purchasing to disposal.

(4) Ensuring that all radioactive materials are secured against unauthorized use and removal.

(5) Regular inspection of all radioactive material laboratories.

(6) Decommissioning of laboratories to be returned to normal use.

(7) Record maintenance for the program that includes training, material inventories, personnel exposure records, wipe tests records, and leak test records which are kept accordance with local and state regulations.

(8) Calibration of equipment used for radioactive materials activity monitoring.

(9) To assure that the terms and conditions of the state license(s) are maintained.

(10) To assure that information supplied to and by the state of Ohio is updated as required.

(C) Institutional bioassay program. The Ohio department of health / bureau of radiation protection and nuclear regulatory commission requires authorized users and radiation workers that handle large quantities of tritium (H-3), I-125 or I-131 compounds under specific conditions have a bioassay performed. The Kent state university bioassay includes:

(1) Ensuring that radioactive material users handling large quantities of tritium (H-3), and iodine (I-125 or I-131) have not exceeded occupational intake limits via inhalation, absorption or ingestion.

(2) Taking appropriate clinical action to maintain the individuals health if excessive isotope levels are detected.

(3) Requiring bioassays only for specified conditions which are outlined in the Kent state university radiation safety manual.

(D) Institutional survey program. Radiation monitoring identifies sources of radiation contamination and exposure. The radiation monitoring techniques used in the radiation program will establish and maintain the regulatory operating philosophy of ALARA (as low as reasonably achievable) for all radiation levels. Monitoring will be conducted using radiation surveys and surface wipe testing.

(1) All survey meters used for radioactive material or radiation surveying must be calibrated annually by qualified firms.

(2) Personnel monitoring by a qualified company will be used by authorized users and radiation workers to measure radiation doses due to ionizing radiation.

(3) Radiation surveys will be conducted to confirm that the area radiation levels that are accessible to

personnel do not exceed mandated state limits.

(4) Surface wipe testing will be conducted in all areas that use radioactive materials, except in areas that only use sealed sources.

(5) Survey results for all radioactive material use areas will be maintained by the university radiation safety office.

(6) Authorized individuals will wipe test sealed sources in accordance with the state of Ohio requirement and submit for analysis to a licensed company. The report will be submitted to the university radiation safety office and maintained by the radiation safety officer.

(E) Radioactive material purchasing. All radioactive material purchases must be approved by the radiation safety officer or their designee before an order can be placed. The radiation safety officer must maintain the allowable radioactive active limits permitted by the license.

(1) The radiation safety officer will inspect all incoming packages and monitor them for contamination before releasing them to the laboratory.

(2) All radioactive materials must be secured in controlled areas to prevent unauthorized use and removal of material.

(3) The radiation safety office maintains a radioactive material inventory for the entire university that is updated monthly to record usage, decay and disposal.

(F) Radiation safety committee. The radiation safety committee is responsible for establishing policies governing the procurement, use, storage and disposal of radioactive materials and radiation-producing devices. The committee is comprised of experienced users that have knowledge and understanding of radioactive materials and radiation devices. The committee meets at least once a semester to review radioactivity material usage and radiation generating equipment activity. The duties of the radiation safety committee includes:

(1) Review the radiation safety program to determine that all activities are being conducted in

accordance with the radiation safety policy, license conditions, and regulatory requirements.

(2) Establish procedures and standards of practice for the radiation safety program.

(3) Review and approve all applications for use of radioactive material.

(4) Review and approve modifications and alternative uses of radioactive materials.

(5) Review radiation safety incidents, issues, and violations, and recommend corrective actions.

(6) Review of occupational radiation dose records and recommends methods to maintain low doses which align with the ALARA principle.

(G) Institutional training program. Any individual that would like to use radioactive materials must demonstrate knowledge and understanding of the required policies and procedures.

(1) Personnel must complete an initial training module and examination to confirm understanding of basic radiation material principles and practices. The initial training will be followed by an instructor led module which reviews, radiation physics fundamentals, radiation effects on living systems, basic radioactivity mathematical calculations, radioactivity measurement and monitoring techniques, and local, state, and federal regulations. An examination will be given to verify knowledge.

(2) Personnel working with unsealed radioactive materials must be trained by their supervisor who is the licensee.

(3) Users that work with sealed sources must be trained by the authorized user on the university license.

(4) Authorized users and radiation workers are provided annual training in conjunction with an examination to reinforce and update their knowledge regarding regulations, policies and procedures.

(H) Institutional waste disposal program. All radioactive solid and liquid waste is collected by the radiation safety officer.

(1) The radiation safety officer will dispose of aqueous liquid wastes down the drain in quantities that do not exceed the limits set forth in 20.303, 10 CFR part 20.

(2) Radioactive solid, liquid, tissue and carcass waste will be disposed of by an approved firm licensed by the state of Ohio.