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C A n str t v n o A t ↑or t

1. Radiation Safety Officer (RSO)

   The Radiation Safety Officer is vested with the responsibility and authority to administer and enforce the regulations of the Ohio Department of Health. The RSO has the full authority to immediately halt any activity judged to be a threat to health, safety, the environment, or a violation of ODH regulations, or the conditions of the radiation safety program. The RSO shall have free access to all areas on campus where radiation-generating equipment is located, used, or stored, and where radiation is produced. The RSO reports to the Vice President of Capital Planning and Facilities Management and performs the following duties:

   a. General surveillance of all health physics activities, including both personal and environmental monitoring.

   b. Furnishing consulting services to personnel at all levels of responsibility on all aspects of radiation protection.

   c. Reviewing and approving the credentials of all individuals who desire to use radiation-generating equipment.

   d. Reviewing and approving all procedures for the use of radiation-generating equipment to determine if the proposed work can be safely accomplished and in conducted in accordance with regulatory requirements.

   e. Controlling the receipt, delivery, transfer, and shipping of all radiation-generating equipment coming to or leaving the campus.

   f. Monitoring of all radiation-generating equipment capable of producing ionizing radiations.

   g. Instructing personnel in proper radiation safety procedures for the use of radiation-generating equipment.

h. Approving all radiation-generating equipment acquisitions.

The Vice President for Capital Planning and Facilities Management may appoint other University personnel to the committee as non-voting observers.

The committee has the responsibility for overall administration of the Radiation Safety Program, and performs the following specific functions:

a. Provides advice to the Vice President for Capital Planning and Facilities Management and RSO on policies and technical matters regarding radiation safety.

b. Reviews periodic reports from the RSO on items such

health, safety, the environment, or a violation of the ODH regulations, or the conditions of the license

The RSO has the authority to make the final institutional

equipment will be trained on current policies and procedures at the beginning of their employment, and periodically updated thereafter. Ancillary personnel will be instructed in the ALARA philosophy and informed that the University is committed to its implementation

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A A t ↑or t on o ↑ t on G n r t n Eq p nt o t ons

All rooms in which radiation-generating equipment is used or stored must be specifically approved for that purpose by the RSO. Approval will consider the type of equipment to be used and whether the preparation of a shielding design by a radiation expert is required.

All rooms approved for use of radiation-generating equipment must also be under the direct control and supervision of an authorized investigator. The investigator must accept full responsibility for the continual safe conditions in that laboratory.

Definitions: The ODH defines **r s** as follows:

1. Unrestricted Area – “any area, access to which is neither restricted nor controlled by the licensee or registrant.”

2. Restricted Area – “any area, access to which is limited by the licensee or registrant for the purpose of protecting individuals against undue risks from exposure to sources of radiation. Restricted area does not include areas used as residential quarters, but separate rooms in a residential building may be set apart as a restricted area.”

3. Controlled Area – “any area, outside of a restricted area but inside the site boundary, access to which can be limited by the licensee or registrant for any reason.”

4. Radiationar72(n)ar72(n)aces reg as , access to

5. High Radiation Area – “any area accessible to individuals in which radiation levels could result in an individual receiving a dose equivalent in excess of one (1) millisievert or 0.1 rem in one (1) hour at thirty (30) centimeters from the radiation source or thirty (30) centimeters from any surface that the radiation penetrates.”

6. Very High Radiation Area – “any area accessible to individuals in which radiation levels could result in an individual receiving an absorbed dose in excess of five (5) Gy, or five hundred (500) rad, in one (1) hour at one (1) meter from a source of radiation or from any surface that the radiation penetrates. At very high doses received at high dose rates, units of absorbed dose, gray and rad, are appropriate, rather than units of dose equivalent, sievert or rem.”

B B or B nn n t U s o R t on G n r t n Eq p nt n Approv Ar

Before working with radiation-generating equipment, all personnel must be authorized as outlined in Section 2. The authorized investigator must contact the RSO and arrange for personnel radiation exposure monitoring, including bioassay, if necessary. The authorized investigator supervising the research project is responsible for the health and safety of all personnel on the project. The investigator must be certain that all requirements and preparations have been met before assigning someone to work with any radiation-generating equipment. All personnel must also know how to contact the RSO in the event of an emergency.

The RSO must approve all procedures and applications using radiation-generating equipment. The authorized investigator must establish standard operating procedure(s) for each and every application for which the radiation-generating equipment is used. Most equipment will be operated in accordance with the standard operating procedures of the equipment=s

radiation-generating equipment to ensure that they are functioning properly and that radiation exposure is maintained ALARA.

C Us o R t on G n r t n Eq p nt

1. All radiation-generating equipment must be used and stored in designated areas approved by the RSO.

The RSO will maintain all required records of personnel occupational exposure histories and laboratory working conditions.

A rsonn Dos tr ro r

UA contracts with accredited firms for a monthly radiation dosimetry program. The type of dosimeter selected – whole body badge; ring or wrist extremity device; or both – will be determined based on the potential area(s) of exposure and in accordance with the pertinent rules established of ORC 3701:1-38, 3701: 1-66 and 3701: 1-68.

The maximum permissible exposures for personnel are as follows:

AX U E B E D E Dos n

Occupational Radiation Workers	Yearly
Total Effective Dose	5.0
Deep Dose Equivalent or Committee Dose Equivalent to:	
Eye	15
Other organ	50
Shallow Dose Equivalent to:	
Skin	50
Each of Extremities	50
Pregnant Women	0.5
Members of the General Public	0.1

The annual occupational dose limits for minors are 10 percent of the annual dose limits specified for adults.

Prior to beginning work in which personal dosimetry is require(i)1.58017(f)-12.555f

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individual complete a request form authorizing the previous employer(s) to release information regarding the individual=s prior accumulated occupational dose.

The RSO will perform monthly reviews of occupational radiation exposures with particular attention to instances in which the investigational levels in the following table are exceeded:

E pos r nv st t on v s p r / ont t

	Level I	Level II
Deep Dose Equivalent	20	200
Lens Dose Equivalent	60	600
Shallow Dose Equivalent	1,000	2,000

All reported exposures in excess of Level I will be conveyed to the individual as soon as they are detected. The RSO will attempt to determine the cause of the exposure and try to eliminate it. All reported exposures in excess of Level II will be immediately conveyed to the individual, the authorized investigator, and the Chairman of the RSC as soon as they are detected. If deemed necessary, a special meeting of the Radiation Safety Committee will be scheduled. All concerned will attempt to determine the cause of the exposure and take corrective measures. Corrective measures may include revision of standard operating procedures, construction of additional shields, implementation of additional ALARA measures, and/or suspension of the use of radiation-generating equipment by the individual.

Any exposures to radiation in excess of the limits established in ORC 3701:1-38-12 (A) (1) ((a -b) and (A) (2) (a-b) will result in the immediate cessation of all ionizing radiation activities conducted by the affected individual(s). An investigation into the cause(s) and circumstances resulting in an overexposure will be initiated immediately.

Notification of the State will be made in accordance with the requirements established in ORC 3701:1-38-21 (B) and (C).

All individuals have the right to examine their exposure reports at any reasonable time in the Radiation Safety Office. Future employers of the individual have the right to obtain a copy of their exposure history.

B r n nt o rs

A declared pregnant woman means a woman who has voluntarily informed her employer, in writing, of her pregnancy and the estimated date of conception. To ensure the health and safety of a developing fetus, the following steps shall be taken in the protection of declared pregnant workers.

1. Regulatory Guide 8.13 contains information which shall be presented, both orally and in writing, to the pregnant worker.

2. Reduced embryo/fetus dose limits outlined in 3701:1-38-12 will be implemented until the declared pregnant woman withdraws the declaration, in writing, or is no longer pregnant.

C or tor A ts

The RSO and the RSC shall conduct an annual audit of all laboratories for the purpose of evaluating compliance with all

For s

Temporary Alteration of Safety Devices Request Form

This form is required to be submitted to the RSO, or acting designate, and approved prior to the initiation of any maintenance, repair, and alignment procedure(s) on radiation-generating equipment that will be operated in an open-beam configuration with an external beam present. It must be posted near the instrument while the work is being performed, attached to the Maintenance, Repair and Alignment Report Form after completion of the work, and retained per the records retention requirements.

Date: _____

Instrument: _____

Application: _____

Procedure performed: Maintenance ____ Repair _____ Alignment _____

Safety Devices Altered: Interlocks disable

The University of Akron
Radiation Safety Office
32 S. College St. Bldg.
Akron, OH 44325- ( )'26-1.29307( )1.66364(S)7.94659F-

RADIATION-GENERATING EQUIPMENT BIANNUAL SAFETY SURVEY

Date: _____

Location: _____ Investigator: _____

Instrument Type: _____

Instrument Manufacturer: _____

Instrument Model No: _____ Instrument Serial No: _____

Instrument Application(s): _____

Instrument Status: Operational _____ In-operable _____

Safety Devices:

I. Lights (indicating power, x-ray generation, shutter, and interlock status as applicable):

Operational ____ In-operable ____ Corrective actions taken to address problem(s):

_____

II. Labels (indicating radiation-generating capability of instrument):

Present ____ Missing ____ Corrective actions taken to address problem(s):

_____

III. Interlocks:

Operational ____ In-operable ____ Corrective actions taken to address problem(s):

_____

Qualified Individual Performing Safety Check: _____
(Name Printed)

_____ _____
(Signature) (Date)