West Virginia University Radiation Safety

Radiation Safety Department Newsletter

Fall 2012

E-mail us at

radiation-safty@hsc.wvu.edu

With any of you questing regarding radiation safety

Inside this issue:

Area Surveys

Area surveys are conducted to identify areas of contamination before they cause problems, and should be conducted daily whenever radionuclides are used, and monthly even when no experiments are conducted. Area Surveys utilize Geiger-Müller counters to detect gamma and high energy beta radiation, and wipe tests to measure low level beta radiation.

To conduct a survey using the Geiger-Müller counter, one should first check to make sure the battery is charged, and that the meter has been calibrated recently. Turn the dial to the highest scale and move to the lowest scale as appropriate. An area background reading should be obtained as well as readings from all work areas. Readings should be recorded in units of mR/hr. To conduct a survey using wipes, the cotton swab should be moved across the working surface over a one square foot area. Next the swabs should be tested in a scintillation counter in order to obtain a reading.

If contamination results return with readings of 200 dpm/ 100cm^2 or more; then the area surveyed must be cleansed and retested. All attempts at cleanup should be documented. The radiation safety office should be contacted if contamination levels below 200 dpm are unable to

Global Threat Reduction Initiative Grant

The WVU Radiation Safety Department has received $344,800 in grant funding to enhance the security of radioactive materials on the entire Health Sciences Campus.

The award from Battelle Memorial Institute, on behalf of the U.S. Department of Energy, will allow Radiation Safety to invest in new technology and to provide training to local law enforcement and WVU Police. Security enhancements will take place within the facilities associated with radioactive materials and at the WVU Police building.

WVU Radiation Safety will follow the government's Global Threat Reduction Initiative (GTRI) program to reduce and protect vulnerable radiological material at the source. Three key subprograms of GTRI—convert, remove, and protect—provide a comprehensive approach to denying unwanted access to nuclear and radioactive materials.

The Nuclear Regulatory Commission (NRC) is making licensees aware of the GTRI's voluntary program endorsed by the DOE's National Nuclear Security Administration (NNSA), the Department of Homeland Security (DHS), the NRC, and the Agreement State Radiation Control Program.

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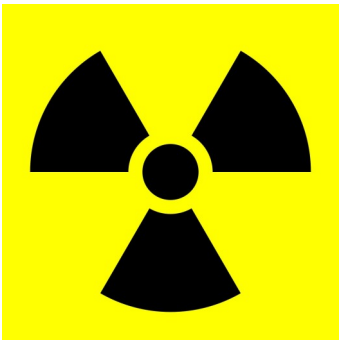
Disposal Procedures for Radioactive



Authorized Users are responsible for ensuring that all radioactive materials in their labs are handled and disposed of properly. Radioactive waste disposal guidelines are as follows:

- Radioactive waste should not be disposed of with ordinary waste
- Radioactive wastes MUST be stored in appropriate containers which are to be provided by the Radiation Safety Department
- Radioactive wastes must be appropriately labeled
- Integrity of the waste container MUST be assured
- Liquid containers utilized require secondary containment inside the laboratory
- Radioactive wastes MUST be secured against unauthorized access and removal
- Proper waste disposal records must be maintained at all times
- The final disposition of all radioactive wastes generated is the responsibility of the Radiation Safety Department

Emergency Contact Info:

During Working Hours:

(304) 293-3413

Outside of Working Hours:

(304) 987-1586

Alpha, Beta, and Gamma Radiation

Alpha Particles

Have a very short range of 0.03 mm in body tissue. Alpha particles can be stopped by a piece of paper, a few centimeters of air, and gloves.

Beta Particles

Beta particles are subatomic particles released from the nucleus of some radioactive atoms. Can travel several feet in open air and can be easily stopped by solid materials. Upon losing its energy, a beta particle becomes like any other loose electron.

Gamma Rays

Gama rays are an energetic form of electromagnetic radiation that have no mass and no charge. Gamma rays lose their energy slowly once they have entered material, allowing them to travel significant distances before stopping, including through people.

Training

WVU Training

All radiation Protection Training for WVU Research Laboratories is now available via WVU SOLE, allowing Principle Investigators, Authorized Users, and Laboratory Personnel the freedom and flexibility to complete the training whenever they have the time to do so, thus completing the Radiation Safety Department's required training. This training must be completed and renewed every year by all individuals working with radioactive materials at WVU, regardless of past experience at other institutions.

WVU Hospitals Training

All new WVU Hospital employees are required to take safety orientation training. This training includes basic information regarding the presence of ionizing radiation sources within the hospital and other info regarding the Radiation Safety program. Those with jobs specifically related to radiation, such as radiologists and nuclear medicine technologists are trained on an as needed basis. This training can be found on the WVU Healthcare Connect website.

For Links and more information on training please refer to the Radiation Safety Department web sit at: http://

Procurement

Ordering Radionuclides:

All radionuclides must be ordered and received through the Radiation Safety Department, and all orders must be signed by an Authorized User (AU) or Principle Investigator (PI).

WVU Purchasing Instructions: http://www.hsc.wvu.edu/rsafety/WVU-Purchasing-Instructions

WVU Hospitals Purchasing Instructions: http://www.hsc.wvu.edu/rsafety/WVUH-Purchasing-Instructions

Transfer From Another Institution:

In order to receive a transfer from another institution, the AU must first secure approval for use of the material from the Radiation Safety Officer. The AU must then fill out the radionuclide requisition and bring it to the Radiation Safety Department.

Transfer To Another Institution:

Radionuclides must be shipped through the Radiation Safety Department. After having the other institution send a copy of its license, or other proof that it is licensed to receive the radioactive material, bring it, the radionuclide, and its original shipping container, if possible, to the Radiation Safety Department. The Radiation Safety Department will provide assistance in packing and shipping, and will also provide additional shielding if required and if available.

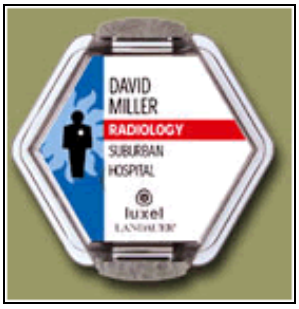
Dosimeters

Careful monitoring of the amount of ionizing radiation delivered to one's body is crucial when working in areas where one is working with radiation sources as it allows one to verify that safe practices are being followed.

There are two main types of dosimeters that are used within WVU: the Luxel Optically Stimulated Luminescent Whole Body Dosimeter (OSLD) and the Thermoluminescent Dosimeter (TLD Ring). The OSLD is used for determining deep-dose equivalent from external sources of gamma radiation and x-ray exposure or beta radiation with maximum energy greater than 0.2 MeV. The TDL Ring is used to measure exposures to the extremities and skin from the same external sources as the OSLD and is required when working with more than 1mCi of P-32, I125, Cr-51, or x-ray diffraction unit.

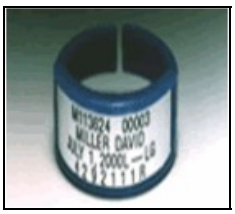
Dosimeters should be worn at all times when working with or around radiation sources, including the waste areas for radionuclides or other radioactive materials. The OSLD should be worn on the chest, collar, or waist as indicated on the label of the badge itself. The TDL Ring Dosimeter should be worn on the dominant hand, or whichever hand is most often used to handle radioactive materials, with the label facing the palm of your hand. Another Individuals dosimeter should never be worn, and dosimeters should be switched out every three months so that old ones may be tested.

Further information about dosimeters as well as the badge application form, which must be filled out in order to request a dosimeter may be found on the radiation safety website at: http://www.hsc.wvu.edu/rsafety/Dosimetry



Badge Application Form:

http://www.hsc.wvu.edu/rsafety/MediaLibraries/RSafety/Media/Documents/pdf/Form_804_Badge_Application.pdf



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About Us

The West Virginia University Radiation Safety Department, following the lead of the Radiological Safety Committee and it sub-committees, is dedicated to the continued development and application of safety guidelines and practices concerning the use of radiation and the hazards associated with it throughout all WVU Campuses, the Robert C, Byrd Health Sciences Center, Jefferson Memorial Hospital, WVU Hospitals Inc., and the Blanchette Rockefeller Neurosciences Institute.

WWW.HSC.WVU.EDU/RSAFETY/

The Radiation Safety Department is responsible for providing guidance and overseeing enforcement of safe radiation practices in all research involving radioactive materials, radiation producing devices, and the diagnostic and therapeutic use of radiation in humans and animals. This is done to ensure a safe working environment for all individuals working with radioactive materials or devices located within these facilities.

West Virginia University Radiation Safety Department

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E-mail: Email: radiationsafety@hsc.wvu.edu

With respect to U.S. Nuclear Regulatory Commission regulations, the institution has granted the West Virginia University Radiation Safety Officer authority to identify all radiation safety problems and introduce corrective actions. It is also the Radiation Safety Officer's duty to provide appropriate reports to the U.S. Nuclear Regulatory Commission, as well as the West Virginia Radiological Health Program as required by regulation.

For any questions regarding the Radiation Safety Department please refer to the radiation safety website: www.hsc.wvu.edu/rsafety/

Contact Us

Radiation Safety Department
One Medical Center Drive
P.O. Box 9006
Morgantown, W.V. 26506-9006

Office Hours: Monday - Friday
8:00 a.m. to 4:30 p.m.

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24 Hour On Call Pager: 304-987-1586
Office Fax: 304-293-4529

Email:radiationsafty@hsc.wvu.edu

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