

## Radiation Safety Topics for Non-Research Personnel

**ALARA Statement:** “It is the policy and intent of the University that all levels of the Radiation Safety Program Administration strive to keep radiation exposures to levels which are *as low as reasonably achievable*, with economic and social factors being taken into account.”

*Excerpted from the NDSU Radiation Safety Handbook*

This principle guides all activities that involve the use of radioactive material and radiation emanating devices at the University.

### *Radiation Basics:*

Radiation is all around us and there are many different classifications of radiation, both hazardous and non-hazardous. Visible light and radio waves are types of radiation, however they are essentially harmless. The radiation safety program is most concerned with a form of radiation classified as *ionizing* radiation. Within this class of radiation there are additional groups including alpha, beta, x-ray and gamma radiation. Each of these groups has unique hazards.

### *What You Need to Know:*

Laboratories using radioactive materials and certain other areas are designated. By regulation, no regulated radioactive material is allowed in an area that does not have radiation safety signs or warnings. An example of a typical warning sign is in the top right corner of this page. When you see this sign or the trefoil symbol at the center of this sign, it is your notification that a radiation hazard is present. All containers with regulated radioactive material will be labeled.

### *Some Safety Basics:*

Radioactive laboratories must be locked unless attended.

Radioactive waste bags or containers should not be moved or handled unless you are an approved user of radioactive material.

Do not handle or move vials or containers of radioactive material.

If for any reason material is spilled or a container is tipped accidentally, contact the Principal Investigator of the laboratory immediately. If not available, contact the safety office at 1-7759. Information placards containing emergency contact information are available in all laboratory areas.

### *Sources of Radiation at the University:*

- X-ray machines – These present only a minimal hazard to the public because they are shielded with guards and these guards block the X-radiation or they are used for diagnostic medical tests and operated only under the supervision of qualified and trained personnel.
- Radioactive isotopes used in research.
  - Examples include H-3, C-14, P-32, P-33, S-35, & I-125.
  - The type of radiation emitted depends on the radioisotope.
  - Exposure in the laboratory is low due to the small amount of activity used per experiment.
  - Larger stocks of isotopes are locked in storage containers unless in active use by researcher.

### *Bottom Line Take Home Message:*

Radioactive materials are present at NDSU for research activities. The researchers have received specialized training and follow good laboratory practice procedures in order to keep the amount of radioactivity exposure as low as reasonably achievable. The Radiation Safety Office and Radiation Safety Committee oversee all usage of radioactive material to ensure that it is used safely. When you see the radioactive warning labels, be extra cautious. Don't disturb any materials that have been labeled as radioactive and don't handle any waste containers that have radioactive markings.

### *For More Information:*

Contact the NDSU Radiation Safety Office at 231-7759 or email [brandon.gustafson@ndsu.edu](mailto:brandon.gustafson@ndsu.edu).

