

Ionizing Radiation Awareness (Non-User)



What is radiation?

Radiation comes from particles or rays emitted by unstable elements (radioisotopes) or from x-rays produced directly or indirectly by high-voltage electrons in machines. The properties of radiation are very useful in biological research and studying the structure of materials.

Is radiation harmful?

Although the total amount of energy is not great, the energy of the rays or particles at the molecular level is very intense.

Radiation can split apart molecules in your body. The main effect is like smoking: slowly, over a long period of time, damage will accumulate and might lead to a slight, increased risk of cancer (the risk for smoking is much larger).

Will I be exposed?

The use of radioactive materials or radiation-producing machines is only allowed in restricted, carefully controlled areas at Texas State University. Even people entering these areas should have little or no exposure to radiation as laboratory workers are careful to employ the proper protective measures and make sure that no radiation or radioactive materials leave specially designated work areas. These work areas are regularly inspected to insure that they pose no harm to members of the general public

Why are we so careful with radiation?

Radiation is invisible. The effects are irreversible. And just as with smoking, the effects, in the form of increased risk of cancer, only show up after many years.



How can I tell if I am entering a radioactive work area?

Work areas or machines that pose any significant radiation hazard to anyone who is careless must be posted with an appropriate warning. Rooms have a sign on the door. Work areas and machines are individually posted.

Caution Signs

- Standard symbol: Three-bladed design
- Symbol may be magenta, or purple, or black.
- Yellow background.



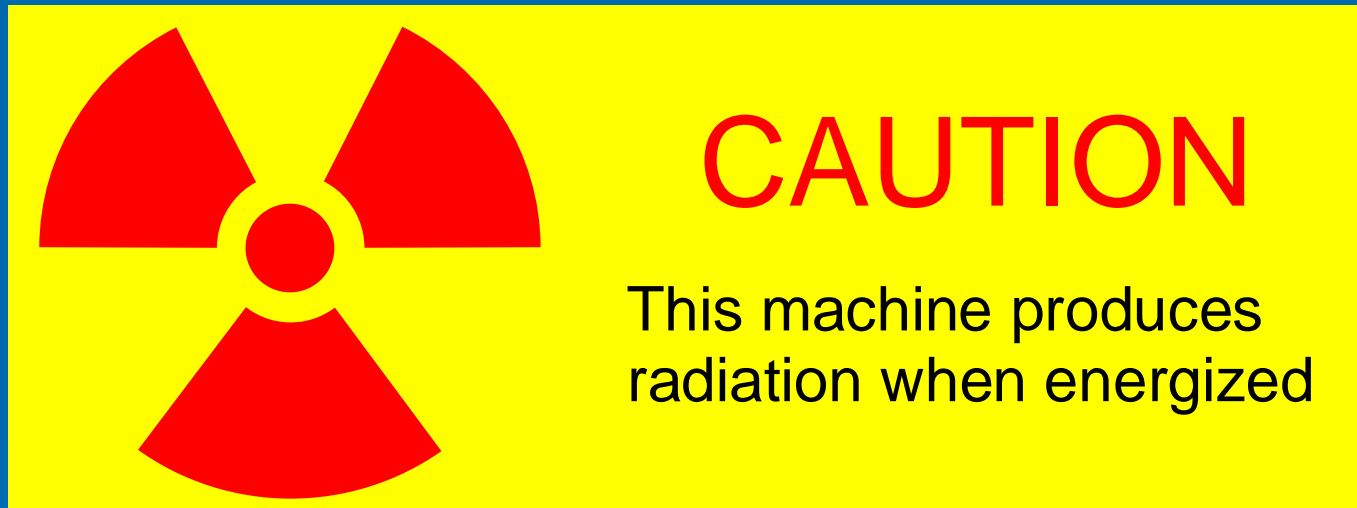
Warning Signs



Warning Sign



Instrument Warning Sign



What should I do in a room with radioactive materials ?

- Don't lounge around work areas marked with radioactive warning signs.
- Don't touch objects in posted areas, especially objects that are themselves marked with tape.
- Don't eat, drink, apply cosmetics, etc., in a room with radioactive materials to minimize the risk of eating a small amount of radioactive contamination that someone overlooked or neglected to clean up.
- Don't assume that something is not radioactive just because it looks like ordinary trash to you.
- Look for the labels.
- Lab personnel should explain what is safe and what is not. When in doubt, ask!
- Ordinary trash should be kept away from radioactive work areas to avoid the possibility of confusion.

What are my rights with regards to radiation?

- The use of radioactive materials and radiation is governed by the Texas Department of Health. Every area of radiation use must be posted with a NOTICE TO EMPLOYEES in addition to hazard warning signs. You have the right to learn about the regulations, proper operating procedures, any past safety violations, limits on exposure to radiation, and other aspects of safe operation in any work place at Texas State University.

Where can I find out more about radiation and radioactive material?

- All information available on radiation use is provided through the Risk Management & Safety Office, ext. 5-3616.
- If you are going to work with radioactive materials or radiation-producing machines yourself, you must receive advance training on proper operating procedures and possible hazards. Your supervisor will see that you take the radioisotope user's course or are properly instructed on the safe use of a radiation-producing machine.