Other Radiation Sources

**Radiation Producing Machine**
- Any device capable of producing ionizing radiation when the associated control devices are operated, except devices which produce radiation only by the use of radioactive material.

**Enclosed System**
- A radiation producing machine which satisfies the requirement that all areas with exposure rates greater than 0.25 mR/hr are enclosed within an interlocked barrier.

**Open Systems**
- Any other radiation producing machine that does not fit the definition for an enclosed system. Examples are x-ray diffraction and radiography units, particle accelerators, electron microscopes, tokamaks, and high voltage rectifiers operating above 10kV.
Other Radiation Sources

Safety Precautions

- Follow manufacturer’s or instructor’s instructions
- Follow Standard Operating Procedures
- Do not alter the equipment in any way
- Always wear the proper personal protective equipment
Other Radiation Sources

Sealed Sources

- Radioactive material permanently fixed or bonded to prevent release of radioactive material under the most severed conditions which are likely to be encountered under normal use and handling.
- Even though sources may be considered “low level” sources please handle as little as possible.
Sealed Sources

Examples:
- H3 – gas sealed, luminous articles
- P32 – Self luminous light source
- Co57 - Check sources
- Co60 – Industrial, radiotherapy, clinical therapy, sterilization, gauging
- Ni63 - Gauging
- Kr85 – Ophthalmic applicators, thickness gauge, check sources
- Sr99 – Bone mineral analyzers, seeds, Industrial radiography, calibration, brachytherapy, teletherapy
- Cs137 – Industrial radiography, clinical therapy, Lightning conductors
- Ir192 - Neutron sources, well logging moisture gauges
- Ra226 – Foil thickness measurements, lightning conductors, smoke detectors
Radiation Safety Resources

- **The University of Vermont**, “The RSO Instructional Video.”  
  [http://www.uvm.edu/~radsafe/?Page=The_RSO_Video.htm](http://www.uvm.edu/~radsafe/?Page=The_RSO_Video.htm)

- **Idaho State University**, “Radiation Information Network’s, The RSO Toolbox.”  

- **Iowa Department of Public Health**, “Radiation Materials Program.”  
  [https://idph.iowa.gov/radioactivematerials](https://idph.iowa.gov/radioactivematerials)

- **U.S. Environmental Protection Agency**, “Understanding Radiation.”  
Radiation Safety Resources

- University of Texas, “Basic Radiation Safety Awareness training.” [https://www.uth.edu/dotAsset/7f418bea-3f2e-428a-92ee-0f529a7a2eba.ppt](https://www.uth.edu/dotAsset/7f418bea-3f2e-428a-92ee-0f529a7a2eba.ppt)