



Radiation Safety Training

An overview of OSHA and UNI standards

University of Northern Iowa
Environmental Health and Safety

Topics

- ✱ Training
- ✱ History
- ✱ Radiation Fundamentals
- ✱ Measuring radiation
- ✱ Biological Effects
- ✱ Methods for Reducing Exposure

Topics

- ✱ Emergency Procedures
- ✱ Regulations, Security and Records
- ✱ Warning Sign and Label Requirements
- ✱ Radioactive Waste Disposal
- ✱ Other Radiation Sources
- ✱ Radiation Safety Resources

Training

- ✿ This training program was established to create a broader awareness for the safety of the University of Northern Iowa employees and their working environment.
- ✿ It is mandatory that all workers be trained and certified prior to the use of radioactive materials.
- ✿ This program is also to help employees determine the need for more advanced training.

Training (Cont'd)

Who must receive training?

- Any employee of the University of Northern Iowa who may be occupationally exposed to radioactive materials.
 - ❖ This includes ancillary personnel, such as clerical, housekeeping, or security, whose duties may require that they work in the vicinity of radioactive material.

Training

Requirements

➤ Initial Training

- ❖ Required for anyone who has not been previously authorized to work with radioactive materials.

➤ Annual Refresher

- ❖ Required every twelve months to continue authorization to use radioactive materials.

History

Timeline

- 1895 – Wilhelm Roentgen discovers X-rays
- 1896 - Henri Becquerel discovers Uranium emits radiation
- 1898 – Marie and Pierre Curie isolated Radium and Polonium from Pitchblende. Coined the term radioactivity
- 1911 – Rutherford developed ‘planetary model’ of the atom
- 1911 - Millikan measures charged atom
- 1913 – Fajans and Soddy demonstrated existence of isotopes

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History

Timeline

- 1932 – Chadwick discovers neutron
- 1938 – Hahn and Strassman discovers nuclear fission
- 1945 – Harry Truman orders first atomic bombs to be dropped on Japan (Manhattan Project)
- 1972 – Natural ancient nuclear reactor discovered in Africa
- 1986 – Chernobyl nuclear disaster
- 2011 – Fukushima Daichi nuclear disaster



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