



Additional postings are used to identify areas within the radiological area where specific radiological hazards may exist such as contamination, airborne radioactivity or high radiation areas. Remember, untrained visitors are not permitted to enter any of these posted areas.

For unescorted entry into these areas, you must first receive the proper training and approval. In addition, untrained workers are not allowed to handle radioactive materials or enter High Radiation Areas, High Contamination Areas, or Airborne Radioactivity Areas during their stay at the Westinghouse Waltz Mill site.

All persons entering the radiological area are required to read and understand the instructions provided in a document called a Radiation Work Permit (RWP). Your escort or a member of our Radiation Safety staff will review this information with you and answer any questions you may have.



What should a visitor do in an emergency?

In the unlikely event that an emergency such as a fire alarm occurs, it is important for visitors to closely follow the instructions of their escort.

If an evacuation is necessary, follow your escort to the assembly point and wait there for further instructions. The assembly point for all Westinghouse personnel and visitors is posted in the parking lot next to the building you are in. To report any emergency, pick up the nearest phone and dial 5911 or 911 (you will be directed to Security). Stay on the line until you receive instructions to hang up. If you are reporting an emergency using a cell phone, the number is 724-722-5911.

What responsibilities does a visitor have concerning radiological safety?

Visitors have a responsibility to help maintain exposures to radiation and radioactive materials ALARA. Visitors also have the following important responsibilities:

1. Comply with all radiological safety rules and all instructions provided by your escort.
2. Remain with your escort at all times.
3. Obey all signs and postings.
4. Do not enter Radiological Areas unless escorted and wearing your dosimeter, and then only if necessary.
5. Avoid contacting potentially contaminated surfaces.
6. Do not eat, drink or chew in the radiological area. Smoking is not permitted in the radiological area, only in designated areas outside of the radiological area.
7. Be alert for unusual radiological situations and report such situations to your escort immediately.



For More Information Contact

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Radiation Safety & Your Visit to the Waltz Mill Site



We are glad to have you as our guest.

To make your visit a safe one, you are required to read and understand the material in this brochure. Questions should be directed to your site host.

This brochure is designed to orient you in radiological safety for your visit. It is **NOT** considered proper training for unescorted access to posted radiological areas.

What is radiation?

Radiation is energy in the form of electromagnetic waves or energetic particles. Examples of radiation are alpha particles, beta particles, neutron particles, gamma rays and X-rays. Radiation can be produced by the decay of an unstable atom or by radiation producing devices such as X-ray machines. Materials that contain atoms with unstable nuclei that emit this type of energy are called radioactive.

Is radiation hazardous?

Some types of radiation are highly penetrating. Some radiation can pass through air, clothing, and even skin. Radiation can damage cells as it passes through the body. Most of the time, the cells are able to repair the damage, but on rare occasions, they cannot. Of course, there are many billions of cells in the body, but if enough are damaged, there is a risk of illness.

Exposure to certain types and levels of radiation have been linked to certain types of cancer, and radiation has been shown in some plants and animals to cause genetic effects that may be passed on to future generations-. However, there has been no clear relationship shown between radiation and genetic effects in humans.

How is radiation dose measured?

Radiation cannot be detected with our normal senses. Special detection devices can, however, detect and measure radiation. Visitors who are escorted into radiological areas must wear a dosimeter at all times. Proper wearing of the dosimeter is important to obtain a reliable dose estimate. If you are issued a dosimeter:

- Wear the dosimeter at all times while in the radiological area.
- Position the dosimeter on your body as shown by your escort.
- Promptly report a lost or damaged dosimeter to your escort.
- Return the dosimeter at the entrance portal or to your escort before leaving the site.



The unit used to measure radiation dose is the rem. However, the rem is a relatively large unit. Therefore, radiation dose is often expressed in units of millirem (mrem) instead.



1 millirem = 0.001 rem or 1000 mrem = 1 rem

What is the difference between radiation and contamination?

A common misconception is that things that are exposed to radiation become contaminated. This is NOT true. Contamination is radioactive material in a place where it is not wanted. Contamination of a person results from direct contact with removable radioactive material and the following transfer of some of the radioactive material to the person. Contamination can usually be easily removed by washing with soap and water. Upon exiting the radiological area, you and any items you brought into the area will be checked for contamination before leaving. Your escort will provide specific instructions on the monitoring procedure.

What are the risks associated with radiation exposure?

Although it is true that radiation can cause biological damage, it is important to keep the risks in perspective. The maximum allowed dose for a member of the public at a nuclear facility under US regulation is 100 millirem per year. This dose is about one third of the annual radiation dose that we all receive as a result of exposure to naturally occurring sources of radiation including radon gas. Together, these natural sources of radiation contribute approximately 300 mrem per year of dose to the average member of the public. Manmade sources of radiation (such as medical X-rays and consumer products) account for another 300 mrem per year, so the average person receives a total radiation dose of about ~600 mrem per year. Some groups may get higher doses due to their occupation, lifestyle, or location. Examples of increases in average exposures:

Group	Additional Annual Dose (mrem)
Living in Colorado	100
Airline flight crew	300
Nuclear power plant worker	180
Medical personnel	70

Workers at the Westinghouse Waltz Mill site are protected against receiving radiation doses at levels that might result in any significant increase in the risk of cancer or other ill effects. The vast majority of visitors to the Westinghouse Waltz Mill site receive less than 1.0 mrem as a result of their visit.

How can radiation dose be minimized?

The Westinghouse Waltz Mill site is firmly committed to and responsible for maintaining your exposure As Low As Reasonably Achievable (ALARA). The ALARA concept is an integral part of all site radiological activities.

In support of the ALARA concept, radiological controls are established in order to protect individuals from exposure to radiation and radioactive material. These controls include postings that warn individuals before they enter areas of increased radiation or contamination. Additional ALARA techniques include minimizing time, maximizing distance, and providing shielding from radiation sources.

Visitors are expected to apply the ALARA concept by obeying signs, minimizing time in radiological areas, avoiding contact with contaminated surfaces, and by closely following the instructions of their escort.

How are radioactive materials and areas identified?

Any area that is managed in order to protect individuals from exposure to radiation and/or radioactive materials is posted with a magenta and yellow trefoil symbol. Access points to a radiological area are clearly marked by signs, ropes, taped yellow curbs, step off pads, or other barriers as shown on the next page. **Visitors must be escorted at all times when entering, observing and exiting these areas.**