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Nuclear Power Plant Accident

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What happens when there is a nuclear power plant accident?

A nuclear power plant uses uranium fuel to produce steam for generating electricity. This process changes uranium into other radioactive materials. If a nuclear power plant accident occurs, heat and pressure build up, and the steam, along with the radioactive materials, may be released.

How am I protected from a nuclear power plant accident?

- Nuclear power plants are designed with many systems to help prevent radioactive materials from being released into the environment. For example, reactors in the United States are built inside of concrete buildings designed to contain radioactive material that could be released in an accident.
- State and local governments, with the support of the federal government and the power companies, have emergency plans for nuclear power plant accidents and routinely test their ability to protect people. In addition, to prevent terrorism, nuclear power plants have special security measures in place to limit access only to authorized people.

What are the health effects of a nuclear power plant accident?

No immediate health effects would be expected in the general public from a nuclear power plant accident. That is because the amount of radiation present would be too small to cause immediate injury or illness. However, there is a risk of long-term health effects. Cancer may develop many years after the exposure.

How do I prepare for a nuclear power plant accident?

- Those living within 10 miles of a nuclear power plant should know their designated evacuation zones and routes. Power companies publish this information in telephone books and calendars. For more information, contact your local library or emergency management agency.
- If you have a disability and require special assistance for evacuation during an emergency, contact your local emergency management or social services agency to ensure that plans are in place to assist you.
- Keep a working radio with spare batteries available. Sirens are located in residential areas near nuclear power plants. Know when the sirens will be tested. Know which radio station to listen to when the sirens sound.
- In Virginia, people living or working within a 10 mile area of a nuclear power plant are provided one potassium iodide (KI) tablet for protection from radioactive iodine. Contact your local health department to get KI and instructions on how to use it. The KI will also be available to the public at evacuation assembly centers during an emergency.

What should people do if a nuclear power plant accident happens?

People cannot see, smell, feel or taste radiation. Special equipment is needed to detect radiation. In the event of a nuclear power plant accident, the power company will notify state and local officials and provide information about the seriousness of the accident. Emergency workers will measure the radiation released in the environment. Sirens may be used to alert people living or working near the power plant to listen to emergency broadcast messages. Officials may recommend any of the following:

- Continue normal activities and monitor the radio or TV until the emergency is over.

- Shelter in place: Stay inside, close all windows and turn off the air conditioner. Monitor the radio or TV until the emergency is over.
- Evacuate: Before you leave home, take prescription medicines and personal toiletry items with you. Consider going to the evacuation assembly center. If you are traveling in a vehicle, close all windows and vents to prevent radioactive material from entering the car. Take the designated emergency routes for your area.

Can people take potassium iodine (KI) or other drugs to protect themselves from radiation?

Drugs are not available to protect a person from most radioactive materials. Potassium iodide, also called KI, only protects the thyroid gland from exposure to radioactive iodine, which could lead to thyroid cancer years after exposure. KI does not protect a person from the immediate effects of radiation.

Where can I find additional information about nuclear power plant accidents?

More information about nuclear power plant accidents can be found through the Virginia Department of Health at www.vdh.virginia.gov/EPR/Agents/Radiation, the U.S. Centers for Disease Control and Prevention at www.bt.cdc.gov/radiation/, or the U.S. Nuclear Regulatory Commission at www.nrc.gov/what-we-do/emerg-preparedness/prepare-for-radiological-emerg.html.

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