



EMERGENCY PLANNING

Although nuclear plants are safe, with excellent operating records, we have the responsibility to ensure we are able to respond if plant security is ever challenged. To protect our workers, their families and the public, we devote extensive resources to planning our emergency response to operational and security-related events. The nuclear energy industry's commitment to excellence, combined with continual training and testing, has produced an unparalleled level of emergency preparedness in America's industrial sector. There are two basic steps in nuclear plant emergency preparedness. First, do what it takes to keep the plant safe. Second, determine in advance what to do if an event requires an emergency response.

Emergency Preparedness

The nuclear power plants at Calvert Cliffs have been part of the southern Maryland community for over 30 years. During that time, the local county governments, the state of Maryland and Constellation Energy have worked closely together to continually update and test the radiological emergency preparedness plan. Hundreds of employees of Constellation Energy as well as local, county, state and federal agencies are involved in this program. All share a common goal—to protect the health and safety of Maryland's citizens.

Teamwork in Action

Nuclear power plant emergency plans have a broad reach, involving hundreds of employees at each plant. The U.S. Nuclear Regulatory Commission (NRC), state and local government and emergency response officials—including fire departments, law enforcement and traffic control authorities—also are included in the company's plan and participate in periodic exercises to demonstrate its viability. Ongoing communication coupled with regular drills and exercises ensure that plant personnel and the community's emergency response organizations are a finely-honed team.

Roles and Responsibilities in an Emergency

In the event of a nuclear plant emergency, the company operating the plant classifies the event on an NRC-established scale (shown on page 5) and notifies local, state and federal emergency organizations within 15 minutes. The company also recommends protective actions for the public near the plant.

State and local officials are responsible for emergency response planning, public notification and the implementation of protective actions, if needed.

Regulatory Oversight of Emergency Preparedness

The NRC is responsible for safety oversight of nuclear power plants. The agency assesses reactor performance through a combination of inspections and data on 18 performance indicators. Three of these indicators pertain to emergency preparedness:

- Drill and exercise performance illustrating emergency preparedness
- The percentage of emergency response organization members who have participated in a drill or exercise
- The working order of the siren alert system, as measured by periodic testing

Every reactor receives at least 2,500 hours per year of NRC inspection, a portion of which is allocated to a review of the facility's compliance with emergency preparedness regulations. The NRC assesses its findings from these inspections to determine their safety significance. The NRC posts the results for each performance indicator—along with inspection findings—on its Web site at www.nrc.gov.

Emergency Planning Zones

Constellation Energy recognizes that, like other industries, as operators of nuclear plants we have a potential to release hazardous materials despite the many safety standards and strict regulations under which we operate. We work closely with federal, state and county officials to handle an emergency in an efficient manner. Plans have been developed to ensure the protection of the public, especially those who live within a 10-mile radius of the plant—the designated Emergency Planning Zone (EPZ).

The Federal Emergency Management Agency (FEMA) and the NRC define the 10-mile EPZ as the area around the nuclear power plant that initially would be affected if a release of radioactivity were to occur. People living within the “release pathway” could be exposed to radiation if a radioactive release occurred.

Additionally, FEMA and the NRC define a 50-mile “ingestion pathway” as the area where the principal exposure from an accident would be from the ingestion of contaminated water or foods.

Federal Regulations

Federal law requires every U.S. nuclear power plant to maintain and regularly exercise a detailed emergency preparedness plan to protect the public in the unlikely event of an accident at the facility. The NRC and state of Maryland approve these plans. The NRC also coordinates with FEMA.

Each plant conducts a full-scale exercise every two years—involving federal, state and local officials—and conducts additional drills between these exercises. The Federal Radiological Preparedness Coordinating Committee—including representatives from the NRC, FEMA and the Environmental Protection Agency—developed the basis for a radiological emergency program in 1978. The committee's task force determined that a 10-mile radius around a nuclear power plant is an appropriate emergency planning zone in the event of a release of radioactivity from a reactor. The federal task force concluded that the public beyond the 10-mile radius of a nuclear plant is not at risk from direct exposure to any radioactive materials that may be released. However, authorities would take protective measures for other populations as needed.

A nuclear plant's emergency response plan must provide protective measures such as sheltering, evacuation or consideration of distributing potassium iodide—which can protect the thyroid from radioactive iodine—for residents within 10 miles of the plant.

EPZ Calendar

Each year, a calendar with emergency planning information is distributed to all residents in the 10-mile emergency planning zone. The information describes actions that may be taken in an event of an emergency. Maps show the breakdown of the protective action zones, the location of the Emergency Reception Centers and the designated evacuation routes.

Nuclear Regulatory Commission

The NRC regulates the operation of commercial nuclear power plants. It is the NRC's responsibility to see that the proper safeguards to protect the public and the environment are observed at nuclear power plants. The NRC issues power plant licenses and regulations concerning operation. They also oversee day-to-day operation and the annual emergency preparedness exercises. NRC resident inspectors are stationed at Calvert Cliffs and all nuclear plants.

For more information about the NRC, contact:

Public Affairs Officer, Region 1
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406
Phone: 215-337-5330
Web: www.nrc.gov

Federal Emergency Management Agency

FEMA is the lead federal agency for off-site radiological emergency preparedness. FEMA has issued regulations for detailed planning to handle a radiological emergency. The major elements of these regulations are:

- Procedures for state and county governments in submitting preparedness plans for review and approval by FEMA.
- Provisions for conducting and evaluating drills and exercises.
- Criteria for evaluating emergency plans and their implementation exercises.
- Procedures for coordinating the provisions of federal assistance for the state and county.

FEMA acts on the licensee's request for federal response in situations where state and county governments need additional help to adequately participate in radiological emergency planning and preparedness.

For more information about FEMA, contact:

Federal Emergency Management Agency
Region II
26 Federal Plaza
New York, NY 10278
Phone: 212-680-3609
Web: www.fema.gov

State and County Emergency Management Agencies

Maryland Emergency Management Agency

Camp Fretterd Military Reservation
5401 Rue Saint Lo Drive
Reisterstown, MD 21136
Phone: 410-517-3600
Web: www.mema.state.md.us

Calvert County Emergency Management Agency

175 Main Street Court House
Prince Frederick, MD 20678
Phone: 410-535-1600 x2301
Web: www.co.cal.md.us

Dorchester County Emergency Management and Civil Defense Agency

829 Fieldcrest Road
Cambridge, MD 21613
Phone: 410-228-1818
Web: www.docogonet.com

St. Mary's County Department of Public Safety

23090 Leonard Hall Drive
P.O. Box 653
Leonardtown, MD 20650
Phone: 301-475-4200; Option 6 then Option 3
Web: www.stmarysmd.com

Media's Role

In any emergency, it is important that people respond calmly and work with emergency officials. The general public would need to listen to local media outlets for emergency broadcast instructions. Emergency management officials at federal, state and local levels would rely on members of the media to help reach the community. We look to the media as valuable partners in protecting the health and safety of the public.



Emergency Classifications

Emergency conditions are divided into four classification levels to cover the range of probable and postulated accidents. There are specific actions for recognizing, categorizing and declaring each class of event. Provisions are also included to continually assess and change the classification, and corresponding response, should the severity of the emergency condition change.

In the event of a radiological incident, the plant's Emergency Director would immediately notify the state and county emergency management offices. The response taken would depend on the severity of the incident described by pre-established classifications. Because the four classifications are based on specific plant conditions and measurements, they provide a clear indication of the seriousness of the event. The four classifications are:

Unusual Event

This is the least serious of the four classifications. Because of the strict federal regulations, any event out of the ordinary is reported to federal, state and local authorities. An unusual event poses no risk to the public or to plant employees. It means a minor problem exists.

In an unusual event, staff members are put on stand-by and all agencies monitor the situation.

Alert

An alert is declared when an event has occurred that could reduce the level of safety at the plant, but backup plant systems are available. Emergency agencies are notified and asked to stay in touch, but no action by the public is necessary.

Site Area Emergency

A site area emergency is declared when there is a problem with plant safety systems, and a release of some radioactivity into the air or water is possible. Any such releases would be below that which would require the public to take protective action. The sirens may be sounded. Members of the public should listen to Emergency Alert System stations for information and instructions.

General Emergency

A general emergency is declared when an event at the plant has caused a loss of several safety systems that could lead to a release of radiation. State and local authorities would take action to protect the residents living near the plant.

All agencies and organizations involved in radiological emergency preparedness are notified, all emergency operation centers are activated, and all predesignated agency personnel and resources are deployed.

People in affected areas would be advised by authorities via Emergency Alert System stations to take protective actions that could include sheltering indoors, evacuation, and/or the recommendation to take potassium iodide (KI).

GENERAL EMERGENCY

SITE AREA EMERGENCY

ALERT

UNUSUAL EVENT

Potassium Iodide Information

What is Potassium Iodide (KI)?

Potassium iodide (KI) is a salt compound consisting of potassium and iodine. Iodine is used by the thyroid gland to produce hormones that help control metabolism. KI has been provided to residents within the emergency planning zone and should be taken only when directed by county officials. Taken within several hours of exposure to radioactive iodine, KI can block the concentration of radioactive iodine in the thyroid gland, thereby reducing one type of radiation exposure.

Taking KI is not an alternative to evacuating the area. Although KI may help in protecting you from the absorption of radioactive iodine into your thyroid, the best method of total protection in an emergency radiological event is to evacuate the area. Evacuation not only protects you from exposure to radioactive iodine, but also provides protection from all other radioactivity that could possibly be released during a nuclear emergency.

How Will the Public Know When To Take KI?

The use of KI is only indicated in emergencies where the public is likely to be exposed to radioactive iodine. The state and county Health Departments monitor all radiation emergencies and will immediately notify the public if KI should be taken to prevent a radiation dose to the thyroid. Of course, the health department will make this immediately known through public announcements, through the media and through the Emergency Alert System. When the emergency has passed and it is no longer necessary to take KI, that information will be widely publicized as well.

Where is KI available and what is the dosage?

Currently, KI is available in a limited number of pharmacies in the area and from the county. Some formulations of KI may be purchased without a doctor's prescription; however, please consult your doctor to receive proper dosing information for each individual in your home.

Constellation Energy Emergency Planning

Constellation Energy is responsible for emergency preparedness response planning and activities within the nuclear plant site boundary. We must be able to respond adequately to incidents that might occur at our power plant. The objectives of the emergency plans are to:

- Assess plant conditions and possible pathways for the release of radioactive material.
- Direct response and recovery activities, and to provide ongoing monitoring of plant conditions.
- Provide off-site emergency response officials with plant condition reports, radiation dose projection and the results of environmental monitoring.