



STATE OF FLORIDA

DIVISION OF EMERGENCY MANAGEMENT

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Nuclear Power Preparedness in Florida

When a hurricane or water surge occurs in Florida, what safety measures would our Florida nuclear power plants (NPP) take?

All nuclear power plant base elevations have been set at a level in excess of expected water surges and are built to take the surge of water by a Category 5 hurricane. The plants are well-protected against tsunami or hurricane conditions, as required by Nuclear Regulatory Commission (NRC) regulations. The NRC has staff at the plants keeping track of the plant's performance. Florida nuclear power plants are built to withstand all potential environmental hazards, including earthquakes, tsunamis, and the most powerful hurricanes. Although Florida is not in a seismically active area, the plants are designed for safety in the event of such a disaster that Japan suffered. The NRC requires that safety-significant structures, systems, and components be designed to take into account the most severe natural phenomena historically reported for the site and surrounding area.

Nuclear power plant operators receive regular training on all design basis events, with hurricanes or earthquakes being just two of them.

Finally, two hours prior to hurricane force winds, the nuclear power plant reactor is shut down. From experience, we know that power demand is down before a hurricane because businesses and homes close. If additional power is needed immediately after the storm, it is purchased from utility partners.

Is there a tsunami threat to Florida's nuclear power plants?

Historically, large-scale tsunami events have not been a major threat to the State of Florida, however, Florida's nuclear power plants are always prepared to mitigate any hazards that they may face. In an analysis of the possibility of a hazardous tsunami affecting Florida, it would be generated large distances away from the nuclear power plants. It is likely that the nuclear power plants would receive enough warning to initiate shutdown and emergency procedures.

How does Florida prepare for an event such as the one experienced in Japan?

Each year, all nuclear power plants (Crystal River, Turkey Point, and Saint Lucie, as well as Farley in Dothan AL), conduct a full-scale exercise with the surrounding counties, State, Federal Emergency Management Agency (FEMA), and the NRC. These exercises ensure all levels of government are well-versed on the plans and procedures needed to respond to an emergency.

The annual exercise scenarios cover a broad range of disasters, including even unlikely events. The emergency plans are written the same way. Plans, procedures, and actions taken during the exercises are evaluated and/or monitored by FEMA and the NRC. In addition to an annual exercise, all nuclear power plants conduct four drills per year. Drills

and exercise include off-site response organizations. There are community outreach programs in communities near nuclear power plants in which citizens are provided with information on what to do in the event of situation where there may be need to evacuate or shelter-in-place.

Japan evacuated an area around their nuclear power plant of about 12 miles. What would be the estimated population of people impacted by a similar evacuation in Florida?

Florida uses a ten-mile circle around each of Florida's nuclear power plants for emergency planning for evacuations. The approximate impact for Saint Lucie would be ~225,000 people, Turkey Point would be ~150,000 people, and Crystal River would be ~25,000 people. Depending on the severity of a nuclear release, the population would either be sheltered-in-place, or evacuated and sheltered outside of the ten-mile zone around the nuclear power plant. Counties affected by a release of radiation, have plans in place for sheltering and evacuation of people. Notification is made through each county's emergency notification system. In regards to the Saint Lucie Nuclear Power Plant, there are prearranged agreements and plans to shelter populations in host counties to ensure enough shelter space for all evacuees.

If a loss of power occurs at a Florida nuclear power plant, what procedures are in place to ensure the reactor core cooling system remains operational?

Florida power plants have redundant diesel generators that can power reactor cooling systems. If one generator failed, the other one can pick up the load. For example, Turkey Point nuclear power plant has four large diesel generators for two reactors. Any one of the generators can be used for emergency power to the reactor core cooling systems of both reactors. In addition, there are other systems available at our nuclear power plants that can provide power to the cooling pumps. Also, there are multiple (redundant) core cooling "pumps and water system pipes" available. In the event that there is a loss of the offsite power supply or the loss of the ability to generate power for either of the plant's back up power systems, the nuclear power generation system automatically trips and the system is taken offline.