

Safety at NextEra Energy Nuclear Fleet Plants



NextEra Energy’s nuclear plants are specifically designed to safely shut down and withstand significant natural disasters, including earthquakes, storm surges and flooding, without losing the capability to perform all safety functions.

- » The U.S. Nuclear Regulatory Commission (NRC) requires all nuclear power plants to be able to withstand the most severe natural phenomena historically reported within a 200-mile radius of a plant.
- » All of NextEra Energy’s nuclear power plants are outside of known “high hazard” earthquake zones (as defined by the U. S. Geological Survey and the U.S. Nuclear Regulatory Commission).
- » Because our plants are not in high-hazard zones, the risk of a tsunami in our operational areas is very remote.
- » Even though an event like the recent Japanese earthquake is unlikely, all NextEra Energy plants have built-in safety margins that exceed the “worst-case” design requirements for our units. We plan for the extraordinary.
- » All of NextEra Energy’s plants have extremely sensitive seismic monitoring equipment specifically designed to detect even the smallest ground movement, and we are well aware of natural conditions around our plants at all times.

As compared to the Japanese plants, NextEra Energy nuclear plants have additional safety systems, and more extensive backup power capabilities.

- » All U.S. nuclear plants are based on a “defense in depth” design, with multiple physical barriers and backup safety systems to ensure operation in even the most extreme environment.
- » All of NextEra Energy’s plants have emergency core cooling systems that are protected from severe weather events, including water incursion and flooding.
- » Plants are also equipped with multiple back-up power supplies, including diesel generators, back-up batteries, an independent steam-driven cooling system, and a separate Supplemental Emergency Power System.

The NextEra Energy Nuclear Fleet consists of eight units at five locations:

- » Duane Arnold Energy Center in Palo, Iowa (1 unit)
- » Point Beach Nuclear Power Plant in Two Creeks, Wisconsin (2 units)
- » St. Lucie Nuclear Power Plant in Jensen Beach, Florida (2 units)
- » Seabrook Station Nuclear Power Plant in Seabrook, New Hampshire (1 unit)
- » Turkey Point Nuclear Power Plant in Florida City, Florida (2 units)

Along with redundant systems, processes and procedures, our plants plan and practice for extraordinary events that go beyond likely "worst-case" scenarios.

- » All nuclear power plants are designed for and have emergency operating procedures to address worst-case scenarios, including earthquakes and loss of all onsite and offsite power.
- » The procedures used in emergencies are part of plant operator training. Plant operators are required to undergo knowledge and performance testing one week out of every six weeks, all year long. That training involves the use of real-life testing on a plant simulator.
- » For conditions warranting public evacuation, dedicated communications systems linking emergency operations centers are in place; public alert systems (sirens) are in place; and, local emergency facilities that are staffed by state and local government emergency response agencies would be fully manned.
- » The plant emergency response is tested several times a year via emergency drills involving both onsite and offsite emergency response teams.
- » Similar natural emergency conditions are routinely exercised by reactor operators and emergency response agencies.

NextEra Energy Nuclear Fleet units have demonstrated the effectiveness of plant design, equipment, systems and training during several weather events.

- » Turkey Point withstood the direct hit of Category 5 Hurricane Andrew in 1992.
- » St. Lucie withstood two hurricanes in rapid succession in 2004.
- » Duane Arnold withstood record flooding in 2008.

As a result of the emergency situation in Japan, NextEra Energy nuclear sites, along with the entire U.S. nuclear industry, have already committed to the following actions:

- » Re-assessing the severe accident mitigation plans and commitments already in place to validate each unit's ability to respond to possible accident events resulting from extreme external events.
- » Reviewing station response capabilities to validate the effectiveness of procedures, equipment and capabilities in the case of total power loss.
- » Evaluating flooding readiness, including both internal and external flooding sources.
- » Conducting detailed assessments to verify equipment readiness for any possible seismic events.

For More Information:

- www.nei.org
- www.nrc.gov
- www.radiationanswers.org
- www.epa.gov