Nuclear plants watch wind levels as storm advances

JOSH LEDERMAN - Associated Press - Associated Press

Federal regulators and safety officials at nuclear power plants along the Eastern Seaboard were keeping a watchful eye on wind and water levels, preparing to shut plants down should Hurricane Sandy send levels surging.

Still, by late afternoon Monday, with the superstorm dashing toward New Jersey with winds at 90 mph, no plants had been taken offline.

The U.S. agency that oversees nuclear safety, its own headquarters and Northeast regional office shuttered by the storm, dispatched extra inspectors to plants in five states, equipped with satellite phones to ensure uninterrupted contact.

Nuclear power plants are built to withstand hurricanes, airplane collisions and other major disasters, but safety procedures call for plants to be shut down when hurricane-force winds are present at the site, or if water levels nearby exceed certain flood limits.

At the Salem and Hope Creek plants in Hancocks Bridge, N.J., which together produce enough power for about 3 million homes per day, officials were watching for sustained winds of 74 mph or greater that would trigger taking the plants offline. The nearby Delaware River posed another hazard if water levels exceed 99.5 feet, compared with a normal level of 89 feet.

Joe Delmar, a spokesman for Public Service Enterprise Group Inc., said that only essential employees had been asked to report to work but that current projections were that the plants would not have to close.

One of the units at Salem had already been offline due to regular refueling and maintenance. That was also the case at Oyster Creek, a 636-megawatt plant in Lacey Township, N.J., roughly 60 miles east of Philadelphia.

In Lusby, Md., the Calvert Cliffs Nuclear Power Plant was operating at full power — enough to power more than 1 million homes. Additional staff, both onsite and off, were called in to prepare for the storm. Safety officials there will take the plant offline if sustained winds exceed 75 mph or water levels rise more than 10 feet above normal sea level.

Seventy-five was also the number at Indian Point in Buchanan, N.Y., where officials said they were fully prepared to withstand surging water levels from the Hudson River. At Pennsylvania's Susquehanna in Salem Township, officials were ready to activate their emergency plan, a precursor to taking the plant offline, if sustained winds hit 80 mph.

"Our top concern is ensuring that the plants are in a safe condition, that they are following their severe weather procedures" said Diane Screnci of the Nuclear Regulatory Commission. She said that even though the agency's headquarters and regional office had been closed, its incident response center was staffed, with other regions ready to lend a hand if necessary.

At the Millstone nuclear power complex on Connecticut's shoreline, officials said they were powering down one of the two reactors to 75 percent of maximum output to maintain stability of the electric grid. Millstone spokesman Ken Holt said the grid's stability could be affected if the unit was operating at 100 percent and suddenly went offline, which isn't expected to happen.

Some 60 million people in 13 states plus the District of Columbia get their power from PJM, the largest regional power grid in the U.S. Contingency plans call for power to be brought in from other areas to replace power lost if a nuclear plant reduces output or goes offline.

"It's done instantaneously," said Paula DuPont-Kidd, a spokeswoman for the grid. "Even if multiple plants go offline at the same time, we'd have to see how adjustments would be made, but for the most part we plan for that scenario."

In August 2011, multiple nuclear plants shut down due to Hurricane Irene, with others reducing power.

Although nuclear plants are built for resilience, their operations get more complicated when only emergency personnel are on duty or if external electricity gets knocked out, as often happens during hurricanes.

"When external power is not available, you have to use standby generators," said Sudarshan Loyalka, who teaches nuclear engineering at University of Missouri. "You just don't want to rely on back-up power."

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