

## Energy Matters

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### [Nuclear Plants Brace for Rising Wind and Water](#)

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By Roger Witherspoon

Eleven nuclear power plants in the direct path of Hurricane Sandy – including all four in New Jersey – are on special alert status with additional federal monitors and plans to shut down if the winds or waves exceed safe storm limits.

The Nuclear Regulatory Commission dispatched extra monitors this past week end to augment the two full-time resident inspectors at each plant to ensure that proper procedures are followed as the storm roars through the region and its impacts are felt.

“To ensure that lines of communications are maintained, the on-site inspectors are equipped with satellite phones,” said the NRC in a statement this morning. “The NRC will continue to track Hurricane Sandy using the resources of all federal agencies and several weather forecasting services.”

The nuclear plants in the path of the storm receiving added NRC attention are Calvert Cliffs in Lusby, Md.; Salem and Hope Creek, in Hancocks Bridge, N.J.; Oyster Creek, in Lacey Township, N.J.; Peach Bottom, in Delta, Pa.; Three Mile Island 1, in Middletown, Pa.; Susquehanna, in Salem Township, Pa.; Indian Point 1&2 in Buchanan, N.Y.; and Millstone, in Waterford, Conn.

NRC spokesman Neil Sheehan said in an interview that “all of the plants have criteria where they have to shut down were they to see winds at a certain level or high water past a certain level. And these vary from site to site.

“At Indian Point 2 and 3, the criteria are they have to notify us if there is a hurricane warning with winds in excess of 87 knots, or 100 Miles Per Hour, within 320 miles of the facility, and shut if it is within five nautical miles of the facility.”

Sheehan said Indian Point would have to declare an “unusual event,” the lowest alarm level, if the

Hudson River rose 14.5 feet above normal, and an “alert” if it rose more than 15 feet.”

While both Indian Point 2 and 3 are up and running, the picture is different in New Jersey. Salem 1 and Hope Creek are full power while Salem 2 and Oyster Creek are shut for refueling and maintenance. Joe Delmar, spokesman for PSEG Nuclear, said refueling operations were suspended Sunday at 6 PM and unnecessary workers were sent home.

The criteria for shutting down New Jersey’s plants are lower than those for Indian Point, which is on the Hudson River and sheltered in the Hudson River Valley. “We are required to shut down operations when there are sustained winds of 74 miles per hour for 15 minutes or more,” Delmar said.

“With regards to the Delaware River, we have to shut down if the river reaches 99.5 feet in depth. It is normally 89 feet at high tide, and our design basis is 120 feet, a level that would be reached during a Category 4 hurricane. The Delaware River level at high tide at 11:30 this morning was 93 feet.”

Salem and Indian Point, which use the adjacent rivers to provide billions of gallons of water daily to cool their generating system, also face issues as flood waters recede.

“You can imagine the amount of debris in the river as a result of flooding,” said the NRC’s Sheehan. “At Indian point 3 they had issues with debris that they had to watch for. There were tree trunks, leaves, and other large debris at the intake pipes.”

The plants have procedures to follow in cases of a “station blackout” in which the regional power grid is down and there is no offsite power. “Their first line of defense is their emergency diesels,” said Sheehan, “and they would have topped off all their tanks and tried them as a test to make sure they were ready to go if needed.”

In New Jersey, PSEG has an advantage in that two of the four nuclear plants are currently shut down for refueling. Hope Creek has four diesel generators, and only needs one of them operating to run its safety systems for a week. At Salem 1 & 2, each plant has three diesel generators, and there is enough fuel on hand to serve each generator for a week, said Delmar. “We have to test diesels on a routine basis.”