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Report says Indian Point, New York area at risk

By Abby Luby

New research reveals that not one, but two seismic faults run beneath the Indian Point Nuclear Power Plants in Buchanan.

The recent report by Columbia University's Lamont-Doherty Earth Observatory says that a previously unknown seismic zone runs from Stamford, Connecticut to Peekskill, passing less than a mile north of the Indian Point nuclear power plants. The fault line intersects with the Ramapo seismic zone that runs from eastern Pennsylvania to the mid-Hudson Valley, which is within a mile or two northwest of Indian Point.

The main author of the report is Columbia's Professor Emeritus Dr. Lynn Sykes, a nationally known expert on seismology. Sykes said the findings came from using modern seismic instruments yielding sophisticated analysis on past quakes and 34 years of new data on tremors.

"There is quite a bit of activity around Indian Point, as far down as 10 miles below the surface," he said. "We recorded small earthquakes less than magnitude 3, which we have in this area about every four years. We had a magnitude 5 earthquake in 1884. Our study shows that the likelihood of a magnitude 5 earthquake is about every 100 years."

Jim Steets, spokesperson for Entergy, which owns the twin reactors at Indian Point, said the plants were built to withstand a seismic event with a magnitude 7 on the Mercalli Scale.

"That was built into all of the safety related equipment which requires seismic protection," he said.

The report says that it's not the magnitude of a possible earthquake under Indian Point, it's how the resulting seismic gravitational acceleration will make the plant move and shake.

"Indian Point units 2 and 3 were designed for 15 percent gravitational acceleration," said Sykes. "Our report estimates a 20 percent gravitational acceleration for seismic activity specifically under Indian Point."

Sykes added that the reactors would shake even if a seismic event was as deep as 10 miles down.

"The information about gravitational acceleration is a big deal," said Dan Hirsch, president of Committee to Bridge the Gap, a California based group studying that state's numerous earthquake activity and their affects nuclear power plants. "What you worry about is not so much the magnitude but the gravitational acceleration and how quickly the ground moves where the reactor is," explained Hirsch. "These reactors are generally designed for low gravitation acceleration, or "g" forces. If indeed the new evidence indicates that the new fault structure can produce ground acceleration significantly higher than this reactor was designed to withstand, it is a potentially very dangerous situation."

Massive shaking of the reactors could rupture the coolant pipes which would overheat the radioactive fuel causing it to melt (known as a meltdown) and releasing massive quantities of radioactivity to surrounding areas.

Steets said that the plants were designed with what's known as "snubbers" to protect the reactor against movement after an earthquake.

"These are like large shock absorbers that will buffer against any possible movement," he said. "Also the plant's steel re-enforced concrete protects the equipment."

Hirsch recalled that the twin reactors built in the 1960's in Diablo Canyon ended up being retrofitted after fault lines were discovered after the plant had already been constructed.

"They spent about \$5 billion adding pipe supports and restraints. The rate payers are still paying for it."

Neil Sheehan of the Nuclear Regulatory Commission, the federal oversight agency for the nuclear industry, said that although the agency already knew about the second fault line, they would be reviewing new seismic report.

“This is really a reinterpretation of information already known to the NRC staff,” he said. “Seismic issues are considered when plants are first built. We don’t take a fresh look at them unless new and significant information comes to light.”

Sheehan also said that the NRC doesn’t revisit seismology issues in the license renewal process. Entergy has applied to the NRC for two new operating licenses for units 2 and 3. The current licenses expire in 2013 and 2015.

Contentions filed against the license renewal because of the fault lines were rejected by the NRC licensing review board, said Sheehan.

Susan Shapiro, a Rockland based attorney who filed contentions against the re-licensing application said the seismic report is just the kind of new information the NRC should consider.

”This is a new, superseding license application and the NRC is being negligent in not considering the new study. It must be considered. They are not following their own regulations.”

A 2001 analysis by the Federal Emergency Management Agency ranks New York the 11th most at-risk U.S. city for earthquake damage. The analysis is based on the state’s history, population density and fragile, interdependent infrastructure.