



ENERGY ISSUES

Quake Raises Red Flags for Indian Point, Nukes



By **ABBY LUBY**

Even though last Tuesday's 5.8 magnitude earthquake in central Virginia was almost 400 miles away, we felt it. From Ontario, Canada to Alabama, buildings shook, the ground vibrated and for many, it was a moment of fear. Fortunately there was no damage and no one was hurt.

The earthquake was also felt here in Westchester and at the Indian Point Nuclear Power Plants in Buchanan. The plant briefly operated in "Abnormal Operating Procedure" while checking for damages. Service was not interrupted and Entergy, the plant's owner, reported that the plant was unaffected by the seismic activity.

Nuclear Regulatory Commission (NRC) inspectors were also checking various areas at the plant.

"At Indian Point, plant workers walked down systems to assure there was no damage. NRC inspectors assured they were following their procedures," said Diane Scenci, Sr. Public Affairs Officer for the NRC.

The quake was one of the biggest to hit the east coast since 1897, according to the U.S. Geological Survey. The epicenter was near Mineral, Virginia, and as soon as it hit, the nuclear reactors at the North Anna Power Station, less than 20 miles away, were shut down. (They were up and running 24 hours later).

The 30-year-old North Anna plant sits on an earthquake fault as do the 40-year-old twin reactors at Indian Point. The Buchanan plants however are over an intersection of two major earthquake belts; one runs from Putnam and Westchester to New York City and the other is the Ramapo seismic zone that runs from eastern Pennsylvania to the mid-Hudson Valley. In the heightened aftermath of the Fukushima earthquake and tsunami disaster in March 2011, where four nuclear reactors were toppled and subsequent core melt downs in three of the four plants, last week's Virginia quake has spiked growing concerns about the vulnerability of aging nuclear reactors to natural disasters.

Systems at Indian Point that are particularly hard to inspect include underground pipes, wires and cables, many of which are expected to be corroded and vulnerable to tremors or vibrations. For years, Entergy has monitored leaks at Indian Point caused by cracks in the spent fuel pools. Would the cracks have widened from last week's quake?

"It would be quite easy to tell," said Arnie Gundersen, a former nuclear industry senior vice president and now chief engineer at Fairewinds Associates Nuclear.

"They [Entergy] could see if the leak collection system picked up anything after this earthquake. It's reasonable to go down and look to see if more water was coming out than had in the past." Gundersen



Indian Point Nuclear Power Plant. Photo by and courtesy of Abby Luby.

added that because the pool in Unit 3 has a steel liner, leaks could be checked in the corners of the pool where there is a gap.

"There is no damage at either unit," Entergy spokesperson Jerry Nappi stated in an email. Nappi didn't address the issue of the spent fuel pool cracks.

Scenci said the NRC wasn't planning any special inspections at Indian Point in response to last week's earthquake. "The agency is deciding on the appropriate inspection to conduct at North Anna. Once a decision is made, we'll announce it."

Entergy has applied to the NRC for two new operating licenses for Units 1 and 2, to run for another 20 years. New York Attorney General Eric Schneiderman has scrutinized the NRC's re-licensing process for not considering seismic risk as part of nuclear power plant's re-licensing application. Numerous contentions filed have made Entergy's application one of the longest on record with the NRC.

The Virginia earthquake reinforces the message from area geologists and seismologists who have stressed that the east coast is as susceptible to earthquakes as the west coast. Leonardo Seeber, a leading seismologist and senior researcher at Columbia University's Lamont-Doherty Earth Observatory said that the Virginia earthquake will teach us more about potential seismic activity in the New York City area.

"We can learn more about what faults are causing these earthquakes and which ones are moving. It's interesting to see what these faults are doing on the east coast regarding future earthquakes."

Seeber, who co-authored a seminal study in 2008 that mapped historical seismic activity in the New York City region, said that seismic waves travel great distances. "You could have structures that resonate when waves are amplified locally."

The 2008 Columbia University study also discovered seismic activity around Indian Point in the form of small earthquakes less than magnitude of 3, as far down as 10 miles below the surface.

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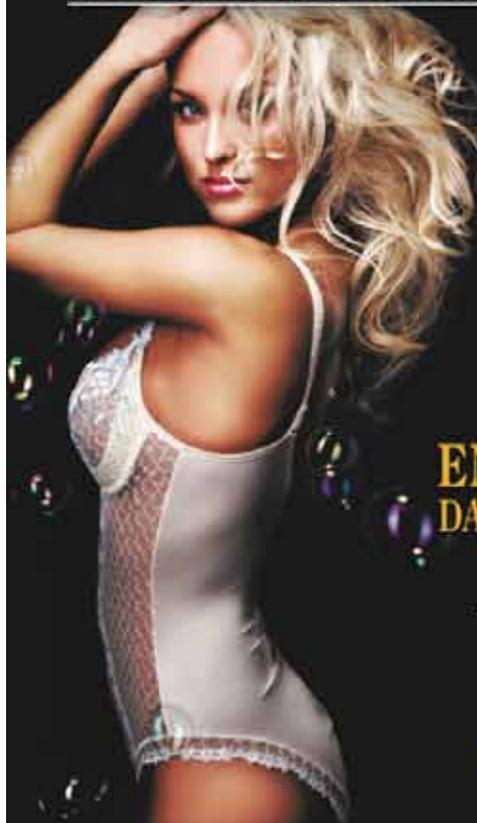
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An earthquake with the magnitude of 5 seems to happen every 100 years, said the report. The last one of that magnitude was in 1884.

According to the NRC, Indian Point would be able to withstand a 5.2 earthquake. They also state that Indian Point has the highest risk of catastrophic failure due to an earthquake out of all the 104 nuclear reactors in the United States. The catastrophic events at the Fukushima reactors put the NRC on the

hot seat. After the Japanese disaster, President Obama mandated that the agency form a task force to address safety threats at the country's nuclear power plants and to recommend changes to existing regulations. Screnci said that the NRC has been examining updated seismic models and information for Eastern and Central U.S. nuclear power plants for the past few years.

"The project is called Generic Issue 199 (GI-199). The staff continues to conclude the plants can safely withstand earthquakes at

their sites. Currently operating nuclear plants in the US remain safe, with no need for immediate action." Screnci added that although there is no immediate safety concern, "the NRC has determined that assessment of updated seismic hazards and plant performance should continue. Staff efforts in this area are continuing."

Irwin Redlener, director of the National Center for Disaster Preparedness at Columbia University's Mailman School of Public Health, said the Virginia earthquake should serve as a warning. "Although 80 million Americans live in communities that have the potential to

be seismically active, it's been very difficult to get public officials to think beyond the west coast when it comes to earthquake risks. This should be a jolt to get more focused on risk other than coastal hurricanes and terrorism. We can't afford not to plan appropriately for these types of disasters accordingly."

Abby Luby is a Westchester based, freelance journalist who writes local news, about environmental issues, art, entertainment and food. Her debut novel, "Nuclear Romance" will be out in September. visit the book's website, <http://nuclearromance.wordpress.com/>

HISTORY

Carve Their Names with Pride: Three Women Called Molly



By **ROBERT SCOTT**

Every war produces its share of heroes. The American Revolution, the most desperate of our conflicts, was unusual because many brave women participated alongside their men and even took an active part in battle.

Controversy still rages today about the

role of women in combat. It is perhaps fitting to examine the lives of three women and their spontaneous heroism more than two centuries ago. Without such sacrifices, this nation might not have been created. Two were army wives who became impromptu cannoners. The third masqueraded as a man and fought as a soldier. All were dubbed "Molly," then a popular diminutive of Mary.

Margaret Corbin

The first American woman to shed her blood in defense of this country, Margaret Corbin was born in 1751, the only daughter of Robert Cochran, a Scots-Irish settler in western Pennsylvania. When she was five years old, her father was killed by Indians, and her mother was carried off into captivity. Fortunately, Margaret was with relatives at

the time.

In 1772, she married John Corbin, a Virginian, who joined the Continental Army as a gunner's assistant in the First Pennsylvania Regiment of Artillery. His wife accompanied the unit as nurse and camp assistant. After watching her husband at his work, Molly Corbin soon became as familiar with the sequence of loading, firing and sponging a cannon as any artilleryman.

John Corbin was killed in 1776 while manning a small cannon in a northern outpost of Fort Washington in upper

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