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More Information needed on Indian Point's cable system

By Abby Luby

The Nuclear Regulatory Commission wants more information from Entergy, owner of the Indian Point nuclear power plants, about various cable systems at the facility.

In a Safety Evaluation Report just issued, the NRC said it was concerned about cables that were submerged under water.

“We have opened up manholes and have seen water that’s impacting these cables,” said Neil Sheehan, spokesperson for the NRC. “We want to know how Entergy will address moisture impacting cables especially if they are part of any of the safety systems.”

The report was part of other informational requests needed by the NRC to renew the operating license for Indian Point.

Nuclear power plants need expansive cable networks to operate. Cables are the necessary infrastructure that transmits electricity to and from the plant, and are integral to security and communications.

In February of 2007 the NRC asked Entergy to report on failures of certain underground cables.

“We focused in on a specific issue with underground cables,” said Sheehan, adding that all nuclear power plants in the U.S. were asked about their underground cables.

The NRC request was prompted by two incidents in 2003 where buried cables for key systems had failed to function; one was at the Oyster Creek nuclear facility in New Jersey, the other at the Palisades Nuclear Plant in Michigan. At Oyster Creek buried cables for an emergency diesel generator failed because the insulation rotted from being submerged in water. At Palisades a buried cable failed because of premature aging.

Entergy responded to the NRC in May, 2007 citing the failure of only two buried cables – one in 1994 and the other in 2005. One cable was 19 years old and had “experienced catastrophic failure during operation.” The other was 30 years old whose condition was classified as “degraded.”

More than a year later, in October 2008, NRC project manager John Boska sent a letter to Entergy acknowledging their response, saying the issue was closed and “no further action is requested at this time.”

Dave Lochbaum of the Union of Concerned Scientists, a Washington D.C. watchdog group for the nuclear industry, said the NRC’s questions about underground cables were too narrow.

“The proper question would have been whether any one has cables routed in environments harsher than assumed in aging analyses,” said Lochbaum. “That could include cables buried underground as well as cables routed inside buildings where temperatures might be higher than assumed.”

Cable systems that sprawl under 239 acres where Indian Point sits is hard to quantify said Indian Point’s on-site NRC inspector Paul Cataldo. “It’s hard to say how much cable there is. We look at it in terms of voltage.”

High voltage transmission cables at Indian Point carry up to 138,000 volts. Some of these are electrical feeder cables that supply electricity from the grid for the plant’s day-to-day operation. Cables transmitting electricity to the power grid carry about 345,000 volts.

“Picture your electrical box at home,” said Cataldo. “Electricity comes in and out of the plant with junctions and breakers that operate certain equipment like gears, pumps and valves.”

The inability to monitor cable systems at Indian Point is a major issue with New York State Attorney General Andrew Cuomo, who filed a 206-page contention document last February opposing Entergy’s re-licensing application to keep the plants running for an additional 20 years. Indian Point Unit 2 and 3 operating licenses expires in 2013 and 2015 respectively.

The attorney general attacked Entergy’s plan to check cables’ insulation once every 10 years and for checking for water accumulation where cables are housed every two years. According to Cuomo, Entergy’s license renewal application omitted “a copy of the actual aging management plan for inaccessible Medium Voltage Cables.”

In their application Entergy said they will come up with a monitoring program just before they get their license renewed. Cuomo found that unacceptable and cited age-related problems of degraded cables that “could threaten the capability to safely shut down the reactor and maintain it in a safe shutdown condition” and “lead to the loss of required plant functions.”

Sheehan said the license renewal application looks at aging management [of cables] more broadly.

“We will be asking what Entergy is doing to protect cables for an additional 20 years.”

Entergy’s application stated that a management program monitoring certain types of cables wasn’t required, prompting the NRC, in a May letter, to ask Entergy for an explanation for not requiring a monitoring program. They also asked what types of cable testing the utility company has been running.

Although Entergy spokesperson Jerry Nappi declined to comment on Entergy’s current cable monitoring plan, NRC’s Cataldo did say that cable inspections are performed periodically.

“The cables are in manholes and we go in and do physical checks. There are connections to the control room where meters measure appropriate voltage and there is surveillance of breakers.”

The issue of underground cables has consistently come up at local public meetings for they are part of the license renewal process. Gary Shaw, a resident of Croton said he has asked repeatedly how underground pipes, many of which house cables, are examined.

“I have specifically asked the NRC how many linear feet of pipe are inaccessible. What about the of 35-year old welds that have been exposed to corrosive salt water? How are they going to determine their viability for another 20 years?”