

RECORD REVIEW

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Nuke leaks taint Hudson

By ABBY LUBY

The Nuclear Regulatory Commission suspects that an uncontrolled release of tritium is going into the Hudson River. The leak was found near the discharge canal at the Indian Point nuclear power plant, situated on the east bank of the river. Also last week, a monitoring well was leaking small amounts of strontium 90, considered a more dangerous radioactive isotope, but the amount leaked was not enough to pose a threat to public health, said officials.

NRC spokesman Neil Sheehan said that the tritium leak indicates a migration under the discharge canal and into the river. "The conjecture is that it's possible it [tritium] would be flowing to the river, and regardless of the amount involved, it's considered an uncontrolled release."

According to an NRC report, water was sampled in mid-February from the same well that had the highest concentration of tritium levels at 600,000 picocuries per liter of water, 30 times the Environmental Protection Agency (EPA) drinking water limit of 20,000 picocuries per liter. That sample also showed a small amount of strontium 90, measured to be about 3 picocuries per liter. The EPA drinking water limit for strontium 90 is 8 picocuries per liter. At high levels, strontium 90 and tritium are cancer-causing agents. Officials first learned about the leaks in a local news publication. Westchester County Executive Andrew Spano called a special meeting last week with the NRC and plant owner Entergy on whether the public is being informed about possible health threats from the plant in a timely fashion. At the meeting were Congresswomen Nita Lowey (D-18) and Sue Kelly (R-19), who called for an independent safety assessment at the plants. "I worked with Nita Lowey, Eliot Engel [D-17], and Maurice Hinchey [D-22], to do this report," said Mrs. Kelly this week. "I went into the plant in January, and I got the NRC to consider what was happening. In February I formally requested the NRC to conduct this assessment."

Mrs. Kelly said that it was important to get independent assessors in the plant. "The NRC is there all the time, 24/7, and those people see the same things," she said. "They may not see what a pair of fresh eyes would see."

According to a press release from Senator Hillary Rodham Clinton, at her request, NRC chairman Nils Diaz intends to do a safety review of the plant sometime in 2007. The review will look at the overall operation, design, maintenance, and safety of the plant. "There have been enough independent studies to close that plant twice," said Assemblyman Richard Brodsky (D-Greenburgh), who is running for state attorney general. "There are no independent studies. Most of the researchers are from these large think tanks and are somehow related to the nuclear industry."

Tritium and strontium are two particularly dangerous substances, said Mr. Brodsky. "Both are absorbed by the human body," he said. "You couldn't ask for two worse kinds

of radioactive material. The problem here is that every time you have one of these leaks, they minimize it and they tell you it will never happen again.”

Since August, officials at the Indian Point nuclear power plant have been trying to find the source of leaking tritium near the spent-fuel pool at Indian Point 2. Several more wells were dug to determine how much radioactive water was underground. According to Mr. Sheehan, Entergy has dug 19 wells, and he expects them to dig an additional 14. In early March, the environmental watchdog group Riverkeeper, which monitors the Hudson River, area reservoirs, and aquifers, sought more information about the leaks. Under New York State’s Freedom of Information Law, documents obtained by Riverkeeper indicated that both the State Department of Health (DOH) and the State Department of Environmental Conservation (DEC) knew of the strontium and tritium leaks since December.

According to an e-mail from DEC spokesperson Gabrielle DeMarco, the DEC “became involved in this matter at the request of the counties and will continue to provide them and other stakeholders with accurate information throughout the process.”

Ms. DeMarco said that the “DEC holds no regulatory authority in this matter ... and under the Federal Atomic Energy Act monitoring of radioactive discharges from reactors is handled by the federal Nuclear Regulatory Commission.”

There are no discharge limits for radioactive materials in Indian Point's State Pollutant Discharge Elimination System (SPDES) permit with the DEC, explained Ms. DeMarco in her e-mail.

According to Mr. Sheehan, strontium 90 released in liquid form into the Hudson River in 2004 was a total of 17.4 millicuries. “The total dosage resulting from that would have been .003 millirems to the whole body and .01 millirems to any organ for any member of the public who was in the river for the entire year,” said Mr. Sheehan. “In other words, the amounts released were a fraction of the allowable limits.”

Dan Hirsch of the Committee to Bridge the Gap, a group that studies the effects of radiation, said that the EPA and the NRC have different limits for water. “The EPA limits are stricter and are the ones that legally apply,” he said. “The NRC’s dosage numbers are much higher than the EPA safe drinking water levels, and it sounds like they [the NRC] are giving out a theoretical calculated dose and trying to say that the dose is trivial.”

Exposure to drinking water is a major concern, according to Riverkeeper policy analyst Phillip Musegaas, who said they are looking at the possibility of several radioactive isotopes, including tritium, cobalt, and cesium, getting into the aquifer or the sediment under the river.

Detecting the radioactive isotopes in the water that travels through hairline fractures in the dense bedrock under the Indian Point plant is complicated, said Dr. Martin Stute, a specialist in isotope hydrology at Barnard College and the Lamont Doherty Research Lab. “In fractured rock you really don’t know if the entire flow of radiated water is through one fracture or if it is connected to other fractures,” he said. “It’s difficult to track anything with bedrock fractures.”

The fractured bedrock, which is believed to be caused from construction blasting decades ago under the plant, is also impacted by being over part of the Ramapo Fault — an earthquake system covering southeast New York, said Dr. Stute. “In areas subject to earthquakes over long periods of time you can assume the rocks are more fractured,” he said.

Dr. Stute, whose research involves measuring tritium and strontium 90 with the element helium 3, said it's also difficult to determine the size of fractures.

"In wide fractures the water is rushing rapidly and could move for miles in a year or so, and contaminants can spread very rapidly," he said. "It's important to test the drinking water wells in the area for contaminants."

Mr. Sheehan said that an "off-site characterization program" was started after tritium was found in the wells in August and that test groundwater wells have been drilled in and around Buchanan, where the plant is located. "We do license Indian Point, and we are concerned with off-site contamination," he said. "There's been no indication to date of any off-site contamination."

Mr. Sheehan said that off-site locations that have been sampled for contamination from Indian Point include the Algonquin site, the Gypsum Plant, and the Trap Rock Quarry, all of which are within a few miles of Indian Point. "Thus far, all the samples taken indicate no detectable radioactive contamination," he said.

To date, the NRC has had no reason to impose penalties on plant owner Entergy because according to Mr. Sheehan there haven't been any violations. "If there was a violation as far as exceeding the allowable limits, it's certainly something we would look at," he said. "But there are no set penalties. We look at each event on a case-by-case basis."

Should the plant remain open while groundwater testing and safety studies are being done?

"The plant needs to be operating," said Mrs. Kelly, "If they shut down, then they don't know how the thing is operating. Also we need the electricity."

"Mrs. Kelly is misinforming the public," said Mr. Brodsky. "We have more than sufficient power without the plant. Running Indian Point is more expensive, and it's dangerous. The plant should be permanently shut down."

The NRC will be holding a public meeting addressing the recent leaks on Tuesday, March 28, at 6:30 at the Crystal Bay restaurant in Peekskill.