Trouble on the Water

Xcel Energy owns the Monticello nuclear reactor on the Mississippi River, 40 miles upstream of Minneapolis. This 54-year-old General Electric reactor, one of the three oldest in the country, was originally designed and built to last 40 years. It should have been decommissioned in 2010.

On Nov. 22, 2022, Xcel reported to the Nuclear Regulatory Commission (NRC) that radioactivity was found in groundwater from an onsite monitoring well. Xcel’s notice said nothing about the leak’s volume, its source, or its level of radioactivity, but it did claim without evidence that, “There was no impact on the health of the safety or the public plant personnel.” The public was not informed of this “harmless” radioactive pollution until March 2023, four months later. Xcel then said that 400,000 gallons contaminated with radioactive tritium had leaked from underground pipes into the groundwater.

The company said the concentration of tritium in its leakage was “five million picocuries-per-liter,” a very high concentration at the level of primary reactor coolant. Very few tritium leaks from U.S. nuclear reactors had more tritium per liter.

At 400,000 gallons (1,761,953 liters), with five million picocuries of tritium per liter, the leak contained roughly eight curies of radioactivity. This is no small matter. The partial reactor meltdown at Three Mile Island, one of the worst in U.S. history, released 14 curies of radioactive iodine-131. As noted below, 14 curies of tritium is now Xcel’s latest radioactive pollution estimate.

This tritium is a direct threat to the Mississippi River and the people and animals that rely on it, because, as the NRC says: “After a radioactive leak or spill … tritium travels as a form of water through the soil faster than other radionuclides.”

Leak Estimate Doubled

On Dec. 18, 2023, Xcel reported to the NRC that its first leak estimate was grossly in error. Xcel now estimates that 829,000 gallons of radioactive water has leaked into the ground — not 400,000. Xcel also reported the leaking started earlier than originally thought. Xcel noted that its estimate of radioactivity leaked into the groundwater is now 14 curies.

In a May 10, 2023 letter to the NRC, Xcel also confirmed that more radioactive materials than tritium were in the 829,000-gallon leak. Xcel wrote that samples from Monticello’s laboratory “detected iodine-131, iodine-133, iodine-135, xenon-133, and xenon-135 in [monitoring well-9a].”

Uninspected 54-year-old, Corroded Pipes Leak

The wastewater leaked from two old underground pipes between the reactor building and the turbine building, which were later replaced. The company announced in March 2023 that the leak had been stopped. Later, it admitted that the fix failed when a collection system overflowed, dumping tritium-contaminated water into the ground again.

In a Nov. 9, 2023 letter to the NRC, Xcel reported that “The visual examination of the removed [carbon steel] piping sections showed that both of the CBD control rod drive] pipes experienced severe corrosion of the external surfaces in the regions exposed to the ground water present between the buildings” and “both CBD pipes … were replaced with uncoated stainless-steel piping.”

The same letter reports on Xcel’s plans for inspecting thousands of Monticello’s other underground pipes. Xcel says it “will inspect the underground stainless-steel piping once … every 10 years.”

In January 2023, two months after the original leak, Xcel applied to the NRC for an operating license extension to run Monticello until it is 80, even though the company would wait another two months before notifying the public of this pollution catastrophe and 12 months before reporting the true volume of the spill. This GE Mark I reactor is identical to the three melted and exploded Fukushima units in Japan. With Xcel’s stellar record of never endangering anyone’s health and safety, the NRC ought to rubber stamp the application, right? — JML

Leaked Tritium in Mississippi River Water?

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acknowledged that the radioactive pollution can reach the Mississippi. The AP reported: “Even if the tritium reached the river, which Clark assured wouldn’t happen, it would dissipate within a few yards.” Clark’s assurance is either a mistake or a deliberate fib, because “dissipate” means to disappear or vanish. However, tritium contamination in water lasts 123 years.

Further, there is no way to remove tritium from water once it’s contaminated — as the 1.5 million tons of tritiated wastewater being pumped into the Pacific Ocean from the three- reactor-quake/sunami/meltdown site at Fukushima proves.

Why is Xcel’s tritium in the groundwater and the Great River such a threat to the people and animals that rely on it? As the NRC says, “This is because tritium travels as a form of water through the soil faster than other radionuclides.” The city of Minneapolis proudly declares, “Our water comes from the Mississippi River. Roughly 21 billion gallons of water are pumped from the river each year, and 57 million gallons of drinking water delivered every day.”

We can’t say, “There’s nothing we can do.”

Everyone can comment to the government regarding the risks posed by Monticello’s operations, when Xcel issues (this spring) its draft supplemental environmental impact statement (DSEIS) regarding the firm’s request to extend its license and run the 54-year-old reactor until 2050, when it will turn 80.

The comment period will last four to six weeks and open after the DSEIS is released. Check Nukewatch’s website to learn when the period has opened. Use one of Nukewatch’s sample comments or your own. Plan to make your voice heard in person once the NRC schedules a public hearing on the license extension. nukewatchinfo.org/monticello.


Legend - The Nuclear Regulatory Commission defines two emergency planning zones around nuclear reactors: a “plume exposure pathway zone” with a radius of 10 miles (dark yellow circle), concerned primarily with exposure to, and inhalation of, airborne radioactive contamination; and an “ingestion pathway zone” of about 50 miles (pale yellow circle), concerned primarily with ingestion of food and liquid contaminated by radioactivity. Numbers and red circles indicate approximate county population at risk. Arrows indicate wind direction.