Fix to stop leak at Xcel's nuclear plant Minnesota did not work, prompting shutdown

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Xcel Energy started shutting down its Monticello nuclear power plant Friday after the company's repair of a leaking pipe did not fully do the job—causing more radioactive water to seep into the ground.

Xcel officials said they plan to do a full analysis of why the pipe sprang a leak once the utility completes the shutdown, which will take a couple of days.

Groundwater well testing at the plant Wednesday indicated that a tritium leak into groundwater, first reported last week, had restarted, Christopher Clark, Xcel's Minnesota president, told reporters Friday at the Monticello Community Center.

The new leak was in the "hundreds of gallons," according to Xcel, far smaller than the initial leak of about 400,000 gallons. Tritium is a moderately radioactive form of hydrogen created in nuclear power production.

The company is voluntarily shutting down the plant; the action wasn't forced by state or federal regulators, Clark said.

"We could have continued to operate the plant safely," he said. The Minnesota Pollution Control Agency, or MPCA, confirmed it did not ask for the plant to be shut down.

The company wanted to resolve the leak immediately rather than wait for a scheduled April 15 plant shutdown for refueling. "We want to put this behind us," Clark said.

The plant may not be reopened before the 25-day planned outage, when the reactor's nuclear fuel is replaced.

The Monticello plant runs 24 hours a day and plays a critical role in Xcel's electricity production. However, the shutdown is occurring during a "shoulder season" when power demand is relatively low, Clark said.

"Our other plants can fill in pretty easily for Monticello coming offline,"

he said.

Clark reiterated that neither the original leak nor the new one pose a threat to the environment or drinking water. The tritium leak has not moved beyond Xcel's property or into the Mississippi River, he said, which the MPCA confirmed.

Xcel reported high groundwater levels of tritium to the U.S. Nuclear Regulatory Commission in November.

The company then discovered that a 3-inch pipe between the plant's reactor and turbine buildings had been leaking. There is only a half-inch space between the buildings—making the leak hard to detect, Xcel officials have said.

Xcel remedied the leak about a month after detecting it. Essentially the company put a container beneath the pipe to catch the leaking water and send it back into the plant's water processing system.

But the leak was severe enough to cause the container to overflow, Clark said, leading to more tritium-laced water seeping into the ground. "Within the last couple of days, we realized the catchment was no longer capturing the water," he said.

Edwin Lyman, director of nuclear safety for the Union of Concerned Scientists, said Xcel "tried a quick patch and it failed."

Once the Monticello plant is shut down completely and the nuclear reactor cooled off, Xcel will remove the pipe and conduct several tests on it. "What we want to do is cut that pipe out and do a full root cause analysis," Clark said.

The pipe, which carries water back from the plant's turbine generation

building to its reactor building, is original equipment, Clark said. The plant opened in 1971.

"We don't know the cause of the leak," he said. "Obviously, with a pipe of that age, we can all speculate."

Lyman said he was not aware of another situation where a plant shut down only to address leaking tritium—a widespread problem for the nuclear industry over the past two decades.

"The industry has always played down the significance of these things (tritium leaks) and obviously, shutting the plant down in response would be a pretty extreme action," Lyman said.

The shutdown, he added, "likely suggests that there may be a deeper issue" at Monticello.

Clark said that during the shutdown, Xcel will do a battery of tests, including to see if the leak is part of a larger problem. "I think we are dealing with an isolated situation here."

Xcel, the MPCA and the Minnesota Department of Health simultaneously announced the original leak last week—prompting criticism over why months had passed since the problem was detected.

Asked Friday whether that criticism helped prompt the quick disclosure of the second leak, Clark said "absolutely."

The tritium levels found in a groundwater monitoring well at the Monticello plant have been well above standards set by the Environmental Protection Agency. But "in the quantities being discharged, it actually dilutes very quickly," Clark said.

"Even if tritium-tainted water hit the river, it would very quickly be diluted so as to not pose a danger," he said. "It is very unlikely that this tritiated water could reach the drinking water supply."

Monticello's drinking water intake is upriver from the nuclear plant; Becker's is on the other side of the Mississippi.

"If it reached the river, all 400,000 gallons of it at once, the volume of the river would dilute it so much, that it would be well below the limits of our concern, and almost to the limits of our detection," Dan Huff, assistant commissioner for the state Department of Public Health, said earlier this week.

The Nuclear Regulatory Commission agrees that the leak is not a danger and resident inspectors were aware of it, said spokeswoman Viktoria Mitlyng.

Clark said Friday that Xcel does not yet have a cost estimate for leak-related repairs. "Our belief now is that we will be able to absorb the costs in our normal budget," he said. "That could change."

If Xcel's operations budget isn't adequate to the task, the company would have to ask Minnesota utility regulators to pass the costs to ratepayers.