

**BEFORE THE MINNESOTA OFFICE OF ADMINISTRATIVE HEARINGS  
600 North Robert Street  
St. Paul, Minnesota 55101**

**FOR THE MINNESOTA PUBLIC UTILITIES COMMISSION  
121 Seventh Place East, Suite 350  
St. Paul, Minnesota 55101-2147**

**In the Matter of the Application of  
Northern States Power Company d/b/a Xcel Energy  
for a Certificate of Need for Additional Dry Cask Storage  
at the Monticello Nuclear Generating Plant  
Independent Spent Fuel Storage Installation  
in Wright County**

**OAH Docket No. 8-2500-38129  
MPUC Docket No. E002/CN-21-668**

**SUPPLEMENTAL SUBMISSION REGARDING TRITIUM LEAK AT  
MONTICELLO NUCLEAR GENERATING PLANT**

**May 15, 2023**

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This Supplemental Submission is made pursuant to the Fifth Prehearing Order issued by Administrative Law Judge Eric L. Lipman on May 1, 2023 (the Order). The Order directed Northern States Power Company d/b/a Xcel Energy (Xcel Energy or the Company) to file supplemental information responsive to six questions pertaining to the tritium leak discovered at the Monticello Nuclear Generation Plant (Monticello Plant or the Plant) on November 22, 2022. The questions are:

1. What were the Company's disclosure obligations regarding the leak of contaminated water it discovered on November 22, 2022?
2. Did the Company comply with those obligations?
3. What factors did the Company consider regarding continued operation of the plant after November 22, 2022?
4. Does the contaminated groundwater need to be remediated and if so, what plans does the Company have to do so?
5. How, if at all, should the discovery and disclosures of the leak of contaminated water impact the Commission's evaluation of the Certificate of Need application?
6. What, if any response, would the parties like to make to the public comments in the record?

## I. BACKGROUND

In the course of routine groundwater testing on November 21 and November 22, 2022, Xcel Energy detected tritium in the groundwater under the plant which was later identified as coming from a leaking water pipe running between two buildings at the Monticello nuclear plant. On November 22, 2022, the Company reported this detection of tritium in the groundwater to the Minnesota State Duty Officer, the State office that receives notices of incidents that could impact waters of the State,<sup>1</sup> and also reported that notification to the Nuclear Regulatory Commission (NRC). On November 23, 2022, staff from the Minnesota Department of Health (MDH) and the Minnesota Department of Natural Resources contacted the Company to discuss the notification and response status. Minnesota Pollution Control Agency (MPCA) staff contacted the Company on November 28, 2022, to discuss the State Duty Officer Report and response actions taken to date. The Company also notified the City of Monticello and Wright County on November 28, 2022. The Company has continued to update state regulators and local governments on the status of its response to the leak.

During the investigation of the source of the leak, the Company inspected over 170 locations and found a single source of the leak on December 19, 2022. The leak was in a ½-inch gap between two buildings. The two buildings have walls that are made of

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<sup>1</sup> The Minnesota Duty Officer Program provides a single answering point for local and State agencies to request State-level assistance for emergencies, serious accidents or incidents, or for reporting hazardous materials and petroleum spills. <https://dps.mn.gov/divisions/bca/bca-divisions/administrative/Pages/minnesota-duty-officer-program.aspx> (last visited May 3, 2023).

two - three feet of concrete, which had to be drilled through with a borescope to locate the source of the leak. The Company completed installation of a system to capture the leaking water in the first week of January 2023. On March 24, 2023, the Company discovered that this system was no longer fully capturing the leaking water, and that some additional water had escaped after the installation of the containment system. The Company then made the decision to fully shut down the plant to repair the leak, and did so the next day, on March 25. The leak was repaired by March 28 and the plant was returned to 82% power on March 31 for the scheduled refueling outage coast down.

During that repair, the Company confirmed the existence of a single source of the leak and also proactively replaced another pipe that was made of the same material and situated in a similar position to the pipe that had leaked. Both the leaking pipe and the other pipe that was removed during the repair have been submitted for metallurgical testing. The Plant was restarted after the repair, and both new pipes proved to be functioning properly and leak-free. The Monticello Nuclear Generating Plant (MNGP) is currently powered down for a scheduled refueling, during which the Company will conduct a broad inspection of the Plant and closely inspect the pipes running between buildings at the Plant.

Approximately 400,000 gallons of water leaked before the source of the leak was discovered and contained. The amount of tritium contained in the leaked water was approximately 8 curies, and to date, an estimated 4.111 curies have been recovered. Tritium occurs naturally in the environment in very low concentrations. It emits a low level of radiation, similar to other everyday materials people use and the food people eat.

The highest concentrations of tritium detected at the site of the leak are directly under the plant and not proximate to any drinking water source. The highest measurement at that point was about 5 million picocuries per liter; as of the date of this filing, this was down to 1.35 million picocuries per liter. The Environmental Protection Agency's (EPA) safe drinking water limit is 20,000 picocuries per liter, which applies to sources of public drinking water, such as municipal water supply systems.

The leak has been contained onsite, and as noted by the MDH<sup>2</sup> and the MPCA,<sup>3</sup> there is no risk to drinking water or the public as a result of the leak. The Company installed a number of additional monitoring and recovery wells on the site to improve the monitoring of the location and extent of the tritiated water plume and to recover tritiated groundwater. The Plant also samples three off-site wells on a quarterly basis. Elevated tritium levels have not been detected in any wells located outside the Monticello site or in the drinking water wells that serve the Plant. Monitoring wells positioned between the location of the plume and the river show that tritiated water has not reached the river.

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<sup>2</sup> <https://www.health.state.mn.us/communities/environment/air/tritiumleak.html> (last visited May 7, 2023).

<sup>3</sup> <https://www.pca.state.mn.us/news-and-stories/minnesota-state-agencies-monitoring-cleanup-of-tritium-leak-at-xcel-energy-monticello-plant> (last visited May 7, 2023); <https://www.pca.state.mn.us/news-and-stories/statement-on-xcel-energy-shutdown-of-monticello-nuclear-plant> (last visited May 7, 2023).

## **II. QUESTIONS POSED IN THE ORDER**

### **A. What were the Company's disclosure obligations regarding the leak of contaminated water it discovered on November 22, 2022?**

The Company was obligated to report the leak to the Minnesota State Duty Officer pursuant to Minn. Stat. § 115.061, which requires that any “discharge” that could impact waters of the state be reported. The Company reported that notification to the NRC pursuant to 10 C.F.R. § 50.72(b)(2)(xi), which governs reports of incidents made to other governmental agencies.

### **B. Did the Company comply with those obligations?**

Yes. The Company promptly notified the State Duty Officer upon confirmation of the leak and notified the NRC within four hours of that initial notification. The State Duty Officer report number for the notification is 209805.

### **C. What factors did the Company consider regarding continued operation of the plant after November 22, 2022?**

The Company considered that the level of tritium was highest in the well located directly under the plant. Readings from other wells on the property demonstrated that the contamination was isolated, had not left the Plant site, and had not impacted the Plant's drinking water well. Therefore, there was no risk of offsite environmental impacts or risk to the public or the Company's employees.

The Company also considered the importance of the Plant to the Company's ability to provide reliable energy to its customers. The discovery of the leak occurred during a period of low temperatures when it is crucial that electricity supply be dependable, as well as the other benefits that continued operation of the plant would provide to our customers.

Specifically, as discussed extensively in the testimony of Company witnesses Ms. Pamela Gorman Prochaska, Ms. Farah Mandich and Mr. Allen Krug, the MNGP provides a substantial amount of carbon-free reliable energy to the Company's customers. The Plant is one of the nation's best-performing plants.

Maintaining the operability of the Plant was also important in finding the location of the leak. As noted above, the Company inspected 170 potential locations of the leak, and had the Plant not been online, the source of the leak would not have been discovered as rapidly because there would not have been water flowing through the pipe. Given these factors, the Company originally planned to permanently repair the leak during a regularly scheduled refueling outage in April. However, as discussed above, the Company discovered in late March that a small amount of leaked water escaped the containment system and seeped into the ground. While this was quickly detected and remediated within 24 hours, the Company decided to take the unit offline so that it could permanently fix the leak.

**D. Does the contaminated groundwater need to be remediated and if so, what plans does the Company have to do so?**

The Company began action to capture the contaminated groundwater and ensure that the contaminated groundwater plume did not spread beyond the site or to the Mississippi River shortly after discovering the leak. As noted above, the Company has drilled additional monitoring and recovery wells, and is engaging in pumping contaminated water out of the aquifer. This water is processed and reused at the Plant. To date, the Company has recovered 4.111 curies (over 50%) of the 8 curies leaked. Pumping,

processing and reuse of the remaining tritiated water will continue. No further remediation beyond capture of the groundwater is required or necessary.

**E. How, if at all, should the discovery and disclosures of the leak of contaminated water impact the Commission's evaluation of the Certificate of Need application?**

A Certificate of Need (CN) is to be granted if the following factors identified in Minn. R. 7855.0120 are satisfied:

- A. The probable direct or indirect result of denial would be an adverse effect upon the future adequacy, reliability, safety, or efficiency of energy supply to the applicant, to the applicant's customers, or to the people of Minnesota and neighboring states;
- B. A more reasonable and prudent alternative to the proposed facility has not been demonstrated by a preponderance of the evidence on the record by parties or persons other than the applicant;
- C. It has been demonstrated by a preponderance of the evidence on the record that the consequences of granting the certificate of need for the proposed facility, or a suitable modification thereof, are more favorable to society than the consequences of denying the certificate; and
- D. That it has not been demonstrated on the record that the design, construction, operation, or retirement of the proposed facility will fail to comply with those relevant policies, rules, and regulations of other state and federal agencies and local governments.

The discovery and disclosures of the leak do not call into question whether any of the CN factors have been satisfied in connection with the requested expansion of the Independent Spent Fuel Storage Installation (ISFSI). Each of these factors is addressed below.

**1. Adequacy, reliability, safety or efficiency of energy supply**

Denial of the CN due to the circumstances surrounding the leak would, as discussed in the Company's testimony, negatively impact the adequacy, reliability, safety or efficiency of the energy supply to the Company's customers because it would lead to the



shutdown of the Monticello Plant in 2030. None of the information regarding the leak demonstrates that MNGP is an unsafe generation plant, or that continued operation of the Plant would negatively impact the safety of the Company's employees, customers or the nearby community. As discussed above, the Company took prompt action to locate the source of the leak, capture the leaking water, and repair the leak. The Company's actions ensure that contaminated water has not left the Plant site and that no drinking water or the Mississippi River has been impacted. The Company's work to remediate the tritiated groundwater plume is proving successful and is ongoing. Further, the Company is undertaking a metallurgical analysis of the pipe that leaked and will incorporate this information into its ongoing program of inspections and maintenance at the Plant. There is no suggestion that the leak has negatively impacted the adequacy, reliability, safety or efficiency of the energy supplied to the Company's customers. The Minnesota Public Utilities Commission's consideration of this CN factor should not be affected by the circumstances surrounding the leak or the Company's response to the leak.

## **2. Consideration of Alternatives**

The leak was not related to the operation of the ISFSI, and does not inform the existence of prudent and feasible alternatives to expanding the ISFSI. Because the expansion of the ISFSI is critical to the continued operation of the MNGP, however, the CN Application and the Company's testimony considered generation alternatives. If the Commission denies the CN for the expansion of the ISFSI, the Plant would be shut down in 2030.

The circumstances surrounding the leak do not demonstrate that continued operation of the MNGP is not feasible, or that there is another prudent and reasonable alternative that can replace the energy and capacity provided by the MNGP. The leak did not threaten public health or the environment, and did not cause any long-term negative impacts to the operation of the Plant.

### **3. Consequences to Society**

This factor includes consideration of the effects of the proposed facility on the natural environment. Continued operation of the MNGP is crucial to the achievement of the Company's decarbonization goals, as discussed extensively in the Company's CN Application and testimony. The leak caused localized impacts onsite to groundwater that do not have any effect on health or safety of the public. These minimal environmental impacts do not outweigh the substantial benefits to society by continuing the operation of the MNGP. Further, the Company has begun remediating the tritiated groundwater plume, and has already recovered over 50% of the leaked tritium. The Company's response to the leak, and its commitment to incorporating lessons learned into its inspection and maintenance plans going forward, demonstrate that the environmental benefits of granting the CN are not outweighed by the temporary and localized impacts caused by the leak.

### **4. Compliance with policies, rules and regulations**

As discussed above, the Company complied with its reporting obligations with respect to the leak and has taken proactive steps to address it. Nothing in the information provided above suggests that the occurrence of the leak, or the Company's handling of the

leak, demonstrates that the ongoing operation of the MNGP will not be conducted in compliance with policies, rules and regulations.

**F. What, if any response, would the parties like to make to the public comments in the record?**

There were three public comments submitted that related to the leak.<sup>4</sup> Generally, the comments asked that the decision on the CN be postponed until the tritium leak was investigated and remediation was addressed, and expressed concern over the timing of public disclosure of the leak. One commenter also expressed concern that the Plant was not operating responsibly or considering human and environmental health in its operations. That same commenter noted that less water would have leaked had the Plant suspended operations upon discovering the leak. One commenter addressed the topic of the leak at the public hearing. He asked whether that information was known at the time the environmental impact statement (EIS) was prepared, and whether it made sense to address the leak in the EIS. He also requested additional well water testing and other testing to ensure that drinking water supplies would continue to be safe.

The Company understands the importance of quickly informing the communities it serves in the event of a threat to health and safety. For the reasons discussed above, however, there was no such threat here, as confirmed by the MPCA and MDH, in testimony before a joint meeting of the Minnesota Senate Environment, Climate and Legacy

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<sup>4</sup> Given the narrow focus of this submission, only those comments that addressed the leak are discussed here.

Committee and Energy, Utilities, Environment and Climate Committee on April 12, 2023.<sup>5</sup> MDH specifically notes that there is “no health risk” due to the leak., and that there is no evidence of impact to wildlife or plants, including crops.<sup>6</sup> Xcel Energy promptly reported the leak to regulators, and has continued to work with those regulators to manage the leak and ensure the safety of the local community and surrounding environment. Xcel Energy disagrees that it has failed to operate the Plant responsibly, or that it does not take human health or the environment into account in its operations. Safety is one of Xcel Energy’s core values. The contaminated water remains onsite and over 50% of the tritium that was leaked has been recovered. Further, there is no need to modify the EIS. The circumstances of the leak here do not change the analysis of environmental effects from the proposed project, as the source of the leak has been discovered, the impacted groundwater is being pumped, processed and reused, and no tritiated groundwater has left the site.

The Company has learned, and continues to learn, from this leak. The Company takes seriously the concerns raised through the public comments in this docket and through other communications. The Company has taken, and will continue to take, action to ensure that the leak does not pose a threat to the public or the environment.

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<sup>6</sup> <https://www.health.state.mn.us/communities/environment/air/tritiumleak.html> (last visited May 9, 2023).