

THE ATTACHMENT TO THIS LETTER CONTAINS SECURITY RELATED INFORMATION  
WITHOLD FROM PUBLIC DISCLOSURE IN ACCORDANCE WITH 10 CFR 2.390



2807 West County Road 75  
Monticello, MN 55089

August 8, 2022

L-MT-22-029  
10 CFR 50.90

ATTN: Document Control Desk  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

Monticello Nuclear Generating Plant  
Docket No. 50-263  
Renewed Facility Operating License  
No. DPR-22

Response to a Request for Additional Information Regarding the Monticello Fuel Oil Storage Tank Inspection (EPID: L-2021-LLA-0231)

References:

1. NSPM letter to NRC, "License Amendment Request: Revise MNGP Technical Specifications to Support a Ten-Year Inspection of the Diesel Generator Fuel Oil Storage Tank," (L-MT-21-072) dated December 13, 2021 (ADAMS Accession No. ML21348A718)
2. NRC email to NSPM, "Draft RAI RE: Monticello Fuel Oil Storage Tank Inspection (EPID: L-2021-LLA-0231)," dated June 6, 2022 (ADAMS Accession No. ML22109A007)

Northern States Power Company, a Minnesota corporation, doing business as Xcel Energy (hereafter "NSPM"), submitted a license amendment request (LAR) on December 13, 2021, (Reference 1), for the Monticello Nuclear Generating Plant (MNGP). The proposed LAR requested an amendment to the Technical Specifications (TS) for MNGP Specification 3.8.3, "Diesel Fuel Oil, Lube Oil, and Starting Air," and Specification 3.8.2, "AC Sources – Shutdown." One-time-only TS changes were proposed to allow the common Fuel Oil Storage Tank (FOST) to be out-of-service for up to 14 days for performance of License Renewal required ten-year inspections of the tank. An alternate fuel oil storage system will be installed and utilized during the tank inspection to supply the required Emergency Diesel Generator (EDG) Day Tank.

On June 6, 2022, the U.S. Nuclear Regulatory Commission (NRC) requested additional information (RAI) (Reference 2). The NSPM response to this RAI is provided in the following enclosure.

The information provided in this letter does not alter the evaluations performed for Reference 1 in accordance with 10 CFR 50.92, "Issuance of amendment."

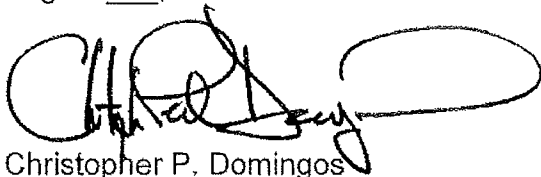
In accordance with 10 CFR 50.91, "Notice for public comment; State consultation," NSPM is providing to the designated Minnesota state official a copy of this response without the attachment to the enclosure which contains security related information withheld in accordance with 10 CFR 2.390.

Should you have any questions or if additional information is needed, please contact Mr. Richard Loeffler at (612) 342-8981 or Rick.A.Loeffler@xcelenergy.com.

Summary of Commitments

This letter makes no new commitments and no revisions to existing commitments.

I declare, under penalty of perjury, that the foregoing is true and correct. Executed on August 8, 2022.



Christopher P. Domingos  
Site Vice President, Monticello and Prairie Island Nuclear Generating Plants  
Northern States Power Company – Minnesota

Enclosure

cc: Administrator, Region III, US NRC  
Project Manager, Monticello, US NRC  
Resident Inspector, Monticello, US NRC  
State of Minnesota

**ENCLOSURE**

**MONTICELLO NUCLEAR GENERATING PLANT**

**RESPONSE TO THE REQUEST FOR ADDITIONAL INFORMATION  
REGARDING THE MONTICELLO FUEL OIL STORAGE TANK INSPECTION**

(8 pages follow)

**RESPONSE TO THE REQUEST FOR ADDITIONAL INFORMATION (RAI)  
REGARDING THE MONTICELLO FUEL OIL STORAGE TANK INSPECTION**

**RAI 1**Regulatory Basis:

10 CFR 73.55(f)(1) states that “The licensee shall document and maintain the process used to develop and identify target sets, to include the site-specific analyses and methodologies used to determine and group the target set equipment or elements.”

10 CFR 73.55(e)(9), Vital areas, states that:

- (i) Vital equipment must be located only within vital areas, which must be located within a protected area so that access to vital equipment requires passage through at least two physical barriers, except as otherwise approved by the Commission and identified in the security plans.
- (ii) The licensee shall protect all vital area access portals and vital area emergency exits with intrusion detection equipment and locking devices that allow rapid egress during an emergency and satisfy the vital area entry control requirements of this section.
- (iii) Unoccupied vital areas must be locked and alarmed.
- (iv) More than one vital area may be located within a single protected area.

Issue:

On page 9 of 22 of the license amendment request dated December 13, 2021 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML21348A718), the first paragraph mentions that the hoses from the double-walled temporary fuel oil storage tanks referred to as “FRAC” penetrating the protected area (PA) fencing will have security compensatory measures implemented as determined by the Security Plan. The first paragraph also mentions that the FRAC system will be located outside the PA and the fuel transfer system will be located inside the PA.

**RAI 1 Request**

What effect, if any, will the removal of the fuel oil storage tank and the installation of temporary equipment have on (1) target sets, (2) vital areas and equipment, and (3) implementation of the site’s protective strategy?

**RAI 1 Response**

- The removal of the fuel oil storage tank and the installation of temporary equipment does not create any new target sets or change any target sets described within the Target Set Analysis.
- The removal of the fuel oil storage tank and the installation of temporary equipment does not create any new vital areas or change any vital areas that are described within the Security Plan.
- The removal of the fuel oil storage tank and the installation of temporary equipment does not affect implementation of the site's protective strategy. Compensatory measures will be implemented in accordance with the Security Plan during the applicable phases of the temporary configuration change (see response to RAI 2).

**RAI 2**Regulatory Basis:

10 CFR 73.55(b)(9) states that "The licensee shall establish, maintain, and implement an insider mitigation program and shall describe the program in the Physical Security Plan."

- (i) The insider mitigation program must monitor the initial and continuing trustworthiness and reliability of individuals granted or retaining unescorted access authorization to a protected or vital area, and implement defense-in-depth methodologies to minimize the potential for an insider to adversely affect, either directly or indirectly, the licensee's capability to prevent significant core damage and spent fuel sabotage.
- (ii) The insider mitigation program must contain elements from:
  - (A) The access authorization program described in § 73.56;
  - (B) The fitness-for-duty program described in part 26 of this chapter;
  - (C) The cyber security program described in § 73.54; and
  - (D) The physical protection program described in this section.

10 CFR 73.55 (e)(7)(i)(B) states that "Monitored with intrusion detection equipment designed to satisfy the requirements of § 73.55(i) and be capable of detecting both attempted and actual penetration of the protected area perimeter barrier before completed penetration of the protected area perimeter barrier."

10 CFR 73.55(g), "Access controls," states that "(1) Consistent with the function of each barrier or barrier system, the licensee shall control personnel, vehicle, and material access, as applicable, at each access control point in accordance with the physical protection program design requirements of 10 CFR 73.55(b)."

10 CFR 73.55(h), "Search programs," states, in part, that the licensee is required to develop and implement a search program "to detect, deter, and prevent the introduction of firearms, explosives, incendiary devices, or other items which could be used to commit radiological sabotage."

10 CFR 73.55(i) "Land vehicles," states that:

Licensees shall: (A) Design, construct, install, and maintain a vehicle barrier system, to include passive and active barriers, at a stand-off distance adequate to protect personnel, equipment, and systems necessary to prevent significant core damage and spent fuel sabotage against the effects of the design basis threat of radiological sabotage land vehicle bomb assault.

10 CFR 73.55(o), "Compensatory measures," states that

- (1) The licensee shall identify criteria and measures to compensate for degraded or inoperable equipment, systems, and components to meet the requirements of this section.
- (2) Compensatory measures must provide a level of protection that is equivalent to the protection that was provided by the degraded or inoperable, equipment, system, or components.

Appendix C to Part 73, Section II.B.3.c (v), requires licensees to develop, implement, and maintain a written protective strategy to be documented in procedures that describes in detail the physical protection measures, security systems and deployment of the armed response team relative to site specific conditions, to include but not be limited to, facility layout, and the location of target set equipment and elements. The protective strategy should support the general goals, operational concepts, and performance objectives identified in the licensee's safeguards contingency plan.

Issue:

The license amendment request does not appear to address how Monticello Nuclear Generating Plant (Monticello) will continue to be protected against the Design Basis Threat (DBT) or provide any detailed information regarding the physical security compensatory measures that will be taken to ensure the plant remains adequately protected for the duration of the temporary configuration change to the plant. On page 9 of 22, "Alternate Fuel Oil Supply System," the first paragraph mentions that the hoses from the FRAC tanks penetrating the protected area (PA) fencing will have security compensatory measures implemented as determined by the Security Plan. The first paragraph also mentions that the FRAC system will be located outside the PA and the fuel transfer system will be located inside the PA. The submittal does not provide a description of where outside the PA the FRAC system will be located (e.g., will it be in the owner-controlled area near the large or small vehicle barrier

system?). It also does not describe where the fuel transfer system will be located within the PA (will the location interfere with interlocking/overlapping fields-of-fire?). Page 11 of 22, top of page states in part: "... security measures will be implemented during the time the hose is run through the door of the Diesel Generator Building." Page 11 of 22, "AFOSS Weather Operational Considerations," second paragraph states in part: "...the tank can be quickly refilled the hoses removed and the Diesel Generator Building door closed."

## **RAI 2 Request**

- (1) Describe how Monticello will continue to be protected against the DBT with the security compensatory measures for the duration of the temporary configuration change to the plant.

### **RAI 2 Item 1 Response**

Compensatory measures will be implemented during several different phases of the temporary configuration change.

First, compensatory measures will be implemented during the time that excavation is conducted to entrench / install the fuel transfer hoses under the Protected Area (PA) boundary. These specific compensatory measures will no longer be needed once the fuel transfer hoses are established under the PA boundary since the size of these hoses do not result in an unattended opening (UAO). These compensatory measures will also be established during removal of the fuel transfer hoses. The compensatory measures that will be implemented during these phases are in accordance with Section 21.1 of the Security Plan.

Second, compensatory measures will be implemented whenever the Diesel Generator Building door is opened to transfer fuel oil into the required Emergency Diesel Generator (EDG) day tank. The compensatory measures that will be implemented during this phase are in accordance with Section 21.2 of the Security Plan.

- (2) Describe how the hoses will penetrate the PA fence line (e.g., through open gates, penetration(s) through the fence line fabric) and describe the security compensatory measures that will be provided and implemented within the site procedures. Also, describe how the intrusion detection system (IDS) and assessment system at the PA barrier will continue to provide its intended functions for the duration of the temporary plant configuration.

### **RAI 2 Item 2 Response**

The fuel transfer hoses will be entrenched underneath the PA boundary (i.e., the PA fence line). As described in the response to RAI 2 Item 1, compensatory measures will be implemented during the installation and removal of the fuel transfer hoses. Once the fuel transfer hoses are established, the compensatory measures are no longer required as the hose dimensions do not result in UAO pathways. The installation of the fuel transfer hoses will not impact the IDS and assessment capabilities, which will be validated through approved testing procedures.

- (3) Describe how changes to the IDS will be inspected and tested during implementation of any changes. Confirm whether the testing of IDS will conform to Regulatory Guide 5.44, "Perimeter Intrusion Alarm Systems," Revision 3, (Agencywide Documents Access and Management System Accession No. ML003739217), Section 3, "Recommended Testing Procedures," Testing Option I or II.

#### **RAI 2 Item 3 Response**

There will be no changes to the IDS. No alternative testing is needed or required.

- (4) Provide detailed descriptions of where the FRAC and fuel oil transfer systems will be located and whether these locations will interfere with the site protective strategy.

#### **RAI 2 Item 4 Response**

The FRAC tanks will be located to the West of the plant in a position between the site's credited Early Warning System (EWS) and the PA boundary / IDS. This location does not result in degradation of protective strategy effectiveness (e.g., fields of fire). See Figures 1 and 2 in the attachment to this enclosure.

- (5) Describe the security compensatory measures for the Diesel Generating Building that will be implemented per site procedures to protect against unauthorized access and control.

#### **RAI 2 Item 5 Response**

The compensatory measures that will be implemented during this phase are in accordance with Section 21.2 of the Security Plan.

### **RAI 3**

#### Regulatory Basis:

10 CFR 73.58, "Safety/security interface requirements for nuclear power reactors," states that:

- (a) Each operating nuclear power reactor licensee with a license issued under part 50 or 52 of this chapter shall comply with the requirements of this section.
- (b) The licensee shall assess and manage the potential for adverse effects on safety and security, including the site emergency plan, before implementing changes to plant configurations, facility conditions, or security.
- (c) The scope of changes to be assessed and managed must include planned and emergent activities (such as, but not limited to, physical modifications, procedural changes, changes to operator actions or security assignments,



- maintenance activities, system reconfiguration, access modification or restrictions, and changes to the security plan and its implementation).
- (d) Where potential conflicts are identified, the licensee shall communicate them to appropriate licensee personnel and take compensatory and/or mitigative actions to maintain safety and security under applicable Commission regulations, requirements, and license conditions.

Issue:

The submittal did not appear to address safety/security interface.

Request:

Describe how safety/security interface is being addressed for this temporary plant change in accordance with 10 CFR 73.58.

### **RAI 3 Response**

The safety / security interface is addressed by the nuclear industry Standard Design Process. Development and implementation of the Alternate Fuel Oil Supply System (AFOSS) temporary modification is controlled by this process. During development a Design Attribute Review was performed to determine potentially impacted engineering disciplines / programs and stakeholders from other departments / areas, including Security and Emergency Preparedness. The Design Attribute Review resulted in an impact review being performed by Security. Security evaluated the physical changes to the plant for their effects on the Security Plan. Security related input was provided to support temporary modification development, as well as the need for compensatory measures, which are discussed in the response to RAI 2. No impacts to the Emergency Plan were identified.

### **RAI 4**

Regulatory Basis:

NUREG-1764 "Guidance for the Review of Changes to Human Actions," provides guidance for reviewing changes to human actions that are credited for safety. NUREG-1764 provides guidance in Sections 3 and 4 for verifying those deterministic aspects of design have been appropriately considered. NUREG-1764 says that deterministic aspects include verifying that the change meets current regulations and does not compromise defense-in-depth.

Issue:

The submittal states that procedures will be in place and training will be provided to the operators as determined by the Systematic Approach to Training (SAT) process. It is not clear in the submittal if there are any operator actions for this new alignment.

Request:

Provide a list of any revised operator actions that will be required to transfer oil from the alternate fuel oil storage system, as well as any timing analyses for those operator actions.

**Response**

The operator actions normally associated with the Diesel Fuel Oil Transfer System consist of:

- 1) Monitoring the level in the common Fuel Oil Storage Tank (FOST or T-44),
- 2) Verifying that continuous flow from FOST to the EDG Day Tanks is maintained – thereby automatically maintaining the required EDG Day Tank(s) full,
- 3) Receiving new fuel oil for makeup to the FOST, and
- 4) Adding makeup fuel oil to the FOST when necessary.

Since the FOST is removed from service for this ten-year License Renewal required inspection of the tank, the following analogous operator monitoring / actions for the installed AFOSS and the required EDG Day Tank will be described in procedures or temporary modification documents utilized during the FOST inspection evolution. Note that these procedures / temporary modification documents are Compensatory Measures as described in the Section 3.7 and Attachment 1 of the license amendment request (LAR).

- Monitoring fuel level (volume) in the AFOSS storage tanks (colloquially referred to as “FRAC” tanks) instead of the FOST. Monitoring the FOST is done once per shift while an EDG is in standby and approximately hourly while an EDG is in service. As this is passive monitoring, and is essentially the same action that currently exists, no timing analysis was performed.
- Monitoring fuel level in the required EDG Day Tank instead of verifying continuous flow from the FOST. This is done once per shift while an EDG is in standby and approximately hourly while an EDG is in service. As this is passive monitoring, and is essentially the same action that currently exists, no timing analysis was performed.
- Receiving new fuel oil directly to the AFOSS storage tanks rather than receiving fuel oil to the Diesel Oil Receiving Tank (T-83) and then transferring it to the FOST. Combining these two existing activities into a single action simplifies the process requiring less time than the process currently employed, hence no timing analysis was performed.
- Transferring fuel oil from the FRAC tanks to maintain the required EDG Day Tank supply manually instead of the normal continuous flow from the FOST. This will be accomplished by routing a discharge hose from a portable fuel oil transfer pump which takes suction on the FRAC tanks to transfer fuel oil to the required EDG Day Tank.
  - A timing analysis involving a simulated walk through of the evolution using the current planned temporary modification documents for the AFOSS was performed which resulted in the following timeline:
    - In parallel, one operator reports to the AFOSS where the portable fuel oil transfer pump is located, while a minimum of one operator along with a security officer and a radiation protection technician report to the 11 EDG Room access door – approximately 5 minutes total.

- The EDG access door is opened and the pre-staged hose is routed to the EDG Day Tank designated fill point – approximately 20 minutes.
- The portable fuel oil transfer pump is started and filling commences – approximately 5 minutes.
- Therefore, approximately 30 minutes will be needed to commence filling the required EDG Day Tank.

Additionally, as described in the LAR, once commenced, a complete refilling of an empty EDG day tank (1,500 gallon tank) is estimated to take approximately 30 minutes. Therefore, based on the above considerations, the time duration to refill the required EDG Day Tank is well within the minimum 8 hour supply of fuel oil available for the EDG.