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Monticello Nuclear Generating Plant
2807 W County Road 75
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July 30, 2014

L-MT-14-064
10 CFR 50.55a

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

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

Subject: 10 CFR 50.55a Request No. VR 05: Proposed Alternative to Inservice Testing Requirements Pursuant to 10 CFR 50.55a(a)(3)(ii)

Pursuant to 10 CFR 50.55a, "Codes and standards," paragraph (a)(3)(ii), Northern States Power Company, a Minnesota corporation (NSPM), d/b/a Xcel Energy requests authorization of an alternative to the testing requirements of American Society of Mechanical Engineers (ASME) Code for Operations and Maintenance of Nuclear Power Plants (ASME OM Code) 2004 Edition, with Addenda through OMb Code-2006, for the Monticello Nuclear Generating Plant.

An upward trend in unidentified drywell leakage was suspected to be the result of a packing leak on an inboard main steam line drain valve. The inboard main steam line drain valve was back seated to isolate the packing leak, which reduced the unidentified leakage in the drywell. With the inboard main steam line drain valve back seated the outboard main steam line drain valve was closed and de-energized to prevent opening for 10 CFR 50, Appendix R concerns.

This 10 CFR 50.55a request is to defer quarterly valve exercise testing on the inboard and outboard main steam line drain valves (MO-2373 and MO-2374) to the refueling outage in spring 2015 because of the hardship without a compensating increase in the level of quality and safety presented by the temporary configuration of the main steam line drain valves. Quarterly testing will resume following the spring 2015 refueling outage. The details of the 10 CFR 50.55a request are provided herein.

NSPM submits this request for the Fifth Ten-Year Inservice Testing Interval and requests expedited approval by October 1, 2014, prior to the next quarterly surveillance scheduled for October 10, 2014.

If you have any questions or require additional information, please contact Mr. Randy Rippy at 612-330-6911.

Summary of Commitments

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

Karen D. Fili
Site Vice President, Monticello Nuclear Generating Plant
Northern States Power Company – Minnesota

Enclosure

cc: Administrator, Region III, USNRC
Project Manager, Monticello, USNRC
Resident Inspector, Monticello, USNRC
Minnesota Department of Commerce

ENCLOSURE

10 CFR 50.55a REQUEST VR 05
IN ACCORDANCE WITH 10 CFR 50.55a(a)(3)(ii)
INSERVICE TESTING HARDSHIP

Main Steam Line Drain Valve Exercising

Proposed Alternative In Accordance with 10CFR50.55a(a)(3)(ii)

On the basis that compliance with the American Society of Mechanical Engineers (ASME) Operations and Maintenance (OM) Code requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

1. ASME OM Code Component(s) Affected

MO-2373, Main Steam Line Drain Valve - Inboard (Class 1) (Category A)

MO-2374, Main Steam Line Drain Valve - Outboard (Class 1) (Category A)

Component/System Function

These valves are normally closed during power operations. These valves must close to prevent inventory loss following main steam line pipe breaks outside containment and to provide containment isolation.

These valves receive a Group 1 Isolation Signal to close upon: 1) Reactor low low water level; 2) Main steam line high flow; 3) Main steam line tunnel high temperature; 4) Main steam line low pressure (RUN mode only).

MO-2373 is the inboard containment isolation valve for penetration X-8 and MO-2374 is the outboard containment isolation valve for penetration X-8.

The main steam line drain valves may be opened to facilitate draining condensate and providing warm up steam during plant startup. These valves are also opened during reset of a Group I isolation to minimize differential pressure across the main steam isolation valves prior to their reopening. These open functions are not required for safe shutdown or accident mitigation.

2. Applicable Code Edition and Addenda

The Monticello Nuclear Generating Plant (MNGP) is currently in the fifth 10-year Inservice Test (IST) Program interval and is committed to the American Society of Mechanical Engineers (ASME) Code for Operations and Maintenance of Nuclear Power Plants (ASME OM Code) 2004 Edition, with Addenda through OMb Code-2006.

3. Applicable Code Requirement(s)

ISTC-3510, "Exercising Test Frequency," states in part: "Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months..."

4. Reason for Request

In May 2014, an upward trend in unidentified drywell leakage was identified in conjunction with a change in the Drywell continuous air monitor which occurred coincidentally with the exercise (stroke time) testing of inboard main steam line drain valve MO-2373. The cause of the increased leakage was suspected to be the result of a packing leak on the inboard main steam line drain valve. Back seating this valve would likely reduce leakage into the Drywell.

A back seating testing methodology was developed which would maintain the functional performance parameters of both the inboard and outboard valves within acceptable limits. On July 10, 2014, MO-2373 was back seated and testing was performed which demonstrated the operability of the valves. After completion of the testing the inboard main steam line drain valve was back seated in the open position to isolate the packing leak. This reduced the unidentified leakage in the Drywell to levels that had existed prior to exercising MO-2373. With the inboard main steam line drain valve back seated, the outboard valve (MO-2374) was then closed and de-energized to prevent opening due to 10 CFR 50, Appendix R concerns.

Quarterly exercise testing of these valves is next required on October 10, 2014. It is requested to defer this testing until the 2015 refueling outage, scheduled for the spring of 2015. To perform the quarterly exercise testing and returning MO-2373 to a back seated configuration between quarterly tests, would require multiple opening and closing evolutions of the two valves, including the need to re-energize and de-energize the breaker for MO-2374. These multiple evolutions have the potential to exacerbate drywell leakage, which the back seating operation had previously restored to normal levels.

Quarterly Exercise Testing

Quarterly exercise testing of MO-2373 and MO-2374 with MO-2373 on its back seat requires multiple breaker manipulations. The quarterly test starts with MO-2373 being stroke timed closed. Next, the breaker for MO-2374 would have to be closed to restore power to MO-2374. MO-2374 would be stroke timed open and closed, and then the breaker for MO-2374 would be reopened. MO-2373 would then be stroke timed open. MO-2373 would then have to be back seated to reduce unidentified Drywell leakage resulting from packing leakage on MO-2373. This evolution would be required to be performed each quarter (two more quarterly tests) until the refueling outage in the spring of 2015 when the valve will be repaired.

Risks Associated With The Back Seating Evolution

Repeated back seating increases the risk of causing damage to the back seat or stem as described in US Nuclear Regulatory Commission (NRC) Information Notice 87-40, "Backseating Valves Routinely to Prevent Packing Leakage." Placing the valve on its back seat multiple times requires opening the circuit breaker and connecting a reduced voltage source to the motor operated valve (MOV) bypassing the open circuit until the motor is stalled. The reduced voltage source is then removed and the circuit breaker is closed. Repeatedly performing this evolution increases the potential for human errors to occur. Motor damage could occur if the locked rotor current is in excess of 15 seconds. If reduced voltage is not properly controlled the valve back seat or stem may be damaged during the back seat evolution. In the open direction the calculated weakest link is the back seat on MO-2373. An increase in unidentified drywell leakage, such as might occur from repeated cycling of MO-2373, could ultimately result in a Technical Specification (TS) required shutdown.

Basis for Relief Based on Hardship

NUREG 1482, Revision 2, section 3.1.1, states "A licensee may request relief from quarterly testing where such testing would impose a hardship (e.g., entering a limiting condition for operations of 3 to 4 hours in duration, repositioning a breaker from "off" to "on"...)." Other acceptable reasons for relief include: the need to keep personnel radiation exposure as low as reasonably achievable (ALARA), and personnel safety.

Repair of the valve packing would require entry into the Drywell. Entry into the Drywell would require the plant to either enter Mode 3 (Hot Shutdown) or drop below 10% power due to radiation levels. Entry into the Drywell with the plant operating is not ALARA and increases the personnel risk due to radiation levels. Also, a Drywell entry presents personnel safety concerns due to high ambient temperatures, and inaccessibility – the Drywell is inerted with nitrogen gas during power operation.

Additionally, maneuvering the reactor to below 10% power or to Mode 3 involves inherent risk and increases the nuclear safety risks due to cycling plant equipment. Maintaining the packing leak isolated with the inboard main steam line drain valve (MO-2373) back seated in the open position and the outboard valve closed is the lower risk option.

For all of these reasons, quarterly exercising of main steam line drain valves (MO-2373 and MO-2374) involves a hardship. There is not a sufficient corresponding increase in level of safety versus the potential to increase Drywell unidentified leakage or cause further damage to the inboard main steam line drain isolation valve.

5. Proposed Alternative and Basis for Use

The main steam line drain valves are exercise tested quarterly. The present configuration of back seating the inboard main steam line drain valve in the open position to decrease Drywell leakage, and closing and de-energizing the outboard valve to isolate the penetration, is a temporary configuration. Quarterly exercise testing of the inboard main steam line drain valve from the back seated position increases the potential for unacceptable Drywell leakage, for which the back seating operation was previously performed to reduce Drywell leakage to acceptable levels.

Northern States Power Company – Minnesota (NSPM) proposes to stroke the inboard and outboard main steam line drain valves (MO-2373/MO-2374) on a refueling outage basis in lieu of the current quarterly exercise testing. The valves have successfully passed each quarterly exercise test since startup from the 2013 refueling outage. Historical exercise trending results for both of these main steam line drain valves for performances prior to the 2013 refueling outage are consistent with current cycle results.

The inboard and outboard main steam line drain valves are normally closed during power operation. The valves safety function is to close to prevent inventory loss following main steam line pipe breaks outside containment and to provide containment isolation. The proposed operating configuration for the remainder of the cycle, i.e., operating with the outboard valve closed and de-energized and the inboard valve back seated in the open position (to reduce leakage into the Drywell), maintains the required safety function of containment isolation. Multiple back seats of the inboard main steam line drain valve could result in back seat or stem damage. Requiring performance of quarterly exercise testing unnecessarily challenges the function. Also, since the inboard and outboard main steam line drain valves normal state is closed during power operation, there are no operational reasons to require stroking of these valves during this period.

It is desired by NSPM to extend the exercise testing to the refueling outage due to the hardship without a compensating increase in the level of quality and safety presented by the temporary configuration of the main steam line drain valves.

There is reasonable assurance that these valves will perform their safety function to close to prevent inventory loss following main steam line pipe breaks outside containment and to provide containment isolation.

6. Duration of Proposed Alternative

The proposed alternative identified in this relief request shall be utilized until the next refueling outage in spring of 2015.