

June 8, 2020

L-MT-20-015
License Condition 2.C.15(h)

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 Request for Additional Information (RAI) Monticello Nuclear Generating Plant (MNGP) Long-Term Replacement Steam Dryer Inspection Plan (EPID: L-2019-LLL-0035)

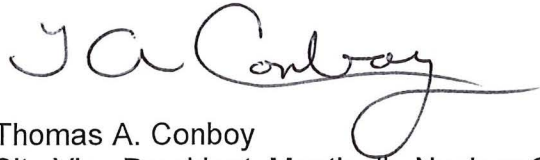
- References:
1. Letter L-MT-19-047, from NSPM to US NRC, "Monticello Nuclear Generating Plant (MNGP) Long-Term Replacement Steam Dryer Inspection Plan", dated November 22, 2019. (EPID NO. L-2019-LLL-0035) (ADAMS Accession No. ML19324F851)
 2. Email from NRC to NSPM, "Monticello Long Term Steam Dryer Inspection Plan (EPID: L-2019-LLL-0035)", dated April 28, 2020 (ADAMS Accession No. ML20120A027)

In Reference 1, Northern States Power Company, a Minnesota corporation, doing business as Xcel Energy (hereafter "NSPM"), submitted the proposed long-term inspection plan for the MNGP Replacement Steam Dryer for NRC review and approval. In Reference 2, the NRC requested additional information. The enclosure to this letter is the NSPM response to the RAI questions.

Please contact Mr. Jeff Kivi at (612) 330-5788 or Jeffrey.Kivi@xenuclear.com if there are any questions or if additional information is needed.

Summary of Commitments

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

A handwritten signature in black ink, appearing to read 'JA Conboy', with a stylized flourish extending from the end.

Thomas A. Conboy
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

**Response to Request for Additional Information:
Monticello Nuclear Generating Plant (MNGP)
Long-Term Replacement Steam Dryer Inspection Plan**

1.0 BACKGROUND

In Reference 1, Northern States Power Company, a Minnesota corporation, doing business as Xcel Energy (hereafter “NSPM”), submitted the proposed long-term inspection plan for the MNGP Replacement Steam Dryer for NRC review and approval. In Reference 2, the NRC requested additional information.

2.0 RESPONSES TO REQUEST FOR ADDITIONAL INFORMATION

NRC Question 1:

The November 20, 2019 letter stated that during the 2019 inspection, one location was identified having two relevant indications and that the flaws were evaluated to be acceptable for the next two refueling cycles prior to the next visual examination. By letter dated August 9, 2019 (ADAMS Accession No. ML19221B714) NSPM provided the results of the 2019 steam dryer inspection. Table 1 provided in Attachment 1 to the August 9, 2019 letter, identified relevant indications in one location (RSD-ID-C1-S1, stiffener welds).

Request

- a. Were the relevant indications determined to be fatigue crack(s) or intergranular stress corrosion crack(s)? Provide the basis for that determination.*
- b. What repair measure or approach is planned to ensure acceptability of the indications beyond the 2 cycles that have been determined to be acceptable?*

NSPM Response:

- a. Based on appearance and location, the indications are determined to be transgranular stress corrosion cracking (TGSCC) resulting from local cold-work during manufacturing. The observed indications are in the base metal parallel to the weld but somewhat away from the weld and the region has the appearance of being subjected to cold-work (grinding). Furthermore, unlike intergranular stress corrosion cracking (IGSCC), which typically show extensive branching, the indications are straight which is consistent with TGSCC.

Industry operating history of the dryer design, which is installed in seven nuclear power plants in the Nordic region and three in the United States, includes no

operating experience indicating susceptibility to high cycle fatigue cracking. The only operating experience with cracking in another plant was determined to be TGSCC related to surface grinding. The Monticello indications are consistent with the prior observation of TGSCC related to grinding.

- b. The indications were determined to be acceptable for the next two cycles following the 2019 inspection based on a structural evaluation, structural redundancy analysis, and fracture mechanics evaluation all performed by the original equipment manufacturer (OEM). Reexamination of the indications will be performed after two cycles. If any crack extension is found, additional evaluation will be performed at that time.

NRC Question 2:

The November 20, 2019 letter stated that:

The proposed inspection plan includes inspection of the various locations over ten-year periods. This frequency is consistent with the re-inspection frequency of BWRVIP-139 and Westinghouse recommendations.

Over the ten-year periods, the plan requires inspection of:

- *All inspection locations in accordance with LTR-A&SA-12-8, Revision 1.*
- *All flaws found during inspections (re-inspections) in accordance with BWRVIP-139-1A re-inspection recommendations.*
- *The maximum stress location in accordance with Westinghouse recommendations (Reference 4).*

Reference 4 has not been provided to support the long term steam dryer inspection plan.

Request

Provide the information from Reference 4 that is included in the long term steam dryer inspection plan.

NSPM Response:

After an April 28, 2020, teleconference between the NRC and NSPM, it is NSPM's understanding that the NRC staff wants to know how the maximum stress location was identified and what that location is on the steam dryer. NRC staff further noted that any changes from the original inspection plan to the long term inspection should be noted.

The maximum stress location was identified by Westinghouse using finite element modeling (FEM). The maximum stress location was included as one of the locations to inspect in the original approved inspection plan, which was documented in Westinghouse letter LTR-A&SA-12-8, Revision 1, and submitted to the NRC as an

enclosure to NSPM letter L-MT-12-090, dated October 22, 2012 (Reference 3). Figure 2 of Westinghouse letter LTR-A&SA-12-8, Revision 1, includes the maximum stress location.

As noted above, LTR-A&SA-12-8, Revision 1, is the original inspection plan, which included the maximum stress location; therefore, the only change between the original inspection plan and the long term inspection plan is the inclusion of re-inspections in accordance with BWRVIP-139-1A.

3.0 REFERENCES

1. Letter L-MT-19-047, from NSPM to US NRC, "Monticello Nuclear Generating Plant (MNGP) Long-Term Replacement Steam Dryer Inspection Plan", dated November 22, 2019. (EPID NO. L-2019-LLL-0035) (ADAMS Accession No. ML19324F851)
2. Email from NRC to NSPM, "Monticello Long Term Steam Dryer Inspection Plan (EPID: L-2019-LLL-0035)", dated April 28, 2020 (ADAMS Accession No. ML20120A027)
3. Letter L-MT-12-090, from NSPM to NRC, "Monticello Extended Power Uprate: Replacement Steam Dryer- Inspection Criteria and Plan (TAC MD9990)", dated October 22, 2012 (ADAMS Accession Nos. ML 12298A032 (non-proprietary NSPM letter) and ML 12298A033 (non-proprietary version of Westinghouse letter, L TR-A&SA-12-8, Revision 1, Attachment A)