

NRR-PMDAPem Resource

From: Kuntz, Robert
Sent: Friday, September 09, 2016 10:45 AM
To: 'Loeffler, Richard A.'
Subject: Request for Additional Information RE: Monticello license amendment request for ILRT extension (CAC MF7359)

Mr. Loeffler,

In a letter dated February 10, 2016 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML16047A272) the Northern States Power Company, a Minnesota corporation, doing business as Xcel Energy (hereafter "NSPM" or "the licensee"), requested an amendment to Renewed Facility Operating License No. DPR-22 in the form of changes to the Technical Specifications (TSs) for the Monticello Nuclear Generating Plant (MNGP).

The License Amendment Request (LAR) proposes changes to Appendix A, TSs, to allow extension of the 10-year frequency of the Type A Integrated Leak Rate Test (ILRT) that is required by TS 5.5.11 to 15 years on a permanent basis.

The Nuclear Regulatory Commission (NRC) staff is reviewing the submittal and has determined that the additional information below is needed to complete its review. During a call held September 9, 2016 to provide clarification of the following RAI, it was agreed that a response would be provided within 30 days. Therefore, the NRC staff anticipates a response to the following RAI on or before October 9, 2016.

Robert Kuntz

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DRAFT REQUEST FOR ADDITIONAL INFORMATION

LICENSE AMENDMENT REQUEST – PERMANENT EXTENSION OF THE 10 CFR 50

APPENDIX J CONTAINMENT TYPE A TEST INTERVAL

MONTICELLO NUCLEAR GENERATING PLANT

DOCKET NO. 50-263

RAI-1

In the LAR, Enclosure 1, Section 4.7.1, Table "NEI 94-01, Revision 2-A, Limitations and Conditions," the fourth "Limitation/Condition" reads "The licensee addresses any tests and inspections performed following major modifications to the containment structure, as applicable. (Refer to the NRC staff's safety evaluation for NEI 94-01, Revision 2, dated June 25, 2008 (SE) Section 3.1.4)."

The "MNGP Response" reads:

There are no major modifications planned for the MNGP that would affect the containment structure.

SE Section 3.1.4 (Reference 2) reads:

Section 9.2.4 of NEI TR 94-01, Revision 2, states that: "Repairs and modifications that affect the containment leakage integrity require LLRT or short duration structural tests as appropriate to provide assurance of containment integrity following the modification or repair. This testing shall be performed prior to returning the containment to operation." Article IWE-5000 of the ASME Code, Section XI, Subsection IWE (up to the 2001 Edition and the 2003 Addenda), would require a Type A test after major repair or modifications to the containment. In general, the NRC staff considers the cutting of a large hole in the containment for replacement of steam generators or reactor vessel heads, replacement of large penetrations, as major repair or modifications to the containment structure. At the request of a number of licensees, the NRC staff has agreed to a relief request from the IWE requirements for performing the Type A test and has accepted a combination of actions consisting of ensuring that: (1) the modified

containment meets the pre-service non-destructive evaluation (NDE) test requirements (i.e., as required by the construction code), (2) the locally welded areas are examined for essentially zero leakage using a soap bubble, or an equivalent, test, and (3) the entire containment is subjected to the peak calculated containment design basis accident pressure for a minimum of 10 minutes (steel containment) and 1 hour (concrete containment), and (4) the outside surfaces of concrete containments are visually examined as required by the ASME Code, Section XI, Subsection IWL, during the peak pressure, and that the outside and inside surfaces of the steel surfaces are examined as required by the ASME Code, Section XI, Subsection IWE, immediately after the test. This is defined as a short duration structural test of the containment. For minor modifications (e.g., replacement or addition of a small penetration), or modification of attachments to the pressure retaining boundary (i.e., repair/replacement of steel containment stiffeners), leakage integrity of the affected pressure retaining areas should be verified by a LLRT.

The LAR Section 4.1.4, "Non-Risk Based Assessment" (Page 31 of 64) reads:

Pressure Testing Requirements

If repair/replacement activities of ASME Section XI, Subsection IWA-4000 become necessary on Class MC components, as authorized by the Fifth Interval ISI Plan Relief Request RR-007, post repair/replacement pressure test requirements for components and parts of the pressure retaining boundary shall comply with the requirements of the 2007 Edition including the 2008 Addenda of ASME Section XI, Subsection IWE-5000, as well as all applicable conditions in 10 CFR 50.55a for post-repair/replacement pressure testing of Class MC components.

Personnel performing post repair/replacement pressure testing required by IWE-5000, Appendix J leak rate tests, are qualified in accordance with the MNGP Primary Containment Leakage Rate Testing Program.

The NRC staff notes that the above LAR excerpts are "forward looking" with respect to plans for any future containment modification. In contrast, the MNGP containment has been in service for approximately 45 years. The NRC staff requests that additional historical information be provided (i.e., a synopsis) about any modifications to the MNGP containment and about the subsequent post modification testing. The synopsis should demonstrate consistency with guidance of SE Section 3.1.4.

RAI-2

Section 9.2.3 of Nuclear Energy Institute 94-01, Revision 0 (Reference 3) reads in part:

For purposes of determining an extended test interval, the performance leakage rate is determined by summing the UCL [upper confidence limit] (determined by containment leakage rate testing methodology described in American National Standards Institute and American Nuclear Society (ANS) 56.8-1994) with As-left MNPLR [minimum pathway leakage rate] leakage rates for penetrations in service, isolated or not lined up in their accident position (i.e., drained and vented to containment atmosphere) prior to a Type A test. In addition, any leakage pathways that were isolated during performance of the test because of excessive leakage must be factored into the performance determination. If the leakage can be determined by a local leakage rate test, the As-found MNPLR for that leakage path must also be added to the Type A UCL. If the leakage cannot be determined by local leakage rate testing, the performance criteria for the Type A test are not met.

LAR Table, "MNGP Type A ILRT Results" in Enclosure 1 displays the Type A test results since December 1984 (Reference 1 – page 17 of 64). For the Type A test of April 2007, the staff requests that a summary breakdown of the test specific data for the MNGP containment "As-Found" Leakage Rate of 0.7323 percent primary containment air weight per day (wt/day).

Consistent with the above excerpt from Section 9.2.3, the detailed breakdown of data should include the cumulative "as left" MNPLR leakage rate penetration and Containment Isolation Valve (CIV) test values used to derive the "As-Found" Leakage Rate of 0.7323 % wt/day. Also provide, the minimum containment pressure (P_a) value (in psig) recorded for the duration of the ILRT.

RAI-3

The concluding sentence of the first paragraph of LAR Enclosure 1, Section 4.4.3 reads:

In accordance with Specification 5.5.11, the allowable maximum pathway total Type B and Type C leakage is $0.6 L_a$ [allowable leakage rate] (or 60 percent of L_a) approximately 285 scfh, where L_a equals 475.1 scfh, excluding the Main Steam Pathway, Specification 5.5.11.a.2.

The staff reviewed the local leak rate summaries from the last five refueling outages (i.e., RFO23 through RFO27) contained in LAR Enclosure 1 (i.e., Section 4.4.3) Table “MNGP Type B and C Local Leak-Rate Test (LLRT) Combined As-Found / As-Left Trend Summary” (Page 39 of 64).

The staff requests the following clarification of two issues pertaining to Table “MNGP Type B and C LLRT Combined As-Found / As-Left Trend Summary”:

- 1) The LLRT data contained in the four columns of the Table, for RFO23 through RFO26, consistently yields a L_a approximately equal to 458.6 scfh for all Minimum and Maximum Pathway Leakage values. For example, for RFO23 the “As-Found” Minimum Pathway Leakage (scfh) yields $75.27 \div 0.1641 = 458.7$ scfh.
In contrast, the LLRT data contained in the last column of the Table, RFO27, consistently yields a L_a approximately equal to 475.1 scfh for all Minimum and Maximum Pathway Leakage values. What caused the value of L_a to increase from 458 scfh to 475 scfh following RFO26 in 2013?
- 2) License Amendment No. 176 for MNGP extended power uprate (EPU) was approved by the NRC staff on December 9, 2013. (Reference 4). As a result of the EPU, the P_a value in TS 5.5.11 increased from 42 psig to 44.1 psig. Currently, what percentage of the components (i.e., containment penetrations and CIVs) have been tested at the EPU elevated P_a ?

RAI-4

MNGP Updated Safety Analysis Report, Appendix K, Section K2.1.31 indicates that the MNGP structures monitoring program is implemented under the MNGP maintenance rule program.

Provide MNGP operating experience, including inspection intervals, relative to the inspection of concrete components, and any corrective action taken to disposition the findings. The response should include the inspection results for the accessible areas of reactor building foundation mat/floor slab, Drywell floor slab, shield walls, and the reactor vessel pedestal. Also, discuss whether existence of or potential for degraded conditions in inaccessible concrete areas were identified and evaluated based on conditions found in accessible areas.

REFERENCES:

1. Xcel Energy® letter (L-MT-16-001) to NRC dated February 10, 2016 “Monticello Nuclear Generating Plant, Docket No. 50-263, Renewed Facility Operating License No. DPR-22, License Amendment Request: Revise TS 5.5.11 to Provide a Permanent Extension of the Integrated Leakage Rate (Type A) Test Frequency from Ten to Fifteen Years” (MF7359) [ADAMS Accession Number ML16047A272].
2. NRC Staff Safety Evaluation, dated June 25, 2008, “Final Safety Evaluation For Nuclear Energy Institute Topical Report (TR) 94-01, Revision 2, “Industry Guideline For Implementing Performance-Based Option Of 10 CFR Part 50, Appendix J” and Electric Power Research Institute Report No. 1009325, Revision 2, August 2007, “Risk Impact Assessment Of Extended Integrated Leak Rate Testing Intervals” (TAC No. MC9663)” [ADAMS Accession No. ML081140105].
3. NEI report 94-01, Revision 0, dated July 26, 1995, “Industry Guideline for Implementing Performance Based Option of 10 CFR Part 50, Appendix J” [ADAMS Accession No. ML11327A025].
4. Letter from T. Beltz NRC to K. Fili, "Monticello Nuclear Generating Plant - Issuance of Amendment No. 176 to Renewed Facility Operating License Regarding Extended Power Uprate," (TAC No. MD9990)," dated December 9, 2013, [ADAMS Accession No. ML13316B298]. [Safety Evaluation (proprietary) ADAMS Accession No. ML13311C644].

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