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To: [Gonzalez, Hipo](#)
Subject: Memo E-mail to File - Summary of August 9, 2022, Meeting with Dominion to Discuss Proposed Alternative Request re: Recirculation Spray Pump Flow Testing (EPID L:2022-LRM-0057)
Date: Friday, September 09, 2022 1:37:00 PM

Hipo,

For your information, shown below is a summary of the August 9, 2022, observation meeting with Dominion Energy Nuclear Connecticut, Inc. to discuss the licensee's planned alternative request related to the flow testing requirements of the containment recirc spray system pumps for Millstone Power Station, Unit No. 3. This e-mail will be added to ADAMS as an official agency record and Listserv'd. Please contact me if you have any questions regarding this meeting.

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CATEGORY 1 PUBLIC MEETING WITH
DOMINION ENERGY NUCLEAR CONNECTICUT, INC. (DENC),
TO DISCUSS PROPOSED ALTERNATIVE REQUEST REGARDING
RECIRCULATION SPRAY PUMP FLOW TESTING
MILLSTONE POWER STATION, UNIT NO. 3
PRE-APPLICATION MEETING
MEETING SUMMARY
AUGUST 9, 2022
DOCKET NO. 50-423

The U.S. Nuclear Regulatory Commission (NRC or the staff) and representatives of Dominion Energy Nuclear Connecticut, Inc. (DENC, the licensee) held a public meeting via teleconference call on August 9, 2022, to discuss the licensee's planned alternative request for Millstone Power Station, Unit No. 3 (MPS3) related to the flow testing requirements of the containment recirc spray system pumps. The licensee's meeting slides are available in ADAMS at Accession No. ML22215A287. The licensee's presentation is summarized as follows:

Overview of Proposed Alternative Request

Pursuant to 10 CFR 50.55a(z)(1), Dominion Energy Nuclear Connecticut, Inc. (DENC) plans to request an alternative to certain American Society of Mechanical Engineers (ASME) Operations & Maintenance (OM) Code, Mandatory Appendix V requirements for the Containment Recirculation Spray System (RSS) Pumps at MPS3. Specifically, DENC will propose an alternative program that requires pump periodic verification (PPV) testing to

be performed at the highest design basis accident flow rate for two RSS pumps in one train, and at reduced flow rate (in a recirc configuration) for the two RSS pumps in the opposite train, during the 24-month interval. The testing flow requirements will be alternated for the trains during the subsequent 24-month intervals, to ensure that all four RSS pumps are periodically tested at design basis flow rate. Since the alignment to test the MPS3 RSS pumps at design basis flow utilizes Residual Heat Removal (RHR) system piping, testing the pumps in a different configuration (i.e., using recirc lines) would improve RHR availability during refueling outages (RFOs) and would be beneficial for RFO planning. In the request, DENC will justify the change based on system conditions, limited pump usage, pump characteristics and successful past RSS pump testing results. Continued testing of the RSS pumps at either design basis or reduced flow rate on a 24-month interval, coupled with predictive monitoring techniques, will also maintain the ability to detect potential degradation and failures. DENC expects to conclude that the proposed alternative testing program would provide an acceptable level of quality and safety in accordance with 10 CFR 50.55a(z)(1).

Background and Scope

The American Society of Mechanical Engineers (ASME) Operations & Maintenance (OM) Code, Mandatory Appendix V, provides requirements for pump periodic verification (PPV) testing, which state that the PPV is to be performed at least once every two years for any pumps that have a design basis flow rate credited in safety analysis. The RSS pumps at MPS3 are in the scope of this requirement per the Inservice Testing (IST) Program, since all four pumps inject from the containment sump to the recirculation spray headers to remove containment heat following a loss-of-coolant accident. The PPV test is required to verify that the pump can meet its required pressure at its highest design basis accident flow rate.

Reason for the Proposed Alternative

The licensee provided a diagram of the RHR system and explained that due to the system configuration, performance of the RSS pump flow tests required by the ASME OM Code make the associated residual heat removal (RHR) pump unavailable and limit the capability of the other RHR pump.

- Testing any RSS pump requires isolating associated RHR pump to establish the test flow path (RSS pumps A & C are connected to RHR train A and RSS pumps B & D are connected to RHR train B).
- The valve alignment to provide a flow path from the tested RSS pump to the refueling water storage tank (RWST) only permits the RHR pump associated with the available (i.e., not tested) RSS train to supply flow to two cold legs.
- To meet the OM Code, the testing requirements cannot be met using the installed recirc lines, because the design basis flow rate required for PPV cannot be achieved.
- If the licensee wanted to try to perform the test in modes 1-4, they would be prohibited by Technical Specification (TS) 3.5.2/3.5.3 requirements, because both RHR pumps would be made inoperable, and this would place the plant in Limiting Condition for Operation (LCO) 3.0.3.
- The RHR pump only delivering flow to two RCS cold legs is considered inoperable (per TS 3.5.2/3.5.3), since a rupture is assumed to occur in one of the two cold legs.

Therefore, to meet the requirements, the licensee's current practice is to test all four RSS pumps each refueling outage. However, performing this testing during refueling outage shutdown modes present challenges for MPS3 due to the RSS/RHR shared piping configuration in that (1) In modes 5 and 6, RSS pump testing must be sequenced to maintain one RHR pump available for its decay heat removal function and (2) RSS pump testing is a competing priority with work on RHR trains and/or its support systems in modes 5 and 6 or when the unit is defueled (mode 0). These considerations, combined with protected train windows, can cause RSS pump testing activities to be on or near outage critical path.

Proposed Resolution of Issue

The licensee's proposed resolution is to propose a request for alternative for the current IST interval for PPV testing of the applicable pumps as follows: (1) testing shall be performed at the highest design basis accident flow rate (using a flow path to the RWST through RHR piping) for two RSS pumps in one train, and at reduced flow rate (using pump recirc lines) for the two RSS pumps in the opposite train during the 24-month interval and (2) the two pumps tested at reduced flow in a given 24-month interval shall be tested at design basis flow in the subsequent 24-month interval.

The licensee stated the alternative request will demonstrate that the proposed testing program would provide reasonable assurance that the RSS pump will continue perform its safety function and would therefore provide an acceptable level of quality and safety in accordance with 10 CFR 50.55a(z)(1).

Schedule

The licensee stated their planned submittal is on track and projected for submission by mid-September 2022. DENC intends to request an approval date of Sept 2023 (i.e., one year from the submission date) to support implementation by the MPS3 fall 2023 (3R22) outage.

Questions from the NRC Staff

The staff asked which ASME Code Edition would be applicable to the alternative request. The licensee stated that the 2012 Edition of the ASME Code, Section XI is applicable. The staff asked at what flowrate the comprehensive testing would be performed. The licensee stated that the same flowrates as the beyond design basis (full flow) tests. The licensee also addressed that the full flow tests would be performed for 2 of the 4 pumps for each outage; the other two pumps would be at a reduced flow on an outage interval (i.e., 18-months but not necessarily during a refueling outage). The two pumps that were tested during the outage would then rotate (to the reduced flow test) on the next interval. Therefore, the full flow test would be performed for all 4 pumps on a 48-month interval (in lieu of 24-month) with the caveat that there would be a reduced flow test between the two outage intervals. In response to the staff's question, the licensee clarified that the associated test results go back to a 10-year history; the licensee indicated they would provide a discussion of the test history in their submittal.

Conclusion

DENC completed its presentation with no open/unanswered questions from the staff and summarized the conclusions as follows: (1) operation and maintenance of the RSS pumps preserves pump performance, as validated by the successful past RSS pump testing; (2) continued testing of the RSS pumps at either design basis or reduced flow on a refueling interval maintains the ability to detect potential degradation and failures, and (3) in addition to testing, the RSS pumps are also subject to predictive monitoring techniques, and therefore, the licensee concluded that the proposed alternative is expected to provide an acceptable level of quality and safety.

No decisions were made regarding the acceptability of the licensee's proposed submittal. There were no members of the public in attendance. To date, no public meeting feedback forms have been submitted through the NRC public meeting feedback system.

LIST OF ATTENDEES
AUGUST 9, 2022, CATEGORY 1 PUBLIC MEETING WITH
DOMINION ENERGY NUCLEAR CONNECTICUT, INC. (DENC),
TO DISCUSS PROPOSED ALTERNATIVE REQUEST
FOR CONTAINMENT RECIRCULATION SPRAY SYSTEM PUMP PERIODIC
VERIFICATION TEST
MILLSTONE POWER STATION, UNIT NO. 3
DOCKET NO. 50-423

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ATTENDEE	ORGANIZATION
Richard Guzman	U.S. Nuclear Regulatory Commission (NRC)
Gurjendra Bedi	NRC
Stewart Bailey	NRC
Shayan Sinha	DENC
Craig Sly	DENC
Jeffrey Stumb	DENC
Timothy Olsowy	DENC
Daniel Beachy	DENC
Dean Rowe	DENC
Alexander Wood	DENC
Russell Sturgis	DENC
Todd Fisher	DENC
Stephan O'Hearn	DENC
Jason Bookmiller	DENC
Ethan Treptow	DENC
Clayton Crouch	DENC