

**From:** [Guzman, Richard](#)  
**To:** ["Wanda D Craft"](#)  
**Subject:** Millstone Unit 2 and 3 - Request for Additional Information - Alternative Requests for Inservice Testing Program  
EPID: (L-2018-LLR-0012 - LLR-0022)  
**Date:** Wednesday, June 20, 2018 11:01:28 AM

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Wanda,

On June 15, 2018, the U.S. Nuclear Regulatory Commission (NRC) staff sent Dominion Energy Nuclear Connecticut, Inc. (DENC, the licensee) the subject Request for Additional Information (RAI) as a draft (via e-mail shown below). This RAI relates to the inservice testing (IST) programs for pumps, valves, and snubbers for the fifth (MPS2) and fourth (MPS3) ten-year IST intervals. You indicated that a clarification call was not necessary to respond to the information request. I understand DENC will provide a response to this RAI within 30 days of the issuance of the RAI. Updated below is the official (final) RAI. A publicly available version of this e-mail and RAI will be placed in the NRC's ADAMS system. Please contact me should you have any questions in regard to this request.

Thanks,  
Rich

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Rich Guzman  
Sr. PM, Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Office: O-9C07 | Phone: 301-415-1030

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**From:** Guzman, Richard  
**Sent:** Friday, June 15, 2018 10:03 AM  
**To:** Wanda D Craft <[wanda.d.craft@dominionenergy.com](mailto:wanda.d.craft@dominionenergy.com)>  
**Subject:** Millstone Unit 2 and 3 - ~~DRAFT~~ Request for Additional Information - Alternative Requests for Inservice Testing Program EPID: (L-2018-LLR-0012 - LLR-0022)

Wanda,

By letter dated March 1, 2018 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML18066A078), Dominion Energy Nuclear Connecticut, Inc. (Dominion Energy, the licensee) submitted proposed relief requests for Millstone Power Station, Unit 2 and Unit 3 (MPS2 and MPS3), associated with the inservice testing (IST) programs for pumps, valves, and snubbers for the fifth (MPS2) and fourth (MPS3) ten-year IST intervals. The Nuclear Regulatory Commission (NRC) staff has determined that additional information is needed to complete its review, as described in the attached request for additional information (RAI).

This RAI is identified as draft at this time to confirm your understanding of the information that the NRC staff needs to complete the evaluation. Please contact me if you would like to set up a conference call to clarify this request for information.

Thanks,

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Rich Guzman  
Sr. PM, Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Office: O-9C07 | Phone: 301-415-1030

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## REQUEST FOR ADDITIONAL INFORMATION

Alternative REQUESTs for THE INSERVICE TESTING PROGRAM

DOMINION ENERGY NUCLEAR CONNECTICUT, INC.

MILLSTONE POWER STATION UNITS 2 AND 3

DOCKET NUMBERS 50-336 AND 50-423

EPID: L-2018-LLR-0012 - 0022

### References:

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Letter from Mark D. Sartain of Dominion Energy Nuclear Connecticut, Inc. (the licensee) to NRC, "Millstone Power Station Units 2 and 3, In-service Testing Program for Pumps, Valves, and Snubbers, Fifth and Fourth 10-Year Interval Updates for Units 2 and 3," dated March 1, 2018 (Agencywide Document Access and Management System (ADAMS) Accession Number ML18066A078).

GDC 35, "Emergency core cooling," states that a system to provide abundant emergency core cooling shall be provided. The system safety function shall be to transfer heat from the reactor core following any loss of reactor coolant at a rate such that (1) fuel and clad damage that could interfere with continued effective core cooling is prevented and (2) clad metal-water reaction is limited to negligible amounts. The GDC also requires that suitable redundancy in components and features, and suitable interconnections, leak detection, isolation, and containment capabilities shall be provided to assure that for onsite electric power system operation (assuming offsite power is not available) and for offsite electric power system operation (assuming onsite power is not available) the system safety function can be accomplished, assuming a single failure.

GDC 37, "Testing of emergency core cooling system," states that the emergency core cooling system shall be designed to permit appropriate periodic pressure and functional testing to assure (1) the structural and leaktight integrity of its components, (2) the operability and performance of the active components of the system, and (3) the operability of the system as a whole and, under conditions as close to design as practical, the performance of the full operational sequence that brings the system into operation,

including operation of applicable portions of the protection system, the transfer between normal and emergency power sources, and the operation of the associated cooling water system.

NUREG-1482, "Guidelines for Inservice Testing at Nuclear Power Plants: Inservice Testing of Pumps and Valves and Inservice Examination and Testing of Dynamic Restraints (Snubbers) at Nuclear Power Plants," Revision 2, Section 2.5.3, Page 2-21, last paragraph, states that to improve the effectiveness and efficiency of the relief request process NEI developed a white paper entitled "Standard Format for Requests from The Commercial Reactor Licensees Pursuant to 10 CFR 50.55a, Revision 1," dated June 7, 2004 (ML070100400) for the guidance for the industry. This NEI guideline states that each affected components is to be listed in relief request. Template 1 of the NEI document states:

1. ASME Code Component(s) Affected

[Provide a description of, the class type, and the quantity of ASME Code components affected. Ensure that each affected component, weld, etc. is listed, not just referenced generically. For example, include the component number, the weld identification numbers, etc.]

NUREG-1482, Revision 2, Section 5.12 states that "the NRC has authorized alternative vibration acceptance criteria for smooth-running pumps on a case-by-case basis in accordance with 10 CFR 50.55a(a)(3). Alternative requests for smooth-running pumps should specify a minimum vibration reference value (= 0.05 inch per second), and these smooth-running pumps must be included in a predictive maintenance (PdM) program." NRC is unable to authorize relief requests for all pumps without knowing their IDs and actual vibration values, which are = 0.05 inch per second.

**RAI 2P-02-1**

Background: In Unit 2 alternative request P-02, the licensee requested an alternative to the requirements in ASME OM Code paragraphs ISTB-3300, ISTB-5100, ISTB-5200, and ISTB-5300 for pumps whose vibration reference value is less than 0.05 inches per second (ips). The licensee refers to these pumps as "smooth running" pumps.

Issue: The licensee did not identify the specific pumps with vibration reference values less than 0.05 ips.

Request: Identify the specific pumps affected by the alternative request.

**RAI 3P-03-1**

Background: In Unit 3 alternative request P-03, the licensee requested an alternative to the requirements in ASME OM Code paragraphs ISTB-3300, ISTB-5100, ISTB-5200, and ISTB-5300 for pumps whose vibration reference value is less than 0.05 inches per second (ips). The licensee refers to these pumps as "smooth running" pumps.

Issue: The licensee did not identify the specific pumps with vibration reference values less than 0.05 ips.

Request: Identify the specific pumps affected by the alternative request.

**RAI 3P-05-1**

Background: In Unit 3 alternative request P-05, the licensee requested an alternative to the requirements in ASME OM Code ISTB, Mandatory Appendix V, "Pump Periodic Verification Test Program," which require pumps to be tested at their design basis accident flow rates credited in the Owner's safety analysis to determine whether the pumps can meet the required pressure at these flow rates. The licensee indicated that system resistance during non-design basis loss-of-coolant accident (LOCA) conditions precludes testing the charging pumps at the design basis LOCA flow rate of 519.5 gallons per minute (gpm). The licensee indicated that it can test the charging pumps at 505 gpm (the comprehensive pump test flow rate) and that engineering calculation shows that the design basis LOCA flow rate of 519.5 gpm can be achieved if a LOCA occurs.

Issue:

1. The licensee did not describe why the flow path limits the flow rate to 505 gpm.
2. Per the requirements of the ASME OM Code, a comprehensive pump test reference flow rate of 505 gpm will result in a lower bound acceptable flow rate of 475 gpm and an alert flow rate as low as 455 gpm. Over the 10-year IST interval, the pump may degrade to these levels. The alternative request does not demonstrate that the design basis LOCA flow rate of 519.5 gpm can be achieved for the duration of the 10-year IST interval if the pump flow rate decreases to these levels.

Request:

1. Describe the flow path that is used to test the pumps and how the flow path resistance prevents the pump from achieving the 519.5 gpm flow rate.
  2. Justify how it will be determined that the pump will be able to achieve the design basis LOCA flow rate of 519.5 gpm throughout the fourth 10-year IST interval considering performance could degrade to 475 gpm or 455 gpm over the 10-year IST interval.
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