From:	Guzman, Richard
To:	"wanda.d.craft@dom.com"
Subject:	Millstone Power Station, Unit 2 Relief Request No. RR-04-25: Summary of NRC Staff Verbal Authorization
Date:	Wednesday, March 29, 2017 3:49:59 PM

Wanda,

Effective today, March 29, 2017, and as discussed in today's 3:00 pm call, the NRC staff communicated its verbal authorization of Dominion Nuclear Connecticut, Inc.'s (DNC, the licensee) Relief Request No. RR-04-25, submitted by DNC letter dated March 29, 2017, for Millstone Power Station, Unit 2 (MPS2), for the period until completion of the core offload of the MPS2 spring 2017 refueling outage. Please see below transcript of the NRC staff's verbal authorization. This e-mail will be added to ADAMS as a publicly available official agency record, documenting the staff's aforementioned approval. The NRC staff's formal safety evaluation will be transmitted via separate correspondence. Please contact me if you have any questions regarding this licensing action.

Thanks,

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Rich Guzman
Sr. PM, Division Operator Reactor Licensing
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Office: O8E-10 | Phone: (301) 415-1030
Richard.Guzman@nrc.gov

VERBAL AUTHORIZATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
PROPOSED ALTERNATIVE RELIEF REQUEST NO. RR-04-25
MILLSTONE POWER STATION UNIT 2
DOMINION NUCLEAR CONNECTICUT, INC.
DOCKET NUMBER 50-336

Technical Evaluation (David Alley, Chief of the Component Performance, Non-Destructive Examination, and Testing Branch, Office of Nuclear Reactor Regulation)

By letter dated March 29, 2017, Dominion Nuclear Connecticut, Inc. (the licensee) requested relief from the requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, IWB-3142, at the Millstone Power Station Unit 2 (MPS2).

Pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a(z)(2), the licensee submitted Relief Request RR-04-25, to propose an alternative to the requirements of ASME Code Section XI, to defer the repair of the degraded MPS2 'B' boric acid transfer pump on the basis that complying with the specified ASME Code requirement to repair the degraded pump would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

On February 28, 2017, the licensee discovered dry boric acid on the MPS2 'B' boric acid transfer pump casing. The source of the boric acid could not be determined. The boric
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

acid deposit was removed and the pump was run for two hours with no evidence of leakage. On March 1, 2017, during an ISI walk down, the licensee discovered dry boric acid in the same location as had been previously identified. The amount of dry boric acid discovered was smaller than the amount originally discovered on February 28, 2017. The pump was then declared non-functional. On March 2, 2017, the pump was tagged out but not drained. Subsequent testing of the pump for 1.5 hours resulted in a wet translucent spot of boric acid approximately .125 inch in diameter. Although the leakage rate could not be determined, growth of the spot confirmed the presence of a through-wall leak. The leakage was determined to be in the pump stuffing box cover. The pump was subsequently isolated on March 9, 2017.

Due to the potentially degraded condition that exist with control element assembly (CEA)-39, the plant shutdown for the spring 2017 MPS2 refueling outage will be accomplished by injection of boron into the reactor coolant system. The licensee contends that the “B” boric acid pump is needed to maximize the boric acid system reliability during the remainder of the operating cycle and for the execution of the plant shutdown and core offload. The licensee noted that the function of the “B” boric acid pump is for reactivity control, but the pump is not credited in the Final Safety Analysis Report, Chapter 14 accident analyses.

ASME Code, Section XI, IWB-3142 provides acceptance standards for ASME Code Class 1 components. These acceptance standards are permitted to be used on Class 2 components such as the “B” boric acid pump. Based on these criteria, an ASME Code compliant repair/replacement is the only viable option to address the “B” boric acid pump leakage. The licensee stated that a replacement part is not readily available and a replacement part has been ordered with expedited delivery. The licensee stated that there are no known degradation mechanisms for the stuffing box cover stainless steel (SS) material in its operating environment. The licensee also stated that the mechanical loads on the pump, including vibration, are low and would not be anticipated to result in service induced flaw growth. The licensee believes the leakage pathway is the result of small voids or porosity that were present in the original casting. The licensee estimated that the minimum thickness required in the location of the leak is 0.0045 inch. The licensee estimated that the thickness of the casting in the area of the leak is 0.25 inch. The estimated operating pressure of the stuffing box cover is 41 pounds per square inch gauge (psig). The licensee used 50 psig in calculations performed to estimate the minimum required thickness of the stuffing box cover as a conservative measure.

The stuffing box cover is fabricated from ASTM A351 CF-8M cast stainless steel. The staff notes that the general corrosion rate of this material in a boric acid environment is negligible. This material is not known to be susceptible to stress corrosion cracking in the environment to which it is exposed. Taking into account the environment and the molybdenum content of this material, it is not expected to be susceptible to pitting corrosion. Therefore, the NRC staff finds that the most likely cause of the leak is small voids or porosity that were present in the original casting.

NRC staff concludes that the most likely cause of the leak in the MPS2 ‘B’ boric acid transfer pump is the result of small voids or porosity that were present in the original casting. The NRC finds that given the operational conditions of the pump, the substantial margin between the estimated required thickness and the estimated casting thickness, the low operating pressure and the small amount of leakage, there is reasonable assurance

that the pump will maintain its structural integrity until completion of the core offload during the spring 2017 refueling outage. In addition, the NRC staff finds that the licensee's hardship justification is acceptable.

Authorization read by James G. Danna, Chief of the Plant Licensing Branch I, NRR
As Chief of the Plant Licensing Branch I, in the Office of Nuclear Reactor Regulation, I agree with the conclusions of the Component Performance, Non-Destructive Examination, and Testing Branch. The NRC staff concludes that the proposed alternative provides reasonable assurance of structural integrity of the MPS2 'B' boric acid transfer pump.

The NRC staff finds that complying with the requirements of IWB-3142 of the ASME Code, Section XI, would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. Accordingly, the NRC staff concludes that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(z)(2). Therefore, as of March 29, 2017, the NRC authorizes the use of Relief Request RR-04-25, at Millstone Power Station Unit 2, until completion of the core offload during the spring 2017 refueling outage.

All other requirements in ASME Code, Section XI, for which relief was not specifically requested and approved in this relief request remain applicable, including third-party review by the Authorized Nuclear Inservice Inspector. This verbal authorization does not preclude the NRC staff from asking additional clarification questions regarding the Relief Request while subsequently preparing the written safety evaluation.