



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

November 29, 2010

Mr. David A. Heacock
President and Chief Nuclear Officer
Dominion Nuclear Connecticut, Inc.
Innsbrook Technical Center
5000 Dominion Boulevard
Glen Allen, VA 23060-6711

SUBJECT: MILLSTONE POWER STATION, UNIT NO. 3 – REQUEST FOR ADDITIONAL INFORMATION REGARDING SECOND 10-YEAR INTERVAL INSERVICE INSPECTION PROGRAM RELIEF REQUESTS (TAC NOS. ME3809, ME3810, ME3811, ME3812, ME3813, ME3814, ME3815, ME3816, ME3817, AND ME3818)

Dear Mr. Heacock:

By letter dated April 19, 2010 (Agencywide Documents Access and Management System Accession No. ML101130187), Dominion Nuclear Connecticut, Inc. (DNC or the licensee), submitted relief requests IR-2-51, IR-2-52, IR-2-53, IR-2-54, IR-2-55, IR-2-56, IR-2-57, IR-2-58, IR-2-59, and IR-2-60 for Millstone Power Station, Unit No 3. DNC requested relief from certain requirements of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI for the second 10-year inservice inspection interval, in which the licensee adopted the 1989 Edition with no Addenda. The U.S. Nuclear Regulatory Commission (NRC) staff has contracted Pacific Northwest National Laboratory (PNNL) to help review the request. The NRC staff, in conjunction with PNNL, has reviewed the information submitted by the licensee, and based on this review, determined that additional information is required to complete the evaluation.

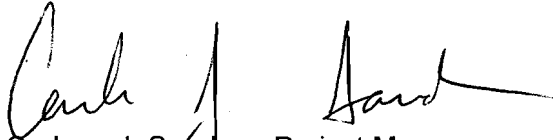
The draft questions were sent to Mr. William Bartron, of your staff, to ensure that the questions were understandable, the regulatory basis for the questions was clear, and to determine if the information was previously docketed. On November 23, 2010, Ms. Marylou Calderone, of your staff, agreed that you would provide a response by January 20, 2011.

D. Heacock

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If you have any questions regarding this matter, please contact me at 301-415-1603.

Sincerely,

A handwritten signature in black ink, appearing to read "Carleen J. Sanders". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Carleen J. Sanders, Project Manager
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-423

Enclosure:
Request for Additional Information

cc w/encl: Distribution via Listserv

REQUEST FOR ADDITIONAL INFORMATION
ASME SECTION XI INSERVICE INSPECTION PROGRAM

RELIEF REQUESTS

SECOND 10-YEAR INSPECTION INTERVAL

DOMINION NUCLEAR CONNECTICUT, INC.

MILLSTONE POWER STATION, UNIT NO. 3

DOCKET NO. 50-423

By letter dated April 19, 2010 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML101130187), Dominion Nuclear Connecticut, Inc. (DNC or the licensee), submitted relief requests (RRs) IR-2-51, IR-2-52, IR-2-53, IR-2-54, IR-2-55, IR-2-56, IR-2-57, IR-2-58, IR-2-59, and IR-2-60 for Millstone Power Station, Unit No. 3 (MPS3). DNC requested relief from certain requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI for the second 10-year inservice inspection (ISI) interval, in which the licensee adopted the 1989 Edition with no Addenda.

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a(g)(5)(iii), the licensee has submitted the subject requests for relief for limited examinations in multiple ASME Code Examination Categories. The ASME Code requires that 100% of the examination volumes, or surface areas, described in ASME Code, Section XI, Tables IWB-2500, IWC-2500, and IWF-2500 be performed during each interval. The licensee stated that 100% of some of the ASME Code-required volumes, or surface areas, are impractical to obtain at MPS3.

The U.S. Nuclear Regulatory Commission (NRC) staff has contracted Pacific Northwest National Laboratory (PNNL) to help review the request. The NRC staff, in conjunction with PNNL, has reviewed the information submitted by the licensee, and based on this review, determined the following information is required to complete the evaluation.

1. IR-2-51, ASME Code, Section XI, Examination Category B-A, Items B1.11, B1.12, B1.21, and B1.22, Pressure Retaining Welds in Reactor Vessel
 - a) Based on the limited descriptions and sketches provided in the licensee's submittal, it appears that examinations for ASME Code, Section, XI, Table IWB 2500-1, Category B-A, Items B1.11, B1.12, B1.21, and B1.22 were performed from the inside surface of the reactor pressure vessel (RPV). State whether access to the subject welds from the outside of the RPV is possible, and discuss the potential for increasing ASME Code volumetric coverage by applying examinations from the outside surface of the RPV.

Enclosure

- b) Discuss whether other welds in ASME Code, Section XI, Examination Category B-A have been examined to the full, ASME Code-required volumetric extent, whether any indications were found as a result of these examinations, and the final disposition of the indications.
 - c) Verify that the descriptions below the coverage sketches for longitudinal welds in Attachment 1, pages 8 and 10, should be labeled ASME Code, Section XI, Examination Category B-A, Item B1.12, and not B1.21 as currently shown.
2. IR-2-52, ASME Code, Section XI, Examination Category B-B, Items B2.11 and B2.40, Pressure Retaining Welds in Vessels Other Than Reactor Vessels
- a) As applicable, describe Nondestructive Examination (NDE) equipment (ultrasonic (UT) scanning apparatus) and details of the listed obstructions (size, shape, proximity to the weld, etc.) to demonstrate accessibility limitations. Discuss whether alternative methods or advanced technologies could be employed to maximize ASME Code coverage.
 - b) Fully clarify the wave modality and insonification angles used for all ultrasonic examinations.
 - c) Discuss whether similar welds in ASME Code, Section XI, Examination Category B-B have been examined to the full, ASME Code-required extent, whether any indications were found as a result of these full examinations, and the final disposition of the indications.
 - d) Please also state the materials of construction and the wall thicknesses for the subject pressurizer (PZR) shell-to-head weld and steam generator (SG) tubesheet-to-head weld.
3. IR-2-53, ASME Code, Section XI, Examination Category B-D, Items B3.90, B3.100, and B3.130, Full Penetration Welded Nozzles in Vessels

It is unclear from the information in the licensee's submittal which UT wave mode corresponds to each insonification angle. Please clarify the wave modality and insonification angles used for all UT examinations performed on the RPV, PZR, and SG nozzle-to-head welds listed in ASME Code, Section XI, Examination Category B-D.

4. IR-2-54, ASME Code, Section XI, Examination Category B-H, Item B8.20, Integral Attachments for Vessels

Please state the materials of construction and what type of surface examination was performed (liquid penetrant (PT) or magnetic particle (MT)) for the integrally welded attachments to the PZR.

5. IR-2-55, ASME Code, Section XI, Examination Category C-A, Item C1.20, Pressure Retaining Welds in Pressure Vessels
 - a) As applicable, describe NDE equipment (UT scanning apparatus) and details of the listed obstructions (size, shape, proximity to the weld, etc.) to demonstrate accessibility limitations. Discuss whether alternative methods or advanced technologies could be employed to maximize ASME Code coverage.
 - b) Fully clarify the wave modality and insonification angles used for all ultrasonic examinations.
 - c) Please also state the materials of construction and the wall thickness for the Residual Heat Removal heat exchanger.
6. IR-2-56, ASME Code, Section XI, Examination Category C-C, Item C3.20, Integral Attachments for Vessels, Piping, Pumps, and Valves
 - a) Please state the materials of construction and what type of surface examination was performed (PT or MT) for each of the integrally welded attachments to ASME Code, Class 2 piping.
 - b) Please verify that the ASME table is IWC-2500, not IWB-2500 as stated in Section 3 and Section 6.
7. IR-2-57, ASME Code, Section XI, Examination Category C-F-1, Items C5.11 and C5.21, Pressure Retaining Welds in Austenitic Stainless Steel or High Alloy Piping
 - a) As applicable, describe NDE equipment (UT scanning apparatus) and details of the listed obstructions (size, shape, proximity to the weld, etc.) to demonstrate accessibility limitations. Discuss whether alternative methods or advanced technologies could be employed to maximize ASME Code coverage.
 - b) Fully clarify the wave modality and insonification angles used for all UT examinations.
 - c) Please confirm that the required surface examinations (PT or MT) were performed for the subject welds, whether these surface examinations were full ASME Code examinations (>90% coverage), and describe any indications that were detected.
 - d) Confirm that all examinations listed in ASME Code, Section XI, Examination Category C-F-1, were conducted in accordance with the performance demonstration requirements described in ASME Code, Section XI, Appendix VIII.
8. IR-2-58, ASME Code, Section XI, Examination Category F-A, Item F1.40, Supports
The basis for this request is conflicting.
 - a) DNC stated that there is a permanent obstruction caused by the RPV insulation panels and that the area is difficult to access due to the cavity seal ring needing to be

modified or removed. The licensee also discusses the radiation exposure that would result in the modification and/or removal of the permanent obstruction (RPV insulation panels). It appears to the NRC staff that the subject obstructions can be removed, therefore, the licensee needs to provide additional information to clarify why it is impractical to perform the ASME Code-required examination. Also further explanation of what the burden associated with modifying or removing cavity seal ring is needed.

- b) What is the total man-rem associated with this examination, including modification and/or removal of the permanent cavity seal ring to access the support, the removal and reinstallation of the permanent obstructions (RPV panels), and any other preparations/examination times that are required?
9. IR-2-59, ASME Code, Section XI, Examination Category R-A, Items R1.11 and R1.20, Risk Informed Piping Examinations
- a) Please submit detailed and specific information to support the bases for limited volumetric coverage in ASME Code, Section XI, Examination Category R-A piping welds, and thereby, demonstrate impracticality.
 - b) As applicable, describe NDE equipment (UT scanning apparatus) and details of the listed obstructions (size, shape, proximity to the weld, etc.) to demonstrate accessibility limitations. Discuss whether alternative methods or advanced technologies could be employed to maximize ASME Code coverage.
 - c) Fully clarify the wave modality and insonification angles used for all UT examinations.
 - d) Please state the materials of construction for the welds and base materials.
 - e) Please confirm whether the examinations listed for all ASME Code, Section XI, Examination Category R-A welds were conducted in accordance with the performance demonstration requirements of ASME Code, Section XI, Appendix VIII.
 - f) Confirm that all of the ASME Code, Section XI, Examination Category R-A welds are Item R1.11 (elements subject to thermal fatigue) and R1.20 (elements not subject to a known damage mechanism) per ASME Code Case N-577,¹ as shown in the licensee's table.
 - g) Further discuss whether additional or alternative welds could have been examined to augment the reduced volumetric coverage resulting from the limited examinations of the subject welds.

¹ ASME Code Case N-577 has not been approved for use in RG-1.147, Revision 15. Licensees base their RI-ISI inspection sample size and examination methodology on Table 1 of ASME Code Case N-577.

10. IR-2-60, ASME Code, Section XI, Examination Category B-P, Item B15.11, All Pressure Retaining Components

The following questions pertain to the 2nd 10-year ISI interval at MPS3:

- (a) The request provides proposed alternative means for detecting leakage of the RPV flange seal leak-off piping, however the interval the relief is requested for has already ended. Please explain what was done to detect leakage during the 2nd 10-year interval at MPS3. Please explain why alternative information was provided.
- (b) Provide the date(s) of the previous examinations of the RPV flange seal leak-off piping visual inspections and whether any indications of leakage were detected.

The following question pertains to the 1st 10-year ISI interval at MPS3:

- (c) The hydrostatic test of the RPV flange seal leak-off line was also required during the 1st 10-year interval at MPS3 (ASME Code of Record for the 1st interval is the 1983 Edition through the 1983 Summer Addenda). Please explain how the test was performed during the 1st interval. If the test was not performed, please explain what action has been taken and/or what action will be taken.

D. Heacock

- 2 -

If you have any questions regarding this matter, please contact me at 301-415-1603.

Sincerely,

/RA/

Carleen J. Sanders, Project Manager
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-423

Enclosure:
Request for Additional Information

cc w/encl: Distribution via Listserv

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*By Memos dated

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| OFFICE | LPL1-2/PM | LPL1-2/LA | DCI/CVIB | LPL1-2/BC |
| NAME | CSanders | ABaxter | MMitchell* | HChernoff (REnnis for) |
| DATE | 11/29/10 | 11/16/10 | 08/27/2010 | 11/29/10 |