



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

August 26, 2011

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. 2 – REQUEST FOR ADDITIONAL  
INFORMATION REGARDING THIRD 10-YEAR INTERVAL INSERVICE  
INSPECTION PROGRAM RELIEF REQUESTS (TAC NOS. ME5998, ME5999,  
ME6000, ME6001, ME6002, ME6003, ME6004, ME6005, ME6006, AND  
ME6007)

Dear Mr. Heacock:

By letter dated March 30, 2011 (Agencywide Documents Access Management System Accession No. ML110960361), Dominion Nuclear Connecticut, Inc. (DNC or the licensee) submitted relief requests RR-89-69, RR-89-70, RR-89-71, RR-89-72, RR-89-73, RR-89-74, RR-89-75, RR-89-76, RR-89-77, and RR-89-78 for Millstone Power Station, No. 2 (MPS2). DNC requested relief from certain requirements of the American Society of Mechanical Engineers *Boiler and Pressure Vessel Code*, Section XI for the third 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 requests. 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 Ms. Wanda Craft, 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 August 22, 2011, Ms. Craft agreed that you would provide a response by September 23, 2011.

D. Heacock

- 2 -

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', written over a horizontal line.

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

Docket No. 50-336

Enclosure:

Request for Additional Information

cc w/encl: Distribution via ListServ

REQUEST FOR ADDITIONAL INFORMATION  
ASME SECTION XI INSERVICE INSPECTION PROGRAM  
RELIEF REQUESTS  
THIRD 10-YEAR INSERVICE INSPECTION INTERVAL  
DOMINION NUCLEAR CONNECTICUT, INC.  
MILLSTONE POWER STATION, UNIT NO. 2  
DOCKET NUMBER: 50-336

By letter dated March 30, 2011 (Agencywide Documents Access Management System Accession No. ML110960361), Dominion Nuclear Connecticut, Inc. (DNC or the licensee) submitted relief requests RR-89-69, RR-89-70, RR-89-71, RR-89-72, RR-89-73, RR-89-74, RR-89-75, RR-89-76, RR-89-77, and RR-89-78 for Millstone Power Station, Unit No. 2 (MPS2). DNC requested relief from certain requirements of the American Society of Mechanical Engineers *Boiler and Pressure Vessel Code* (ASME Code), Section XI for the third 10-year inservice inspection 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 and IWC-2500 be performed during each interval. The licensee stated that 100 percent of the ASME Code-required volumes, or surface areas, are impractical to obtain at MPS2.

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. RR-89-69, ASME Code, Section XI, Examination Category B-A, Items B1.21 and B1.22, Pressure Retaining Welds in Reactor Vessel
  - a. The licensee stated that approximately 43 to 72.5 percent of the ASME Code-required volumetric coverage could be obtained on reactor pressure vessel (RPV) Lower Head Meridional Welds BHV-1, -2, -3, -4, -5, and -6 and RPV Lower Shell-to-Lower Head Weld HS-1. Schematics have been provided of the RPV lower shell and lower head area depicting limitations of the core support lugs, flow skirt, and core barrel stabilizers. However, these drawings are unclear and extremely difficult to read. Please resubmit clear schematics/sketches to better describe the limitations of the RPV circumferential and meridional head welds.
  - b. The ASME Code states that essentially 100 percent of the "accessible length" of the subject welds must be examined. Please state the accessible length of each of the

Enclosure

RPV circumferential and meridional head welds, and clarify whether the volumetric coverage percentages obtained are applicable to the accessible length, as opposed to the entire length of the weld.

2. RR-89-73, ASME Code, Section XI, Examination Category C-B, Item C2.21, Pressure Retaining Nozzle Welds in Vessels

Confirm that the required surface examinations, liquid penetrant (PT) or magnetic particle (MT) were performed for the subject welds in RR-89-73, and whether these surface examinations met the full ASME Code examinations (>90 percent coverage). Further, describe any indications that were detected and how these were resolved.

3. RR-89-74, ASME Code, Section XI, Examination Category C-C, Item C3.20, Integral Attachments for Vessels, Piping, Pumps, and Valves

- a. The licensee stated that examinations for the Main Steam Restraint Lug MSR-2 attachment welds were limited due to restraint members within close proximity of each of the lugs. It is further stated that, to increase examination coverage, support members of the pipe rupture restraint would need to be disassembled and removed, which would require a significant effort that is considered impractical due to impact to plant equipment.

It is unclear what is meant by "impact to plant equipment" and why the removal of the subject restraint is considered an impracticality. Submit detailed information on how the removal of the subject restraint would be an "impact to plant equipment" and why not removing this restraint, to gain access to the branch piping weld and maximize volumetric coverage, will continue to provide an acceptable level of quality and safety.

- b. The schematics provided are unclear and difficult to read. Please resubmit higher quality schematics/sketches to clearly describe the limitations of the MSR-2 pipe restraint lug attachment welds.

4. RR-89-76, ASME Code, Section XI, Examination Category C-F-2, Item C5.81, Pressure Retaining Welds in Carbon or Low Alloy Steel Piping

The licensee stated that for ASME Code Class 2 Pipe Branch Connection Circumferential Weld MSB-CG-16, examination was limited due to the obstruction from pipe rupture restraint support members that are within close proximity of the weld. It is further stated that, to increase the examination coverage, support members of the pipe rupture restraint would need to be disassembled and removed, which would require a significant effort that is considered impractical due to impact to plant equipment.

It is unclear what is meant by "impact to plant equipment" and why the removal of the pipe restraint is considered an impracticality. Submit detailed information on how the removal of the pipe restraint would be an "impact to plant equipment" and why not removing this restraint to gain access to the branch piping weld and maximize volumetric

coverage, will continue to provide an acceptable level of quality and safety.

5. RR-89-77, ASME Code, Section XI, Examination Category R-A, Item R1.20, Risk Informed Piping Examinations
  - a. Confirm whether the examinations listed for all ASME Code, Section XI, Examination Category R-A welds were conducted in accordance with the performance demonstration initiative (PDI) requirements of ASME Code, Section XI, Appendix VIII.
  - b. Could additional or alternative welds have been examined to augment the reduced volumetric coverage resulting from the limited examinations of the subject welds?
  - c. The PDI program has defined examinations of stainless steel piping from one direction terminating at the weld centerline and from the opposite direction also terminating at the weld centerline for determining coverage in the axial direction. The PDI developed this coverage approach to support examinations with a weld crown. For examinations over the weld crown and on to the opposite side of the weld, PDI has termed that coverage volume as a best effort. Describe the surface waviness at and on the weld crown and the percent of best-effort coverage achieved on the opposite side of the weld. Could coverage be improved using phased array techniques? Please explain in detail.
6. RR-89-78, ASME Code Section XI, Examination Category B-P, Item B15.11, Reactor Vessel, Pressure Retaining Boundary

The following questions pertain to the third 10-year ISI interval at MPS2:

- a. 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 first and second 10-year ISI interval at MPS2:

- b. What was the ASME Code of Record for the first and second interval at MPS2? Was the hydrostatic test of the RPV flange seal leak-off line required during the first and second 10-year interval at MPS2? If so, please explain how the test was performed during the first and second interval and 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. 50-336

Enclosure:  
Request for Additional Information

cc w/encl: Distribution via ListServ

DISTRIBUTION:

PUBLIC

RidsAcrsAcnw\_MailCTR Resource

RidsNrrDorlLpl1-2 Resource

RidsNrrPMMillstone Resource

RidsOgcRp Resource

TMcIellan, NRR

MAudrain, NRR

LPLI-2 R/F

RidsNrrDorlDpr Resource

RidsNrrDciCvib Resource

RidsNrrLAABaxter Resource

RidsRgn1MailCenter Resource

DNaujock, NRR

SCumblidge, NRR

**Accession Number: ML112170358**

**\*by Memo Dated**

OFFICE	NRR/LPLI-2/PM	NRR/LPLI-2/LA	NRR/DCI/CVIB	NRR/LPLI-2/BC
NAME	CSanders	ABaxter	MMitchell*	HChernoff (GMiller for)
DATE	8/25/11	8/24/11	07/14/2011	8/26/11

**Official Record Copy**