



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

December 22, 2009

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 – REVIEW OF THE 2008 STEAM
GENERATOR TUBE INSERVICE INSPECTION REPORT (TAC NO. ME0942)

Dear Mr. Heacock:

By letter dated March 13, 2009, as supplemented by letter dated November 23, 2009 (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML090850344 and ML093350528, respectively), Dominion Nuclear Connecticut, Inc. (DNC or the licensee), submitted information summarizing the results of the 2008 steam generator tube inspections at Millstone Power Station, Unit No. 3 (MPS3). These inspections were performed during the twelfth refueling outage. Additional details of these inspections are documented in a conference call summary dated December 12, 2008 (ADAMS Accession No. ML083370136).

The Nuclear Regulatory Commission (NRC) staff has completed its review of the information provided and concludes that DNC provided the information required by the MPS3 technical specifications and that no additional follow-up is required. The NRC's review is enclosed.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Carleen J. Sanders", is written over a horizontal line.

Carleen J. Sanders, Project Manager
Plant Licensing Branch 1-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-423

Enclosure:
As stated

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
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REVIEW OF THE 2008 STEAM GENERATOR TUBE

INSERVICE INSPECTION REPORT

MILLSTONE POWER STATION, UNIT NO. 3

DOCKET NUMBER 50-423

By letter dated March 13, 2009, as supplemented by letter dated November 23, 2009 (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML090850344 and ML093350528, respectively), Dominion Nuclear Connecticut, Inc. (DNC or the licensee), submitted information summarizing the results of the 2008 steam generator (SG) tube inspections at Millstone Power Station, Unit No. 3 (MPS3). These inspections were performed during the twelfth refueling outage (3R12). Additional details of these inspections are documented in a conference call summary dated December 12, 2008 (ADAMS Accession No. ML083370136).

MPS3 has four Westinghouse Model F SGs, each of which contains 5,626 thermally-treated Alloy 600 tubes. Each tube has a nominal outside diameter of 0.688 inches and a nominal wall thickness of 0.040 inches. During SG fabrication, the tubes were hydraulically expanded at both ends, over the full depth of the 21.23-inch thick tubesheet. The tubesheet was drilled on a square pitch with 0.98-inch spacing. There are 59 rows and 122 columns in each SG. The radius of the row 1 U-bends is 2.20 inches. The U-bends in Rows 1 through 10 were stress relieved after bending. Eight Type 405 stainless steel support plates, which have broached quatrefoil holes, support the vertical section of the tubes, and six anti-vibration bars support the U-bend section of the tubes.

As of the end of Cycle 12 (October 2008), the SGs had approximately 16.6 effective full-power years of operation. A 7% power uprate was implemented for Cycle 13.

DNC provided the scope, extent, methods, and results of their SG tube inspections in the documents referenced above. In addition, DNC described corrective actions (i.e., tube plugging) taken in response to the inspection findings.

After review of the information provided by the licensee, the NRC staff has the following comments/observations:

- Tube end cracking indications were detected on the hot-leg side of all four SGs and on the cold-leg side of SG D. Axial and circumferential indications were reported in the tube end examination.
- J-Tubes 1, 15, 16, and 30 in all four SGs have shown signs of flow-accelerated corrosion (FAC) at the interface between the nozzle weld and the header interface, on the inside diameter of the header. The FAC at these locations was previously repaired via the weld overlay process in all four SGs. During 3R12, the upper bundle region of SG B was inspected, including the J-tubes and weld overlay repair locations. No new signs of FAC

Enclosure

were identified and the weld overlays were intact with no degradation. Some minor surface rust was observed on the upper internals, which are fabricated from carbon steel.

Based on a review of the information provided by DNC, the NRC staff concludes that DNC provided the information required by the MPS3 technical specifications. The SG tube inspections at MPS3 appear to be consistent with the objective of detecting potential tube degradation and the inspection results appear to be consistent with industry operating experience at similarly designed and operated units.

Principal Contributor: T. Morgan

Date: December 22, 2009

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/ra/

Carleen J. Sanders, Project Manager
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