



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

October 19, 2015

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

SUBJECT: MILLSTONE POWER STATION, UNIT 3 – SUMMARY OF THE STAFF'S
REVIEW OF THE FALL 2014 STEAM GENERATOR TUBE INSERVICE
INSPECTIONS (TAC NO. MF6084)

Dear Mr. Heacock:

By letters dated February 9, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15050A041) and September 4, 2015 (ADAMS Accession No. ML15258A184), Dominion Nuclear Connecticut, Inc. (the licensee) submitted information summarizing the results of the fall 2014 steam generator tube inspections performed at Millstone Power Station, Unit 3 (MPS3). These inspections were performed during the MPS3 refueling outage 16.

The U.S. Nuclear Regulatory Commission (NRC) staff has completed its evaluation of the steam generator tube inspection summary report and concludes that the licensee provided the information required by the MPS3 Technical Specifications and no additional follow-up is required at this time. The results of the NRC staff's review of the report submitted by the licensee are summarized in the enclosed NRC staff's evaluation.

If you have any questions regarding this matter, please call me at 301-415-1030 or Richard.Guzman@nrc.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Richard V. Guzman".

Richard V. Guzman, Senior Project Manager
Plant Licensing I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-423

Enclosure:
Steam Generator Tube Inspection Report
Summary

cc w/enclosure: Distribution via Listserv

REVIEW SUMMARY OF THE FALL 2014
STEAM GENERATOR TUBE INSERVICE INSPECTIONS

MILLSTONE POWER STATION, UNIT 3

DOCKET NO. 50-423

TAC NO. MF6084

By letters dated February 9, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15050A041), and September 4, 2015 (ADAMS Accession No. ML15258A184), Dominion Nuclear Connecticut, Inc. (the licensee), submitted information summarizing the results of the fall 2014 steam generator (SG) tube inservice inspections at Millstone Power Station, Unit 3 (MPS3). In a letter dated June 23, 2015 (ADAMS Accession No. ML15173A000), the U.S. Nuclear Regulatory Commission (NRC) staff summarized a conference call held with the licensee regarding the 2014 inspections. These inspections were performed during the sixteenth refueling outage (RFO).

MPS3 has four Westinghouse Model F steam generators, 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 tube 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.

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

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

- The secondary moisture separator chevrons appeared to be straight and in good condition, but showed a light coating of sludge deposit. The perforated holes of the outer plate showed minor buildup of sludge in the bore of the hole. No holes were observed to be plugged. The primary moisture separator swirl vanes appeared to be in good condition, but had a slight deposit on them; however, the edges were sharp showing no indication of erosion. There was a heavy deposit of sludge on the steam drum shell wall at the upper deck. This deposit became thicker higher up on the shell wall.
- Deposit minimization treatment (DMT) was applied in all four SGs during RFO 16. The application of DMT and water lancing activities removed approximately 11,872 pounds of material from the secondary side of the four SGs. In order to further reduce the overall deposit loading, DMT is planned to be performed again during RFO 17.

Enclosure

Based on a review of the information provided by the licensee, the staff concludes that the licensee provided the information required by their technical specifications. The SG tube inspections at Millstone Unit 3 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: A. Huynh, NRR

Date: October 19, 2015

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Sincerely,
/RA/
Richard V. Guzman, Senior Project Manager
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*by memo dated

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NAME	RGuzman	KGGoldstein	GKulesa	BBeasley	RGuzman
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