

September 10, 2003

Mr. David A. Christian
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SUBJECT: MILLSTONE POWER STATION, UNIT NO. 2 - REVIEW OF STEAM
GENERATOR TUBE INSERVICE INSPECTION REPORTS FOR THE 2002
OUTAGE (TAC NO. MB7965)

Dear Mr. Christian:

By letters dated March 12, 2002, and February 28, 2003, Dominion Nuclear Connecticut, Inc. (DNC) submitted reports to the U.S. Nuclear Regulatory Commission (NRC) summarizing the steam generator tube inservice inspection performed at Millstone Power Station, Unit No. 2 (MP2) during the 2002 refueling outage. The reports were submitted as required by MP2 Technical Specifications (TSs) 4.4.5.1.5 and 6.9.1.5.b.

The NRC staff has completed its review of your submittals as documented in the enclosed Safety Evaluation. The staff concludes that DNC has provided the information required by the TSs and that no additional follow-up is required at this time.

Sincerely,

/RA/

Richard B. Ennis, Senior Project Manager, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-336

Enclosure: As stated

cc w/encl: See next page

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
REVIEW OF STEAM GENERATOR TUBE INSERVICE INSPECTION REPORTS
FOR THE 2002 OUTAGE
DOMINION NUCLEAR CONNECTICUT, INC.
MILLSTONE POWER STATION, UNIT NO. 2
DOCKET NO. 50-336

By letters dated March 12, 2002, and February 28, 2003, Dominion Nuclear Connecticut, Inc. (the licensee) submitted reports to the U.S. Nuclear Regulatory Commission (NRC) summarizing the steam generator (SG) tube inservice inspection performed at Millstone Power Station, Unit No. 2 (MP2) during the 2002 refueling outage. The reports were submitted as required by MP2 Technical Specifications (TSs) 4.4.5.1.5 and 6.9.1.5.b. A summary of the NRC staff's evaluation of the inspection results is provided below.

During the 2002 outage, the licensee inspected only SG 1. This SG was fabricated by Babcock and Wilcox International and consists of thermally-treated Inconel 690 tubing (8522 total tubes). The SG utilizes a hydraulic tubesheet expansion method and has Type 410 stainless steel lattice grid tube supports. This SG was placed in operation in 1993.

The SG tube inspection summary stated that the licensee inspected 100% of the tubes in SG 1 full length (tube end cold to tube end hot) using a bobbin probe. A total of 57 additional inspections were conducted using a +Point™ probe. Of these additional inspections, 37 were special interest locations (bulges, dents, dings, hot leg tube sheet areas, and manufacturing burnish marks) and 20 were potential loose part locations. No SG tubes were plugged due to the SG tube inspection results.

The licensee reported two tubes (R40C155 and R140C93) that exhibited tube degradation indications. Both tube degradation indications were identified to have a 9% through-wall wear at fan bar locations (fan bars 6 and 8).

Seventy-seven manufacturing burnish marks (MBMs) were identified during the bobbin probe inspections. The MBM indications reported for this inspection were compared to the 1991 baseline inspection results and exhibited no change from the baseline inspection.

The licensee conducted extensive visual examinations of the top of tubesheet, the blowdown holes, the inner bundle, and the tubesheet annulus of SG 1 to investigate the source of Loose Parts Monitoring System (LPMS) alarms which occurred in February 2002. Due to the inspections, a small foreign object was found. This foreign object was lodged between four tubes (R23C102, R24C101, R24C102, and R24C103). Based on these visual inspections, the bobbin data for these tubes was reviewed. This review confirmed that a marginal, potential

loose part signal was present in three of these tubes. These potential loose part signals were present in the 1994 and 1997 inspection data. No tube damage was associated with these potential loose part signals. The loose part was not retrieved; however, the licensee addressed potential problems associated with leaving the loose part in the SG within the Condition Monitoring and Operational Assessment. The licensee concluded that this loose part did not result in the LPMS alarm. As a result, the upper steam drum and the upper tube bundle were inspected. No evidence of a loose part, which could have caused the LPMS alarm, was found. The licensee subsequently concluded that the LPMS alarm was a result of a cable malfunction in the LPMS system.

The licensee conducted a condition monitoring assessment which concluded that the structural and leakage performance criteria were met for the previous operating cycle. Based on these results, the licensee indicated there was reasonable assurance that the structural and leakage integrity performance criteria will be met throughout the next operating interval between inspections.

Based on the staff's review of the information provided by the licensee, the staff concludes that the licensee has provided the information required by the TSs and that no additional follow-up is required at this time.

Principal Contributor: L. Miller

Date: September 10, 2003