

July 19, 2006

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

SUBJECT: REVIEW OF STEAM GENERATOR TUBE INSERVICE INSPECTION REPORT  
FOR THE 2004 REFUELING OUTAGE AT MILLSTONE POWER STATION,  
UNIT NO. 3 (TAC NO. MC6714)

Dear Mr. Christian:

By letter dated April 7, 2005, as supplemented by letter dated December 14, 2005, Dominion Nuclear Connecticut, Inc. (DNC) submitted reports summarizing the steam generator (SG) tube inservice inspections performed during the 9<sup>th</sup> refueling outage (2004) at Millstone Power Station, Unit No. 3 (MPS3). Also, by letter dated May 3, 2004, DNC submitted the 15-day SG tube plugging report in accordance with Technical Specification (TS) Sections 4.4.5.5.a and 6.9.2.

As discussed in the enclosed evaluation, the Nuclear Regulatory Commission (NRC) staff concluded that DNC provided the information required by the TSs for MP3S, and the NRC staff did not identify any technical issues that warranted follow-up action at this time. If you have any questions, please contact me at (301) 415-1484.

Sincerely,

**/RA/**

Victor Nerses, Senior Project Manager  
Plant Licensing Branch I-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-423

Enclosure:  
As stated

cc w/encl: See next page

July 19, 2006

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

SUBJECT: REVIEW OF STEAM GENERATOR TUBE INSERVICE INSPECTION REPORT  
FOR THE 2004 REFUELING OUTAGE AT MILLSTONE POWER STATION,  
UNIT NO. 3 (TAC NO. MC6714)

Dear Mr. Christian:

By letter dated April 7, 2005, as supplemented by letter dated December 14, 2005, Dominion Nuclear Connecticut, Inc. (DNC) submitted reports summarizing the steam generator (SG) tube inservice inspections performed during the 9<sup>th</sup> refueling outage (2004) at Millstone Power Station, Unit No. 3 (MPS3). Also, by letter dated May 3, 2004, DNC submitted the 15-day SG tube plugging report in accordance with Technical Specification (TS) Sections 4.4.5.5.a and 6.9.2.

As discussed in the enclosed evaluation, the Nuclear Regulatory Commission (NRC) staff concluded that DNC provided the information required by the TSs for MP3S, and the NRC staff did not identify any technical issues that warranted follow-up action at this time. If you have any questions, please contact me at (301) 415-1484.

Sincerely,

**/RA/**

Victor Nerses, Senior Project Manager  
Plant Licensing Branch I-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-423

Enclosure:  
As stated

cc w/encl: See next page

DISTRIBUTION:

PUBLIC	LPL1-2 R/F	RidsNrrPMVNerses	RidsNrrLACRaynor
KKarwoski	RidsOgcRp	Rgn1MailCenter	PKrohn, RI
LMiller			

ADAMS Accession Number: **ML061930135**

OFFICE	LPLI-2/PM	LPLI-2/LA	CSGB/SC	LPLI-2/BC (A)
NAME	VNerses	CRaynor	AHiser	BPoole
DATE	7/19/06	7/18/06	1/27/06	7/19/06

**OFFICIAL RECORD COPY**

UNITED STATES NUCLEAR REGULATORY COMMISSION  
EVALUATION OF 2004 REFUELING OUTAGE  
STEAM GENERATOR TUBE INSERVICE INSPECTION RESULTS  
MILLSTONE POWER STATION, UNIT NO.3  
DOCKET NO. 50-426

By letter dated April 7, 2005, as supplemented by letter dated December 14, 2005, Dominion Nuclear Connecticut, Inc. (DNC or the licensee) submitted reports summarizing the steam generator (SG) tube inservice inspections performed during the 9<sup>th</sup> refueling outage (RFO) (2004) performed at Millstone Power Station, Unit No. 3 (MPS3). Also, by letter dated May 3, 2004, DNC submitted the 15-day SG tube plugging report in accordance with Technical Specification (TS) Sections 4.4.5.5.a and 6.9.2. On January 26, 2006, the Nuclear Regulatory Commission (NRC) staff participated in a conference call with MPS3 representatives, in which DNC provided clarifying information regarding their December 14, 2005, submittal.

MPS3 has Westinghouse Model F SGs which are designated SG A through SG D. Only SG B and SG D were inspected during the 9<sup>th</sup> RFO in spring 2004. The Westinghouse Model F SG consists of approximately 5626 tubes which have an outside diameter of 0.688 inches and a wall thickness of 0.040 inches. The tubes have been hydraulically expanded into the tubesheet and are supported by several stainless steel support plates which contain quatrefoil tube holes through which the tubes pass. The MPS3 SGs began operation in 1986 and have thermally-treated Alloy 600 tubing.

DNC provided the scope, extent, methods, and results of the MPS3 SG tube inspections in the documents referenced above. In addition, DNC described corrective actions (i.e., tube plugging or repair) taken in response to the inspection findings.

The NRC staff has the following notes/observations as a result of reviewing the aforementioned submittals and participating in the aforementioned conference call.

- In the licensee's submittal dated December 14, 2005, it was stated that a group of five tubes (Row 50, Column 34; Row 51, Column 32; Row 51, Column 33; Row 50, Column 33; and Row 51, Column 35) with potential loose parts indications were plugged on a discretionary basis due to not being able to confirm the presence of a loose part. However, the licensee's April 7, 2005, submittal indicated that the five tubes plugged were Row 50, Column 34; Row 51, Column 32; Row 51, Column 33; Row 50, Column 33; and Row 51, Column 34. During the January 26, 2006, conference call, DNC clarified that the December 14, 2005, submittal contained a typographical error and Tube Row 51, Column 35 should have been reported as Tube Row 51, Column 34.
- Three tubes (Row 50, Column 34; Row 51, Column 32; and Row 51, Column 33) with potential loose parts indications were plugged during the 9<sup>th</sup> RFO. Since some of the areas could not be accessed for visual inspection and removal of the part, the affected tubes were plugged. In addition to the three affected tubes, two surrounding tubes were plugged (Row 50, Column 33; and Row 51, Column 34). None of the five tubes were stabilized. The NRC staff notes that loose parts can result in continued wearing of a

plugged tube. If enough wear occurs, the tube could sever and could impact other adjacent (and non-plugged) tubes. This has led some licensees to plug and stabilize tubes affected by loose parts (or tubes near loose parts).

- Due to previously-identified feed-ring and J-tube erosion, visual and ultrasonic examinations were performed during the 7<sup>th</sup> RFO in order to develop baseline data for erosion progression monitoring. During the 9<sup>th</sup> RFO, visual and ultrasonic-phased array examinations were performed on the feed-ring nozzles of SG D, which was determined to be the SG with the most limiting erosion rate during the 7<sup>th</sup> RFO inspection. From this data, the licensee established a maximum erosion rate and determined an appropriate repair date for the remaining SGs. Weld repairs on eroded areas were performed on the SG D feed-ring during the 9<sup>th</sup> RFO. The licensee concluded that the erosion of the feed-rings and J-tubes will not adversely affect SG tube integrity during the next operating cycle.
- In a request for additional information dated October 17, 2005, the NRC staff asked DNC to describe four single volumetric indications (SVIs) in greater detail. DNC indicated that three of the four were traceable to prior inspections. DNC did not indicate whether or not the indications changed from the previous inspections. These indications will be inspected during subsequent outages and monitored for growth.
- One tube in SG C with an obstruction 7.29 inches above the cold-leg tube end (or approximately 13 inches below the top of the tubesheet) was plugged during the 7<sup>th</sup> RFO. No similar tube obstructions were found in SG B or SG D during the 9<sup>th</sup> RFO.
- During a January 26, 2006, conference call, DNC provided clarification regarding their use of the SVI and VOL (volumetric indication) codes. DNC uses the term SVI during the rotating pancake coil (RPC) resolution phase for VOLs located in the freespan that can not be traced back to a baseline inspection. VOL is used by DNC during the RPC resolution phase for volumetric indications located in the freespan that have not changed from prior inspections (i.e., indications that can be traced back to a baseline inspection).

Based on a review of the information provided, the NRC staff concludes that DNC provided the information required by their TSs. In addition, the NRC staff concludes that there are no technical issues that warrant follow-up action at this time since the inspections 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.

Millstone Power Station, Unit No. 3

cc:

Lillilan M. Cuoco, Esquire  
Senior Counsel  
Dominion Resources Services, Inc.  
Building 475, 5<sup>th</sup> Floor  
Rope Ferry Road  
Waterford, CT 06385

Edward L. Wilds, Jr., Ph.D.  
Director, Division of Radiation  
Department of Environmental Protection  
79 Elm Street  
Hartford, CT 06106-5127

Regional Administrator, Region I  
U.S. Nuclear Regulatory Commission  
475 Allendale Road  
King of Prussia, PA 19406

First Selectmen  
Town of Waterford  
15 Rope Ferry Road  
Waterford, CT 06385

Mr. J. W. "Bill" Sheehan  
Co-Chair NEAC  
19 Laurel Crest Drive  
Waterford, CT 06385

Mr. Evan W. Woollacott  
Co-Chair  
Nuclear Energy Advisory Council  
128 Terry's Plain Road  
Simsbury, CT 06070

Senior Resident Inspector  
Millstone Power Station  
c/o U.S. Nuclear Regulatory Commission  
P. O. Box 513  
Niantic, CT 06357

Ms. Nancy Burton  
147 Cross Highway  
Redding Ridge, CT 00870

Mr. Joseph Roy,  
Director of Operations  
Massachusetts Municipal Wholesale  
Electric Company  
Moody Street  
P.O. Box 426  
Ludlow, MA 01056

Mr. J. Alan Price  
Site Vice President  
Dominion Nuclear Connecticut, Inc.  
Building 475, 5<sup>th</sup> Floor  
Rope Ferry Road  
Waterford, CT 06385

Mr. Chris Funderburk  
Director, Nuclear Licensing and  
Operations Support  
Dominion Resources Services, Inc.  
5000 Dominion Boulevard  
Glen Allen, VA 23060-6711

Mr. David W. Dodson  
Licensing Supervisor  
Dominion Nuclear Connecticut, Inc.  
Building 475, 5<sup>th</sup> Floor  
Rope Ferry Road  
Waterford, CT 06385