

VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

April 1, 2013

United States Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555-0001

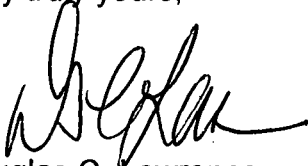
Serial No. 13-155
SPS LIC/CGL R1
Docket No. 50-280
License No. DPR-32

VIRGINIA ELECTRIC AND POWER COMPANY
SURRY POWER STATION UNIT 1
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION
2012 STEAM GENERATOR INSERVICE INSPECTION REPORT

By letter dated October 30, 2012 (Serial No. 12-640), Virginia Electric and Power Company (Dominion) submitted information summarizing the results of steam generator (SG) tube inspections performed at Surry Power Station Unit 1 during the Spring 2012 refueling outage. On March 7, 2013, the NRC requested additional information related to the SG inspections. The NRC's questions and Dominion's responses are provided in the attachment to this letter.

If you have any questions or require additional information, please contact Ms. Candee Lovett at (757) 365-2178.

Very truly yours,



Douglas C. Lawrence
Direction Station Safety & Licensing
Surry Power Station

Attachment

Commitments made in this letter: None

A047
MLB

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ATTACHMENT

**Response to NRC Request for Additional Information Regarding
2012 Steam Generator Inservice Inspection Report**

Surry Power Station Unit 1

**Virginia Electric and Power Company
(Dominion)**

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION
REGARDING SURRY UNIT 1
2012 STEAM GENERATOR INSPECTIONS

By letter dated October 30, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12321A047), Virginia Electric and Power Company (Dominion) submitted steam generator (SG) tube inspection results from the 2012 inspections at Surry Power Station Unit 1. In order to complete its review of the documents listed above, the NRC staff requests the following additional information. The Dominion responses are provided below.

1. Please discuss the results of the foreign object search and retrieval inspections that were performed in the three steam generators (SGs).

Response: Foreign object search and retrieval (FOSAR) examinations were performed in each SG at the top of the tubesheet, in the annulus, no-tube lane, and inner-bundle. The results of those examinations are as follows:

SG A:

- 1) A disk shaped object fused to the top of tubesheet on the cold leg side, initially identified during EOC22. The disk continues to remain fixed with no signs of tube wear and will continue to be monitored during future outages.
- 2) Two regions of accumulated wire brush bristles or demister wire (a.k.a. bird's nests). Both nests are located at the top of the tubesheet, one on the hot leg side and the other on the cold leg side. No degradation was identified in any tubes adjacent to the regions. Both areas will continue to be monitored during future outages.
- 3) An L-shaped wire positioned at the cold leg top of tubesheet and extending approximately four inches above the tubesheet. The wire was initially identified during EOC22 and remains fixed. Monitoring of tubes in this region shows that the wire is not causing tube wear. This location will continue to be monitored during future outages.
- 4) A sludge rock located at the top of the hot leg tubesheet. This object has no associated degradation and does not require future monitoring.
- 5) A wire that was positioned diagonally across the tubes and located at the hot leg top of tubesheet. The wire caused no tube wear and was removed during the EOC24 outage. Further monitoring of this location is not required.

SG B:

- 1) Historical tube wear locations on the hot leg side of the baffle plate (upper side) were again examined during EOC24. These locations have exhibited no change since they were initially reported. The wear locations will continue to be monitored during future outages.

- 2) Two tube locations were previously plugged at EOC23 for a possible loose part (PLP) and wear indications. The tubes bounding the plugged tube locations showed no signs of tube wear or PLPs during EOC24. These locations will continue to be monitored during future outages.

SG C:

- 1) A pile of debris (sludge rocks, flakes, and bristles) located at the hot leg top of tubesheet showed no signs of tube wear or PLPs at EOC24. This location will continue to be monitored using the array or +Point probes during future outages.
- 2) Two tube locations were previously plugged at EOC20 for suspected foreign object wear. The tubes bounding the plugged tube locations showed no signs of tube wear or PLPs during EOC24. These locations will continue to be monitored during future outages.
- 3) A new wear flaw was detected at the cold leg top of tubesheet. No PLPs were detected by ECT or secondary side inspection at this location. This location will continue to be examined using the array or +Point probes during future outages to monitor for wear growth and PLPs.

2. **Please verify the accuracy of all the bobbin coil exams (scope description, extent, and acquired) in Table 2 of your report. For example, should "cold-leg straight" actually be "cold-leg candy cane."**

Response: In preparing the response to this question, it was determined that the Bobbin Coil and Array Exams portions of Table 2 in our October 30, 2012 letter contained several errors. The corrected examination summary is provided below in Table 1.

Table 1 – EOC24 ECT Probe Examination Scope

Scope Description	Extent	S/G A	S/G B	S/G C
Bobbin Coil Exams				
Full Length	Tube End to Tube End	3023	--	3030
C/L Straight	7CTEC	181 (Row 1-2)	--	275 (Row 1-3)
H/L Straight	7HTEH	264 (Row 1-3)	--	181 (Row 1-2)
H/L Candy cane (Row 3)	7CTEH	10	--	91
Restricted Tube	Tube End to Tube End	R5C35	--	R4C15
C/L Candy cane (Row 3)	7HTEC	83	--	3
Array Exams				
H/L Array (Non-baffle Plate)	TSH1H	835	266	839

- 3. Please discuss the nature of the restriction in the tube in Row 5 Column 35 in SG A. Is this restriction service-induced or has it been present since the pre-service inspection?**

Response: The restriction in SG A tube R5 C35 was caused by a dent located between the 4th and 5th support plates on the cold leg. The dent prevents the passage of a 0.720 inch OD bobbin probe; however, this region of the tube is routinely successfully examined with a 0.700 inch OD bobbin probe. The dent was first reported in 1997 and has been examined with the bobbin probe during each inspection since the spring 1997 outage. The bobbin probe signal has exhibited no change during each subsequent inspection. In addition, this region of the tube has been examined with the +Point probe during four outages since 1997, including EOC24, and no degradation has been identified. In addition, as noted in Table 1 above, SG C tube R4 C15 restricted a 0.720 inch OD bobbin probe at the u-bend tangent point on the hot leg. The tangent points in low row u-bends occasionally make it difficult for the probe to traverse, as was the case for SG C tube R4 C15. This location was successfully examined with a 0.700 inch bobbin probe and was confirmed to be free of degradation.

- 4. Please clarify whether any degradation was observed during the steam drum inspection in SG A. If degradation was detected, discuss the nature and extent of the degradation.**

Response: The visual examinations performed in the steam drum of SG A identified no areas of concern with respect to degradation.

- 5. Please clarify whether 100 percent of the hot-leg expansion transitions in SG B were inspected between the combined inspections of the spring 2012 and fall 2010 outages.**

Response: Between the combined inspections of the spring 2012 and fall 2010 outages, 86% of the hot leg expansion transitions in SG B were examined with either the array probe, the rotating +Point probe, or both. Note that the spring 2012 inspection was the first inspection in the fourth SG Technical Specification inspection period for Surry Unit 1. SG B inspections will be performed during two additional outages in the fourth period. All hot leg expansion transitions in SG B were examined with the rotating plus point probe during the third inspection period.