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L-03-123

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555-0001

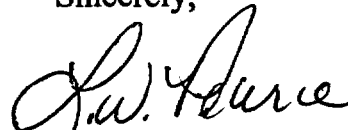
Subject: Beaver Valley Power Station, Unit No. 2
Docket No. 50-412, License No. NPF-73
Steam Generator Tubesheet Inspection Information

Reference: Nuclear Energy Institute (NEI) Letter to NRC dated February 4, 2003
Regarding Steam Generator Tubesheet Inspection Information

In response to a request from the NRC staff, NEI indicated in the referenced letter that plants that may be susceptible to stress corrosion cracking within their steam generator tubesheet would provide the NRC with information on past and future steam generator tubesheet inspections. Attached is requested information for Beaver Valley Power Station (BVPS) Unit 2.

There are no regulatory commitments contained in this letter. If there are any questions concerning this matter, please contact Mr. Larry R. Freeland, Manager, Regulatory Affairs/Performance Improvement at 724-682-5284.

Sincerely,



L. William Pearce

Attachment

c: Mr. T. G. Colburn, NRR Senior Project Manager
Mr. D. M. Kern, NRC Sr. Resident Inspector
Mr. H. J. Miller, NRC Region I Administrator

A001

**Attachment to Letter L-03-123
Beaver Valley Power Station Unit 2
Steam Generator Tubesheet Inspection Information**

TUBESHEET INSPECTION PRACTICES

Plant Information

Plant: Beaver Valley Unit 2
Steam Generator Model: Westinghouse Model 51M
Tube Material: I-600, Mill Annealed
Tube Diameter: 0.875"
Tube Thickness: 0.050"
Expansion Process and Extent: Mechanical roll - full length (shot-peened prior to commercial operation)
Tubesheet Thickness: 21"
 $T_{HOT} = 608^{\circ}F$
EFPY @EOC 09 = 11.08

Susceptible to degradation below expansion transition region:

Yes ☒ No ☐

If no, provide basis for non-susceptibility determination

Historical Inspection Practices and Results

Most recent outage:
2R09 - March 2002
End of Cycle #09

Inspection techniques used for tubesheet examination:

- bobbin coil
- +Point

Extent of tubesheet inspections:

- Hot leg active tubes
 - 100% bobbin; 21"
 - 100% +Point; top of tubesheet +6"; -3"

Inspection results:

- Axial and circumferential ODSCC identified on hot leg above top-of-tubesheet and within expansion transitions
- No axial or circumferential ODSCC indications identified below expansion transitions
- Axial PWSCC identified within expansion transition
- No axial or circumferential PWSCC indications identified below expansion transitions

Bases for inspection technique and inspection extent:

The bobbin coil examination is capable of detecting significant axial and/or volumetric degradation throughout the full depth of the expanded tubesheet region and ensures compliance to Technical Specification surveillance requirements.

Rotating pancake coil techniques (+Point) are used in the tubesheet region to adequately assess its structural and leakage integrity. The +Point techniques are qualified in accordance with Appendix H of the EPRI PWR Steam Generator Inservice Inspection Guidelines and provide adequate detection capabilities for both axial and circumferential oriented degradation in this region of the tube bundle. The +Point examination extents above and below the top of tubesheet bound that portion of the tube where degradation is expected and most likely first to occur (i.e., hot leg sludge pile and expansion transition regions). Additionally, the +Point probe examination extent below the top-of-tubesheet interrogates that portion of the tube that can be demonstrated to provide adequate pressure and leakage boundary capabilities. To date, identified degradation has been limited to the sludge pile areas and the expansion transition region, even though +Point probe sampling has been performed to distances of +6" and -3" from top-of-tubesheet.

All corrosion related degradation identified from either the bobbin coil or +Point examinations in this region of the tube bundle is repaired upon detection. Thus, upon completion of the above-described examinations, technical specification compliance and structural and leakage integrity can be assured.

Previous outages:

2R08 - September 2000

Inspection techniques, extents and bases were identical to those described for 2R09.

Planned Inspection for Next Outage

2R10 - September 2003

Inspection techniques, extents and bases will be identical to those described for 2R09.