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November 12, 2004  
L-04-150

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

**Subject: Beaver Valley Power Station, Unit No. 1**  
**Docket No. 50-334, License No. DPR-66**  
**1R16 Steam Generator Tube Plug Special Report**

In accordance with Beaver Valley Power Station (BVPS) Unit No. 1 Technical Specification 4.4.5.5.a, a Steam Generator Special Report is required to be submitted within 15 days of completion of steam generator eddy current examinations. The following information documents the number of steam generator tubes removed from service during the BVPS Unit No. 1 sixteenth refueling outage (1R16). The final review and acceptance of the eddy current data was on November 5, 2004.

Eddy Current Examination

One hundred percent of the in-service tubes in Rows 3 through 46 from Steam Generators RC-E-1A, RC-E-1B and RC-E-1C were examined full length with the bobbin coil probe. In-service tubes in Rows 1 and 2 were examined with a bobbin coil probe to the uppermost tube support plate in each leg. The U-bend regions of the tubes in Rows 1 and 2 were examined with the Plus Point probe.

One hundred percent of the hot leg top-of-tubesheet region was examined in each steam generator with the Plus Point probe. In addition, a twenty percent random sample of the cold leg top-of-tubesheet region was examined in RC-E-1B with the Plus Point probe.

One hundred percent of the in-service tube sleeves installed at 1R13 were examined during 1R16. This examination included the sleeve welds, the unexpanded portion of the sleeves plus the lower hard roll area and expansion region of the tubesheet sleeves.

As a continued pro-active inspection, twenty percent of the U-bend region in Rows 3 through 7 and Rows 12 through 18 were examined with the Plus Point probe.

Per the requirements of BVPS Unit No. 1 Technical Specification Amendment No. 198 (Generic Letter 95-05), all distorted tube support plate signals with bobbin coil voltages

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> 2.00 volts were further evaluated with the Plus Point probe. Those signals > 2.00 volts, that were confirmed (detected) with the Plus Point probe, were repaired by tube plugging. Distorted support plate signals < 2.00 volts were randomly sampled with the Plus Point probe to confirm the morphology being observed remained Outside Diameter Stress Corrosion Cracking (ODSCC).

The following additional examinations were performed per Amendment No. 198:

All dents with bobbin coil voltages > 5.00 volts located at tube support plates were re-examined with the Plus Point probe.

One hundred percent of tube support plate residual signals with amplitudes large enough to mask a 1.00 volt indication were re-examined with the Plus Point probe in each steam generator. Confirmed residual signals > 1.00 volt were removed from service.

#### Axial Indications in Parent Tube Behind Tubesheet Sleeves

Twenty-three tubes that were sleeved at 1R13 with full length tubesheet sleeves were found to have axial indications in the parent tube lower hard roll region. The parent tube indications are located approximately 1.0" up from the tube end and are coincident with the area where a tube plug was previously removed by the Tungsten Inert Gas (TIG) relaxation process. These tubes were removed from service.

#### Bulged Tubesheet Sleeves

No bulged or obstructed tubesheet sleeves were found during 1R16.

#### Axial Indication Extending Beyond the Tube Support Plate

One tube was identified as exhibiting an axial indication extending beyond the confines of the tube support plate. In accordance with the requirements of Generic Letter 95-05, the NRC was notified of this indication on October 29, 2004.

#### Summary of Tubes Removed from Service

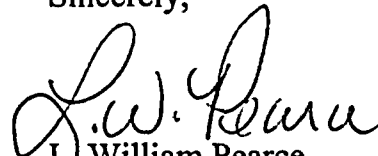
Attachment 1 lists the number of tubes removed from service from each steam generator during 1R15.

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The complete and detailed results of the steam generator tube inspection will be submitted within the next 12 months in accordance with BVPS No. 1 Technical Specification 4.4.5.5.b.

No regulatory commitments are contained in this submittal. If there are any questions concerning this matter, please contact Mr. Larry R. Freeland, Manager, Regulatory Compliance at 724-682-4284.

Sincerely,



L. William Pearce

Attachment

- c: Mr. T. G. Colburn, NRR Senior Project Manager  
Mr. P. C. Cataldo, NRC Sr. Resident Inspector  
Mr. S. J. Collins, NRC Region I Administrator

## ATTACHMENT 1

Listed below is a summary of tubes removed from service for each steam generator:

	RC-E-1A	RC-E-1B	RC-E-1C
<b>Number of tubes removed from service Pre-1R16</b>	<b>761</b>	<b>532</b>	<b>463</b>
<b>Number of tubes removed from service during 1R16</b>	<b>104</b>	<b>40</b>	<b>52</b>
<b>Basis for tubes removed from service 1R16:</b>			
Axial Indications Above the Hot Leg Top-of-Tubesheet	22	18	16
Circumferential Indications Above Hot Leg Top-of-Tubesheet	1	2	0
Axial Indications Within Hot Leg Tubesheet	6	5	2
Circumferential Indications Within Hot Leg Tubesheet	1	0	1
Non-Quantifiable Indications Above Hot Leg Top-of-Tubesheet	0	0	2
Volumetric Indications Above Hot Leg Top-of-Tubesheet	0	1	2
Volumetric Indication Above Cold Leg Top-of-Tubesheet	0	1	0
Tube Support Plate Indications > 2.00 Volts (Generic Letter 95-05)	6	0	12
Axial Indications at Dented Tube Support Plates	3	0	0
Volumetric Indication at Dented Tube Support Plate	0	1	0
Axial Indication Extending Outside Tube Support Plate	1	0	0
Confirmed Mix Residual Signals at Tube Support Plates $\geq$ 1.00 Volt	41	6	16
Cold Leg Thinning ( $\geq$ 40%)	1	1	0
Axial Indications in Parent Tube Behind Tubesheet Sleeves	20	3	0
Tube Support Plate Axial Indication Above Tubesheet Sleeve	0	1	0
Permeability Variation	0	0	1
Secondary Side Anomaly	2	1	0
<b>Number of tubes removed from service Post-1R16</b>	<b>865</b>	<b>572</b>	<b>515</b>