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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  
Steam Generator Tube Plug Special Report**

In accordance with Beaver Valley Power Station (BVPS) Unit No. 1 Technical Specification 4.4.5.5.a which requires that a Steam Generator Special Report be submitted within 15 days of completion of steam generator inspections, the following is submitted:

#### Eddy Current Examination

One hundred percent (100%) 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 bobbin coil probes. In-service tubes in Rows 1 and 2 were examined with bobbin coil probes to the uppermost tube support plate in each leg. The U-bend regions of the in-service tubes in Rows 1 and 2 were examined with the Rotating Pancake Coil technique using Zetec single coil Plus Point probes. A twenty percent (20%) random sample of the Row 3 U-bend region was also examined with Zetec single coil Plus Point probes. The extent of the U-bend examinations included the uppermost support plate on each leg.

Per the criteria of Generic Letter 95-05, all distorted tube support plate signals with bobbin coil voltages  $\geq 2.00$  volts were further evaluated with Zetec 3-coil Plus Point probes. Those signals  $\geq 2.00$  volts, that were confirmed (detected) with the Zetec 3-coil Plus Point probes, were repaired by tube sleeving and/or tube plugging. Distorted support plate signals  $< 2.00$  volts were randomly sampled with the Zetec 3-coil Plus Point probes to confirm that the morphology being observed continued to be Outside Diameter Stress Corrosion Cracking (ODSCC).

The following additional examinations were performed:

- All dents with bobbin coil voltages  $\geq 5.00$  volts (13 total) located at tube support plates were re-examined with the Zetec 3-coil Plus Point probes. No indications were observed.

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- 265 hot leg tube support plate residual signals with amplitudes large enough to mask a 1.00 volt indication were re-examined with Zetec 3-coil Plus Point probes. No indications were observed.

One hundred percent (100%) of the hot leg top-of-tubesheet region was examined in each steam generator with Zetec 3-coil Plus Point probes. Indications observed on the hot leg side (36 total) were repaired by tube sleeving and/or tube plugging. In addition, the following Zetec 3-coil Plus Point examinations were performed: one hundred percent (100%) of the RC-E-1A cold leg top-of-tubesheet region (this was due to the number of indications found the previous outage), a twenty percent (20%) random sample of the cold leg top-of-tubesheet region in RC-E-1B and a twenty percent (20%) random sample of the cold leg top-of-tubesheet region in RC-E-1C. No indications were observed on the cold leg side of the steam generators.

Also, 14 support plate dents and free-span dings with bobbin coil voltages  $\geq 2.00$  volts located between the hot leg top-of-tubesheet and the third hot leg support plate were re-examined with Zetec 3-coil Plus Point probes. One indication (non-crack like) was administratively plugged.

#### Tube Plug Removal

A total of 401 tubes were unplugged (226 in S/G "A", 175 in S/G "B") in anticipation of returning these locations to service through the Westinghouse laser welded sleeving process. Of these unplugged tubes, 11 tubes in RC-E-1A and 11 tubes in RC-E-1B were subsequently replugged with Westinghouse mechanical plugs manufactured from Inconel 690 material.

For S/G "C" (RC-E-1C), the remaining Framatome Inconel 600 rolled plugs (70 total) were removed. These locations were subsequently replugged with Westinghouse mechanical plugs manufactured from Inconel 690 material.

#### Tube Sleeve Installation (RC-E-1A & 1B only)

A total of 516 laser welded tube sleeves were installed (S/G "A" - 303 sleeves in 229 tubes, S/G "B" - 213 sleeves installed in 185 tubes). Three (3) sleeved tubes in RC-E-1B were removed from service. One (1) tube sleeve (installed in an inservice tube) was plugged due to installation anomalies, and two (2) tube sleeves (installed in unplugged tubes) were administratively removed from service.

Attachment 1 lists the steam generator tubes removed from service in each generator.

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

If you have any questions regarding this matter, please contact Mr. Mark S. Ackerman, Manager, Licensing at 412-393-5203.

Sincerely,



Lew W. Myers

- c: Mr. D. S. Collins, Project Manager  
Mr. D. M. Kern, Sr. Resident Inspector  
Mr. H. J. Miller, NRC Region I Administrator  
Ms. Mary E. O'Reilly (FirstEnergy Legal Department)

### Attachment 1

Listed below is a breakdown of tubes removed from service in each steam generator:

	<u>RC-E-1A</u>	<u>RC-E-1B</u>	<u>RC-E-1C</u>
<b>Number of tubes previously removed from service</b>	<b>800</b>	<b>569</b>	<b>351</b>
<b>Tubes removed from service 1R13:*</b>			
≥ 2.00 Volts (Tech. Spec. Limit for Alternate Repair Criteria)	1	0	1
Hot Leg Top-of-Tubesheet Indications	0	0	13
Row 1/2 U-Bend Indications	1	0	2
Cold Leg Thinning	4	2	1
Tube Administratively Plugged	1	0	0
Sleeved Tube with Indication	0	1	0**
<b>Total Number of Tubes removed from service during 1R13:*</b>	<b>7</b>	<b>3</b>	<b>17</b>
Number of tubes unplugged & returned to service through sleeving	215	164	0**
Number of tubes removed from service post 1R13	<b>592</b>	<b>408</b>	<b>368</b>
<b>Tube Plugs Replaced During 1R13</b>			
Number of Framatome Inconel 600 plugs replaced (Hot Leg)	36	9	45
Number of Framatome Inconel 600 plugs replaced (Cold Leg)	0	1	25

\* Numbers shown do not include unplugged tubes.

\*\*No sleeving performed.