



FirstEnergy Nuclear Operating Company

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October 10, 2008

L-08-297

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

SUBJECT:

Beaver Valley Power Station, Unit No. 1
Docket No. 50-334, License No. DPR-66
Response to Request for Additional Information - 2007 Steam Generator Tube
Inspections (TAC No. MD8392)

By letter dated March 18, 2008, FirstEnergy Nuclear Operating Company (FENOC) submitted information summarizing the results of the 2007 steam generator tube inspections at Beaver Valley Power Station (BVPS) Unit No. 1. By letter dated September 11, 2008, the NRC staff requested additional information in order to complete its review of the March 18, 2008 steam generator tube inspection report. The FENOC responses to this request are attached.

There are no regulatory commitments contained in this letter. If there are any questions or if additional information is required, please contact Mr. Thomas A. Lentz, Manager – Fleet Licensing, at 330-761-6071.

Sincerely,

Peter P. Sena III

Attachment:

Response to Request for Additional Information, 2007 Steam Generator Tube
Inspections, Beaver Valley Power Station, Unit No. 1

cc: NRC Region I Administrator
NRC Resident Inspector
NRR Project Manager
Director BRP/DEP
Site BRP/DEP Representative

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Attachment
L-08-297

Response to Request for Additional Information
2007 Steam Generator Tube Inspections
Beaver Valley Power Station, Unit No. 1
Page 1 of 5

By letter dated March 18, 2008, the FirstEnergy Nuclear Operating Company (FENOC) submitted information summarizing the results of the 2007 steam generator (SG) tube inspections during the eighteenth refueling outage (1R18) at Beaver Valley Power Station, Unit No. 1 (BVPS-1). To complete their review, the NRC staff has requested additional information regarding the license amendment application for the measurement uncertainty recapture power uprate. The staff request is provided below in bold type followed by the FENOC response for BVPS-1.

1. Please provide the following design information on the BVPS-1 SGs:

a. Whether the u-bends were stress relieved after bending

Rows 1 through 8 were stress relieved following the bending process. No other rows were stress relieved after bending.

b. The smallest u-bend radius (typically row 1)

Row 1 is the smallest U-bend with a radius of 3.14".

c. A tubesheet map

A tubesheet map is provided in Figure 1.

d. The SG tube support plate naming convention used

The SG tube support plate naming convention is illustrated in Figure 2.

e. The tubing manufacturer

The tubing manufacturer is Sandvik, located in Sandviken, Sweden.

f. Whether the SGs have a flow distribution baffle plate, and if so, a description of the plate

The Model 54F design includes a flow distribution baffle (Labeled "FBH" and "FBC" on Figure 2) located between the top of tubesheet and first tube support plate. The flow distribution baffle (FDB) is designed to minimize the number of tubes exposed to low velocity flow in the vicinity of the tubeplate. The flow distribution baffle, fabricated from ASME SA-240, Type 405 stainless steel, has octafoil shaped broached tube holes. The effective annular flow area between

the tube outside diameter and the effective hole inside diameter is less in the case of the flow distribution baffle than for the tube support plates. Also, the center portion of the flow distribution baffle is cut out as indicated in Figure 3. This flow distribution baffle design controls the cross-flow velocity so that the low velocity region (and sludge deposition zone) is located at the center of the tube bundle, near the blowdown intake.

2. Please provide the cumulative effective full power months of operation that the SGs had accumulated at the first inservice inspection.

At the end of Cycle 18, which was the first in-service inspection of the steam generators after replacement, the steam generators had accumulated 16.85 effective full power months of operation.

3. Please clarify whether any secondary side inspections (other than the secondary side visual inspection of the top of the tubesheet and in-bundle inspections of possible loose part locations) were performed. Please discuss the results of any secondary side inspections, including the visual inspection of the top of the tubesheet and the in-bundle inspections of possible loose part locations.

The secondary side visual inspection program performed during the BVPS-1 2007 outage included the top of the tubesheet, annulus and in-bundle areas looking at possible loose part (PLP) locations. The PLP reported locations were a result of the primary side eddy current examinations. Accessible portions of the flow distribution baffle (no tube lane) were also visually examined. No other secondary side inspections were performed.

No significant abnormalities were noted during the secondary side inspections. Small pieces of gasket material and weld splatter were retrieved while one sludge rock in SG 1B broke apart during retrieval attempts and was not removed. No foreign material was observed in the accessible portions of the flow distribution baffle.

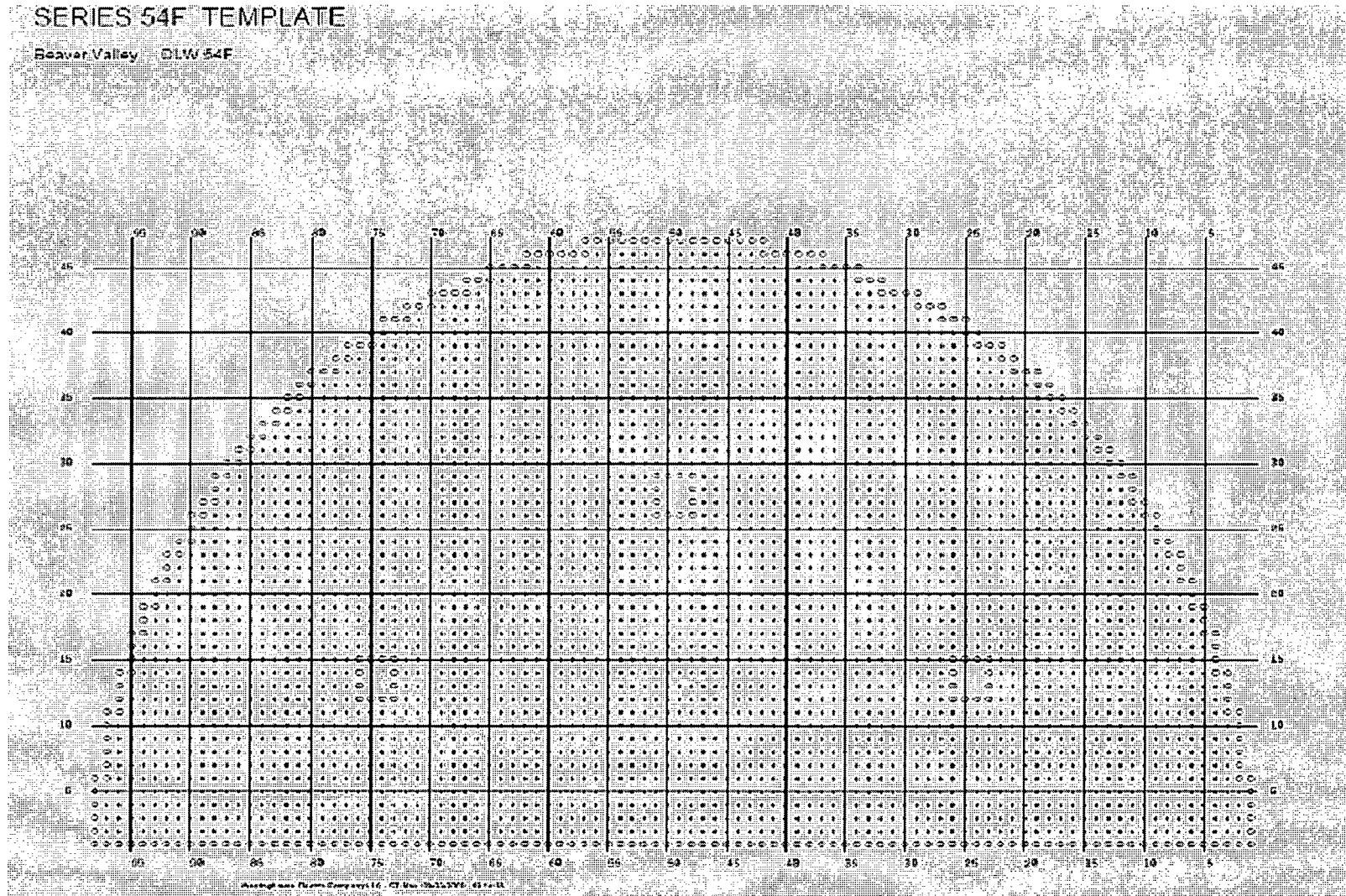
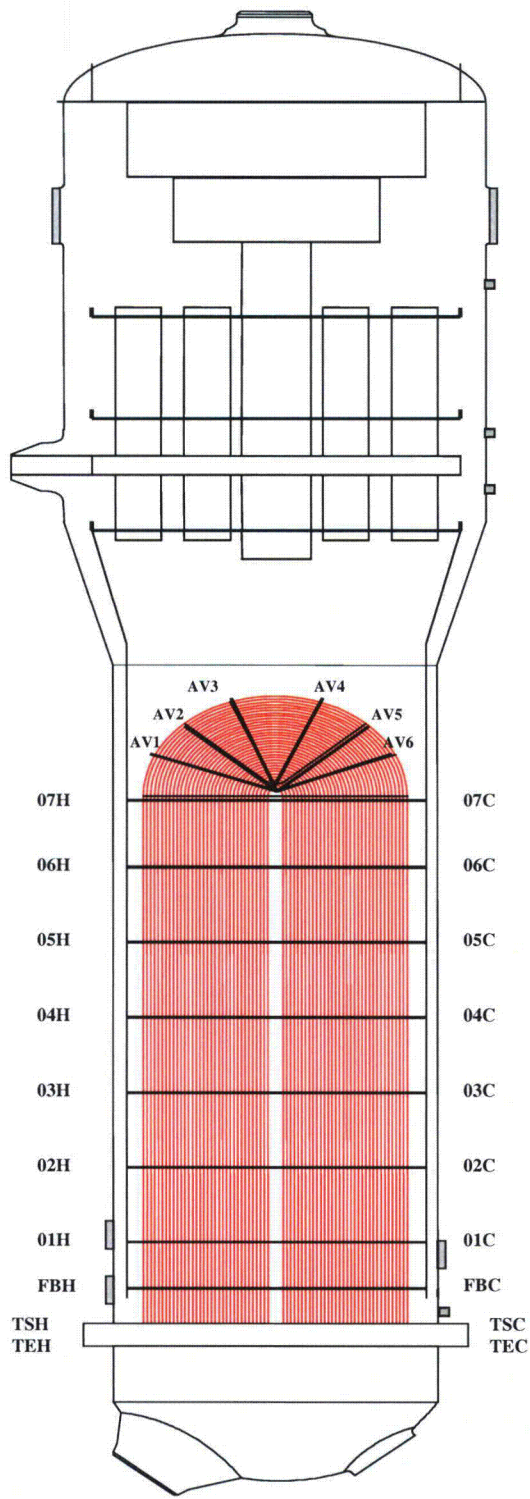


Figure 1 – BVPS-1 Steam Generator Tubesheet Map



- TEH - Tube End Hot
- TSH - Tubesheet Hot
- FBH - Flow Baffle Hot
- 01H - 1st Tube Support Plate Hot
- 07H - 7th Tube Support Plate Hot
- AV1 - 1st Anti-Vibration Bar
- AV6 - 6th Anti-Vibration Bar
- 07C - 7th Tube Support Plate Cold
- 01C - 1st Tube Support Plate Cold
- FBC - Flow Baffle Cold
- TSC - Tubesheet Cold
- TEC - Tube End Cold

Figure 2 – BVPS-1 Steam Generator Support Plate Naming Convention

SERIES 54F CUT OUT REGION

Beaver Valley DLW 54F

• 298 TUBES WITHIN CUT-OUT REGION

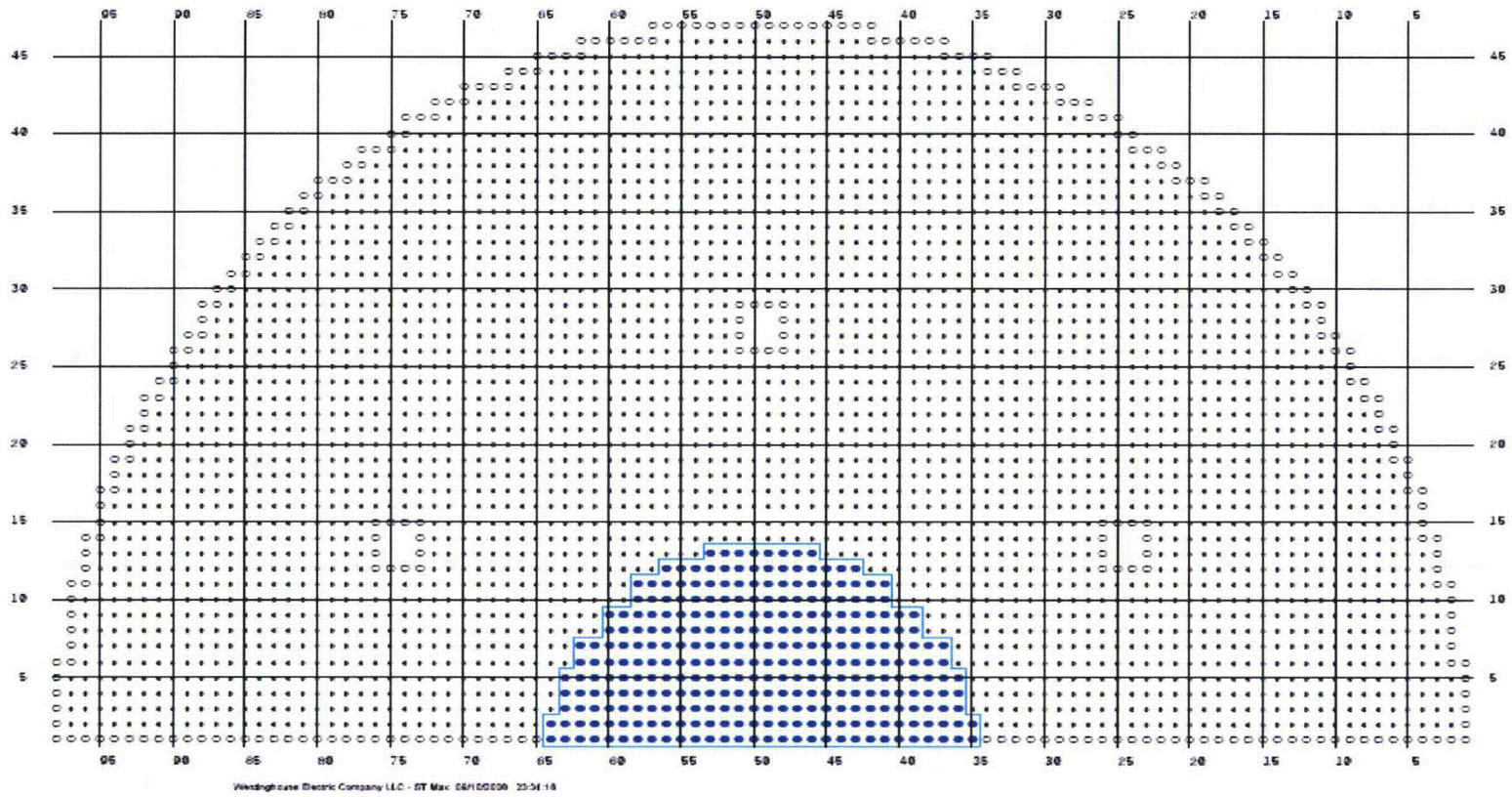


Figure 3 – BVPS-1 Steam Generator Flow Distribution Baffle