

May 23, 2001

LICENSEE: CALVERT CLIFFS NUCLEAR POWER PLANT, INC.

FACILITY: CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT NO. 2

SUBJECT: SUMMARY OF APRIL 17, 2001, CONFERENCE CALL REGARDING CALVERT CLIFFS UNIT 2 STEAM GENERATOR INSPECTION REPORT FOR 2001

On April 17, 2001 the Office of Nuclear Reactor Regulation (NRR) participated in a conference call with Region I and the licensee (Calvert Cliffs Nuclear Power Plant, Inc.) to discuss Unit 2 Steam Generator (SG) test results which were classified as Category C-3 in accordance with Calvert Cliffs Technical Specification 5.5.9. The list of participants is included as Enclosure 1.

The licensee presented an overview of Unit 2 SG test results using the information provided in Enclosure 2 which was faxed to Region I prior to the conference call. A summary of the number of tubes to be plugged and the number to be sleeved this outage for both SGs was also discussed. Following the licensee's presentation, the NRC staff asked the licensee several questions regarding SG tube testing. A summary of the questions asked by the staff and the licensee's response is given in Enclosure 3.

As requested by NRR, Enclosure 4 was provided by the licensee for the purpose of identifying the applicable Examination Technique Specification Sheets used with each inspection zone.

**/RA/**

Robert Clark, Project Manager, Section 1  
Project Directorate I  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket Nos. 50-317 and 50-318

Enclosures: As stated

cc w/encls: See next page

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Unit Nos. 1 and 2

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CALVERT CLIFFS NUCLEAR POWER PLANT, INC.

CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT NO. 2

APRIL 17, 2001

NRC Staff:

<u>Name</u>	<u>Title</u>	<u>Organization</u>
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Calvert Cliffs Nuclear Power Plant, Inc:

<u>Name</u>	<u>Title</u>
Pete Katz	Plant General Manager
Al Thornton	Manager Project Management
Mike Navin	Superintendent of Technical Services
Joe Mate	Steam Generator Project Engineer
John Haydin	Steam Generator Project Engineer
Ed Broczkowzki	Sr. Mechanical Engineer
Getachew Tesfaye	Sr. Licensing Engineer

## Unit 2 Refueling Outage SG Maintenance Status

Base Scope Inspection Zones	Number of Tubes in Base Scope	% Base Scope Completed	Number of Tubes in Expanded Scope	% Expanded Scope Completed	Number of Tubes to be Repaired by Zone
100% Full Length Bobbin Coil	15,337 7562 / 7775	100 100 / 100	N/A	N/A	1 1 / 0
100% Plus Point @ top of hot leg tube sheet	15,337 7562 / 7775	100 100 / 100	N/A	N/A	496 228 / 268 <sup>1</sup>
100% Plus Point @ top of cold leg tube sheet	15,337 7562 / 7775	100 100 / 100	N/A	N/A	5 0 / 5
100% Plus Point @ steam blanket region Row 5 expansion in #21 S/G req'd due to an indication in row 6	1133 543 / 590	100 100 / 100	59 59 / NA	100 100 / NA	22 11 / 11
100% Plus Point @ u-bends	221 111 / 110	100 100 / 100	N/A	N/A	6 3 / 3
Special Interests	120 71 / 49	100 100 / 100	0 0 / 0	N/A	4 1 / 3
Dents	160 43 / 117	100 100 / 100	0 0 / 0	N/A	0 0 / 0
<b>Maintenance:</b>					
				<b><u>SG 21</u></b>	<b><u>SG 22</u></b>
<b>Number of tubes to be plugged this outage</b>				51	138
<b>Number of tubes to be sleeved this outage</b>				210	155

Note 1 More than 1% of the total number of tubes inspected were defective in both 21 and 22 Steam Generators: therefore, both generators are C-3.

## **Summary of Licensee's Response to NRC Staff Questions Regarding Calvert Cliffs Unit 2 Steam Generator Inspection Report for 2001**

Question 1) Was there any primary to secondary leakage in either steam generator (SG) prior to the shutdown for this outage?

Response: CCNPPI stated that both SGs operated with very low primary-to-secondary leakage prior to Unit 2 shutdown. The licensee indicated that the primary-to-secondary leak was approximately 0.03 gallons per day (gpd) in the 21 SG and that the leakage was probably due to a weeping tube plug. There was no detectable leakage in the 22 SG.

Question 2) Did the outcome of the inspection reveal any new degradation mechanism?

Response: CCNPPI stated that the Unit 2 SGs did not experience any new degradation mechanism during the 2001 inspection.

Question 3) Did CCNPPI compare the results of this outage with those of the previous outage? Were there any obvious or striking differences in indication, number, location, length and depth identified during the comparison (are the results similar or, did CCNPPI see an increase in the frequency or rate of growth of indications)?

Response: CCNPPI stated that they do perform historical "look-up" on indications, especially with regards to Manufacturing Burnish Marks (MBMs) and wear for trending purposes. During the data comparison process, the licensee indicated that no significant findings were identified between the 2001 data and previous inspections. The indications found in the 2001 inspection were consistent (size and significance) with those found in previous inspections.

Question 4) Discuss the new inspection results. In particular, please expand the meaning of "base scope" for the steam blanket region, "U" bends and "special interest". Can CCNPPI characterize the one (1) indication identified by the bobbin coil inspection (first item in Enclosure 2 under "Number of Tubes to be Repaired by Zone" ). Briefly characterize the remaining tubes repaired (cracks, wear, wastage, wall thinning, loose part, etc). Based on indications found in the low-row U-bends, was the inspection scope expanded to the row 3 U-bends tubes?

Response: CCNPPI pointed out that Enclosure 2 was provided to the NRC prior to the phone call in order to summarize, by damage mechanism, the results of the 2001 inspection. CCNPPI also gave a detailed verbal description of the scope of the 2001 Unit 2 SG Inspection Plan. As a consequence, several questions were asked by the staff in regards to the scope and how CCNPPI define certain regions. CCNPPI defines the Low Rows as Rows 1 and 2 only. The steam blanket was defined as Rows 6 - 15 based on previous eddy current experience. During the inspection, CCNPPI did find a small indication in Row 6 that caused them to expand to Row 5 this outage. The licensee defined special interest as

all the bobbin calls that were inspected via the plus point probe. The one indication noted in the table that was plugged due to a bobbin call was a wear indication. Five tubes were plugged for geometric anomalies in the low row U-bends. The signals from the geometric anomalies were not crack-like or flaw-like. The inspection was not expanded to Row 3. The licensee pointed out that similar indications were seen on Unit 1 SGs, and other CE utilities have also observed and plugged these geometric indications. CCNPPI also stated that it does not have any historical data on these locations since this is the first 100 percent inspection of Rows 1 and 2 on Unit 2. There was no Primary Water Stress Corrosion Cracking (PWSCC) detected in the low row U-bends.

Question 5) Did CCNPPI perform any in-situ pressure tests and what was the basis for making that determination?

Response: CCNPPI responded that no in-situ testing was performed based on the fact that none of the indications met the initial in-situ screening criteria for testing.

Question 6) What steps did CCNPPI take during this inspection as a result of the Indian Point Unit 2 (IP2) tube failure? Tell us about:

Your response to any new degradation mechanisms or accelerated activity of previously identified mechanisms.

Your assessment of data quality (noise level acceptability).

Response: CCNPPI indicated that the SG inspection plan expanded to a 100 percent plus point examination of the tubes in Rows 1 and 2. They also indicated that they participated in the CE Owners Group Susceptibility Study, and placed a high degree of emphasis on data quality when examining the Low Row Data. Their procedure monitored data quality with the use of "data cops" to check the data for noise problems as it was acquired. They ran several of the low row tubes with single guide tubes to prevent noise problems with the data. They also placed a high degree of emphasis on training the analysts on what happened at IP2. Specific training material was added to their Site Specific Performance Demonstration Test Report which included the IP2 Event with actual eddy current test data. They also incorporated data from Palo Verde in their training data set. Their independent Level III Analyst or site Level II QDA was also required to look at every tube in the Low Row Region. They used two separate contractors as primary and secondary analysts.

Question 7) Are there any additional SG activities remaining in this outage?

Response: CCNPPI indicated that no additional SG activities were planned for the 2001 outage. The licensee indicated that nozzle dams were removed and manways were re-installed.

## **2001 CCNPP SG ETSSs**

### **Bobbin:**

- 1) 200 kHz – Site Specific Performance Demonstration – APTECH Engineering  
Report: AES-98013272-1-1
- 2) 96008
- 3) 96004
- 4) 96005

### **Hot Leg TTS:**

- 1) 96508/20510 & 20511 (recently revised by EPRI – old/new)
- 2) 96403/20409 (recently revised by EPRI – old/new)
- 3) 96401

### **Cold Leg TTS:**

- 1) 96508/20510 & 20511 (recently revised by EPRI – old/new)
- 2) 96403/20409 (recently revised by EPRI – old/new)
- 3) 96401

### **Steam Blanket:**

- 1) 96508/20510 & 20511
- 2) 96403/20409 (recently revised by EPRI – old/new)

### **Low Row U-Bends:**

- 1) 96511
- 2) 96403/20409 (recently revised by EPRI – old/new)



**Special Interest:**

- 1) 96401
- 2) 96402 & 96403/20409 (recently revised by EPRI – old/new)
- 3) 96508/20510 & 20511 (recently revised by EPRI – old/new)

**Dents:**

- 1) 96508/20510 & 20511 (recently revised by EPRI – old/new)