

From: David Lew
To: Bill Bateman, Edmund Sullivan, Emmett Murphy, Jack Strosnider, Jefferey Harold, Marsha Gamberoni, Pete Eselgroth, Scott Barber(...)
Date: Thu, Jun 8, 2000 1:27 PM
Subject: IP2 SG Inspection

Attached is revision 5 of the SG inspection plan, which incorporates comments received to this point. This revision reflects comments from the NRR technical staff, as well as NRR and Region I management. From our Tuesday meeting with the IP2 communications team, there was unanimous agreement that this inspection plan will not be publically available (i.e., will not be posted on the web or attached to the inspection report).

CC: Brian Holian, Wayne Lanning, Wayne Schmidt

WJL/280

(4)

**Special Inspection Plan
Indian Point 2**

NRC Inspection 50-247/2000-010

I. Inspection Objectives

- A. Determine whether the licensee's 1997 SG inspection performance was adequate with respect to identifying the flaw in steam generator 24, tube R2C5, given the identification of a PWSCC indication in tube C2R67, and the susceptibility of the steam generator to degradation mechanisms.

Assess the adequacy of the licensee's assessment of steam generator degradation mechanisms in 1997, and the effectiveness of the licensee's identification, corrective action and root cause evaluation of these degradation mechanisms, including the impact on the ability to detect flaws.

- B. Independently verify selected information, which was provided by Con Edison, in support of the NRR's safety evaluation of the operational readiness of the Indian Point steam generators for operation during the next cycle in 2000.

II. Inspection Scope

- A. 1997 SG Inspection Performance - Review licensee's 1997 eddy current inspection program to determine whether EPRI guidelines, which were in effect at the time, were effectively followed and their intent satisfied.

1. Assess the licensee's effectiveness in identifying, assessing and compensating for conditions impeding the effectiveness of steam generator eddy current inspections in 1997. It is important here to recognize state-of-the-art eddy current techniques available in 1997. This should include:

1. Where anomalous or questionable data were encountered in testing, were adequate steps taken to further investigate/interrogate/evaluate/disposition the data? – Especially where conditions contributing to increased susceptibility to tube integrity problems existed and additional data (e.g., data recorded at different frequencies) were readily available. [This is not intended to be a question of individual analyst performance.]

2. Were the licensee's response and corrective actions appropriate to an identified PWSCC flaw in the u-bend area in SG 24, tube R2C67, in 1997? In particular, did the licensee use this information to re-assess the adequacy of the inspection technique and data analysis.

3. Were the licensee's response and corrective actions appropriate to identified copper-magnetite deposits and sludge pile interference with the inspection technique and data analysis?

4. Was the licensee's response appropriate to poor signal to noise conditions, probe skipping, bad data and analysts missed calls.
5. Determine the licensee's assessment and corrective actions for copper and magnetite deposition.
6. Determine whether the licensee adequately assessed the impact of poor quality of eddy current inspection data on the ability to reliably perform condition monitoring and operational assessment..
7. Review of the appropriateness of analyst guidelines, in light of site specific steam generator inspection challenges.
8. Understand the industry history prior to 1997 on U-Bend PWSCC.

2. Review (1) qualification of analysts, (2) the quality of licensee specific training provided to analysts, (2) the licensee's process for remediation of missed calls by analysts, and (3) the licensee's tracking, trending, assessment and corrective actions to missed analyst calls. This review should include the assessment of the number of missed calls by one of the two independent analysts during the 1997 inspections. Also, the level of control of SG inspections under 10 CFR Part 50, Appendix B, e.g., training procedures, should be reviewed.

3. Review vendor-licensee interface including (1) degree of licensee oversight of contractor analysts, (2) degree of independent licensee review of contractor work, and (3) degree of independent licensee assessment of steam generator conditions.

4. Develop a timeline of IP2 operating experience on steam generator eddy current inspections and degradation mechanisms, including when each was identified and the degree of degradation. Determine the licensee's assessment and corrective actions for the degradation. These should include, at a minimum:

- * Flow Slot Hourglassing
- * ODSCC
- * PWSCC
- * Tube Denting
- * Pitting

5. Determine the appropriateness of the licensee's flow slot hourglassing measurement techniques and acceptance criteria.

6. Review the licensee's compliance with technical specifications and 10 CFR Appendix B, with respect to the 1997 steam generator inspections and assessments. Ensure that the licensee met both TS requirements and commitments that relate to SG inspections.

- B. Verify and review selected information in support of NRR's safety evaluation. These items will be identified during NRR review of licensee's operational assessment and development of the safety evaluation.

III. Inspection Members

Wayne Schmidt, Team Leader, Region I
Greg Cranston, Assistant Team Leader
Mike Modes, Senior Reactor Inspector
Laura Dudes, Senior Resident Inspector, Oyster Creek
Caius Dodd, Contractor (Tentative)
Ian Barnes, Contractor (Tentative)
Emmett Murphy, NRR (In-Office Support Only)
Stephanie Coffin, NRR (In-Office Support Only)

IV. Inspection Schedule

The inspection entrance meeting is planned for June 8, 2000. On-site inspections are planned during the week of June 5 and June 19. The inspection exit meeting will be determined at a later time.

Inspection will be conducted under the guidelines of the reactor oversight program. Inspection hours are to be charged to procedure 93812 and prep/doc charged to TACs SEP/SED, respectively.

V. Inspection Support

EPRI guidelines in effect in 1997
Operation Experience Information on SG degradation and inspection
Indian Point 2 past operational assessments
Enforcement history associated with tube rupture events in the industry