

July 10, 2008

Mr. Thomas D. Walt, Vice President
H. B. Robinson Steam Electric Plant,
Unit No. 2
Carolina Power & Light Company
3581 West Entrance Road
Hartsville, South Carolina 29550-0790

SUBJECT: H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2 – REVIEW OF THE
SPRING 2007 REFUELING OUTAGE 24 STEAM GENERATOR TUBE
INSPECTION REPORT (TAC NO. MD7311)

Dear Mr. Walt:

By letter dated November 1, 2007, Carolina Power & Light Company, now doing business as Progress Energy Carolinas, Inc. (PEC), the licensee for the H.B. Robinson Steam Electric Plant, Unit 2 (HBRSEP), submitted the steam generator (SG) tube inspection report for Refueling Outage 24 in accordance with Technical Specification (TS) Section 5.6.8.

Additional information regarding the SG tube inspections was provided in an in-service inspection report dated August 2, 2007, and licensee responses to requests for additional information dated April 30, 2008, and June 24, 2008.

As discussed in the enclosed evaluation, the Nuclear Regulatory Commission staff has completed its review of the above documents and concludes that PEC provided the information required by the HBRSEP TSs. In addition, the staff did not identify any technical issues that warrant followup action at this time.

If you have any questions regarding this matter, please contact me at (301) 415-3178.

Sincerely,

/RA/

Marlayna Vaaler, Project Manager
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-261

Enclosure: As stated

cc w/enclosure: See next page

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Carolina Power & Light Company

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Unit No. 2**

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EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
CAROLINA POWER AND LIGHT COMPANY
STEAM GENERATOR TUBE INSPECTION REPORT FOR THE SPRING 2007 OUTAGE
H.B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261

1.0 INTRODUCTION

By letter dated November 1, 2007 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML073110281), Carolina Power & Light Company, now doing business as Progress Energy Carolinas, Inc., the licensee for the H.B. Robinson Steam Electric Plant, Unit 2 (HBRSEP), submitted the steam generator (SG) tube inspection report for Refueling Outage (RFO) 24 in accordance with Technical Specification (TS) Section 5.6.8.

Additional information regarding the SG tube inspections was provided in an in-service inspection report dated August 2, 2007 (ADAMS Accession No. ML072250364), and licensee responses to requests for additional information (RAIs) dated April 30, 2008 (ADAMS Accession No. ML081270049), and June 24, 2008 (ADAMS Accession No. ML081790164).

2.0 BACKGROUND

HBRSEP has three Westinghouse model 44F SGs, which were installed in 1984. Each SG has 3214 thermally treated Alloy 600 tubes with an outside diameter of 0.875 inches and a nominal wall thickness of 0.050 inch. The tubes are supported by a number of stainless steel tube support plates with quatrefoil shaped holes and V shaped Alloy 600 anti-vibration bars.

3.0 EVALUATION

The licensee provided the scope, extent, methods, and results of their SG tube inspections in the documents referenced above. In addition, the licensee described corrective actions in the form of tube plugging and tube stabilization taken in response to the inspection findings.

Based on its review of the information submitted in the licensee reports, the NRC staff has the following observations and comments:

- At the end of the RFO 24, HBRSEP was in the second sequential inservice inspection (ISI) period (90 Effective Full Power Months (EFPM)). The SGs operated 84.84 EFPM during this period.

Enclosure

After reviewing the licensee's April 30, 2008, letter, the NRC staff conducted a phone call with the licensee on May 21, 2008, to clarify several issues. During this call, the licensee clarified the following:

- In the "Service Time and Corresponding ISI Intervals" table, the "End-of-Cycle (EOC) EFPY [Effective Full Power Years]" column contains the cumulative EFPY for the plant. The "Cumulative EFPY" column contains the EFPY since conducting the first SG ISI, and not the EFPY from the date the SGs were replaced. The interval between the replacement of the SGs and the first SG ISI is about 0.9 to 1 EFPY.
- There was a mid-cycle outage at 14.2 EFPY, during which approximately 484 tubes were inspected.
- A clarification was made on the Category 1 item found in SG A. The initial classification was Category 1, after which an engineering evaluation determined that the object was acceptable to remain in the SGs for two more cycles.
- In the steam drum, a pin hole was discovered in one of the structures that hold the moisture separators in place (the "pagoda"). It was unclear if the pin hole was due to a fabrication flaw or a result of erosion. It was recommended that this area be inspected again in 2010 during RFO 26.
- There is 1 tube in SG A that was not expanded for the full depth of the tubesheet in the cold leg, and 1 tube in SG B that was only partially expanded in the tubesheet on the cold leg. A rotating probe inspection of these regions revealed no degradation.
- A number of tubes have indications of wear attributed to loose parts/maintenance activities.
- A total of 6 tubes were plugged during RFO 24: 5 tubes in SG A and 1 tube in SG C.

4.0 CONCLUSION

Based on a review of the information provided, the NRC staff concludes that the licensee provided the information required by the HBRSEP TSs. In addition, the staff concludes that there are no technical issues that warrant follow up action at this time since the inspections appear to be consistent with the objective of detecting potential tube degradation, and the inspection results appear to be consistent with industry operating experience at similarly designed and operated units.

Principal Contributor: Emma Wong

Date: July 10, 2008