

November 9, 2005

Mr. J. W. Moyer, Vice President
Carolina Power & Light Company
H. B. Robinson Steam Electric Plant,
Unit No. 2
3581 West Entrance Road
Hartsville, South Carolina 29550

SUBJECT: H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT 2 - REVIEW OF
90-DAY STEAM GENERATOR TUBE INSERVICE INSPECTION SUMMARY
REPORTS FOR SPRING 2004 REFUELING OUTAGE (TAC NO. MC4588)

Dear Mr. Moyer:

By letters dated August 26, 2004, May 18, 2004, June 15, 2004, October 28, 2004, and May 25, 2005, Carolina Power & Light Company, submitted the results of the steam generator tube inspections at the H. B. Robinson Steam Electric Plant, Unit 2 (HBRSEP2) during the Spring 2004 refueling outage 22.

As discussed in the enclosed evaluation, we have concluded that you have provided the information required by the technical specifications for HBRSEP2. In addition, we did not identify any technical issues that warranted followup action at this time.

Sincerely,

/RA/

Chandu P. Patel, 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/encl: See next page

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SUMMARY OF H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT 2
STEAM GENERATOR TUBE INSERVICE INSPECTIONS DURING
SPRING 2004 REFUELING OUTAGE 22
(TAC NO. MC4588)

By letters dated August 26, 2004, May 18, 2004, June 15, 2004, October 28, 2004, and May 25, 2005, Carolina Power & Light Company, the licensee, submitted the results of the steam generator tube inspections at the H. B. Robinson Steam Electric Plant, Unit 2 (HBRSEP2) during the Spring 2004 refueling outage (RFO) 22. In addition, by letter dated December 20, 2004, the NRC staff provided a summary of a conference call held to discuss the steam generator tube inspections.

HBRSEP2 has three Westinghouse model 44F steam generators, installed at the plant in 1984. Each steam generator has 3214 thermally treated alloy 600 tubes that have an outside diameter of 0.875 inches and a wall thickness of 0.050 inches. The tubes are supported by stainless steel tube support plates with quatrefoil-shaped holes and V-shaped alloy 600 anti-vibration bars.

The licensee provided the scope, extent, methods, and results of its steam generator tube inspections in the documents referenced above. In addition, the licensee described corrective actions taken in response to the inspection findings. A summary of some of the significant aspects of the inspection is provided below.

Evaluation of eddy current data determined that tube R23-C72 in steam generator "B" was the source of a primary-to-secondary-side leak that was initially detected in January 2004. The cause of degradation was determined to be wear. Degradation in the tube progressed from non-detectable to 100% throughwall in one inspection interval. In response to these findings, the licensee established a number of corrective actions, such as (1) the eddy current examination of surrounding tubes, (2) in-situ pressure testing of the leaking tube, (3) plugging and staking (as applicable) of tubes that exceeded or approached the technical specifications tube plugging limit, (4) an operational assessment for Cycles 23 and 24, which determined that no predicted flaw of any type would equal or exceed its respective structural limit, and (5) increasing the awareness of personnel who perform secondary-side maintenance by documenting the impact of foreign material in steam generator internals in the "Maintenance Services Orientation" package for RFO-23.

The licensee screened data for potential offsets or shifts in the eddy current signal traces, as discussed in Information Notice (IN) 2002-21, "Axial Outside-Diameter Cracking Affecting Thermally Treated Alloy 600 Steam Generator Tubing," and IN 2002-21, Supplement 1. The licensee identified five tubes in steam generator "A," ten tubes in steam generator "B," and 27 tubes in steam generator "C" as having the potential for increased residual stress. All of the identified tubes were in higher-row tubes (i.e., Rows 9 through 45). However, none of the identified tubes exhibited evidence of cracking. Four of the ten tubes in steam generator "B," identified as having the potential for higher residual stress, were examined at the hot-leg expansion transition using a rotating probe, and no indications of degradation were reported. Based on a review of the information provided, the staff concludes that the licensee provided the information required by its technical specifications. The NRC staff also concludes that there

ENCLOSURE

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, except as noted above.

Mr. J. W. Moyer
Carolina Power & Light Company

H. B. Robinson Steam Electric Plant,
Unit No. 2

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