

April 18, 2003

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: REVIEW OF 90-DAY STEAM GENERATOR TUBE INSERVICE INSPECTION
REPORT FOR A REFUELING OUTAGE IN 2001 AT H. B. ROBINSON STEAM
ELECTRIC PLANT, UNIT NO. 2 (TAC NO. MB3239)

Dear Mr. Moyer:

By letter dated August 10, 2001, as supplemented by letter dated July 3, 2002, Carolina Power & Light Company (CP&L) submitted its 90-day inservice inspection summary report regarding the steam generator tube inspections performed at H. B. Robinson Steam Electric Plant, Unit No. 2 (HBRSEP2) during refueling outage 20.

As discussed in the enclosed evaluation, the NRC staff concluded that you provided the information required by the technical specifications for HBRSEP2 and that no additional followup is required at this time. If you have any questions, please contact me at (301) 415-3025.

Sincerely,

/RA/

Chandu P. Patel, Project Manager, Section 2
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-261

Enclosure: Evaluation

cc w/encl: See next page

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NUCLEAR REGULATORY COMMISSION STAFF'S REVIEW
OF THE STEAM GENERATOR 90-DAY REPORT
CAROLINA POWER & LIGHT COMPANY
H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261

By letter dated August 10, 2001, Carolina Power & Light Company (CP&L, the licensee) submitted its 90-day inservice inspection summary report regarding the steam generator tube inspections performed at H. B. Robinson Steam Electric Plant, Unit No. 2 (HBRSEP2) during refueling outage (RFO) 20.

In reviewing this report and previous 90-day reports submitted on January 20, 2000 (RFO 19), and July 9, 1998 (RFO 18), and monthly operating reports dated May 14, 1998 (RFO 18), November 15, 1999 (RFO 19), and June 12, 2001 (RFO 20), the NRC developed a set of questions. Responses to these questions were submitted to the NRC by the licensee on July 3, 2002. A summary of the NRC's evaluation of the RFO 20 inspection results is provided below.

HBRSEP2 has three Westinghouse Model 44F steam generators. These steam generators were placed in service in 1984 and have thermally treated Alloy 600 tubes. During RFO 20 in 2001, approximately 50 percent of the tubes in steam generators B and C were inspected full-length with a bobbin coil. In addition to the bobbin coil inspections, a rotating probe equipped with a plus point coil was used to inspect 20 percent of the hot-leg manufacturing buff marks, 20 percent of the dents, the U-bend region of 50 percent of the row 1 and 2 tubes, and the hot-leg expansion transition region of 50 percent of the tubes in steam generators B and C. There was no primary-to-secondary leakage at the time RFO 20 was entered.

As a result of these inspections, four tubes were plugged. One of these tubes was plugged because a dent, present since steam generator fabrication, prevented an examination by a qualified bobbin probe, and the use of a rotating probe resulted in poor quality data. A second tube was plugged for a 43-percent through-wall wear indication at the hot-leg flow distribution baffle. The wear was attributed to a transient loose part. This tube is located in the periphery of the tube bundle, and no indication was present during the previous inspection of this tube in 1998. A third tube was plugged for wear near the top of the hot-leg tubesheet. This tube also had a wear indication (approximately 32-percent through-wall), which was attributed to a transient loose part. Ultrasonic testing performed on this tube led the licensee to attribute the indication to wear. This tube is not in the periphery of the tube bundle. A fourth tube was plugged for an obstruction in the tube above the sixth hot-leg tube support plate. This tube would not permit the passage of a 0.650-inch diameter rotating probe, but did permit passage

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of a 3/8-inch poly shaft. The obstruction was attributed to foreign material lodged in the tube, although visual examinations were not performed to confirm this. The obstruction is not located near a tube support (i.e., it is mid-span). This tube was previously examined during RFOs 15 and 16 with no obstruction noted (i.e., a 0.720-inch probe passed through the tube).

Secondary side visual inspections have been performed at HBRSEP2. This type of inspection involves inspection of the tube support plates up through the flow slots to the bottom of the top tube support plate. No upper bundle fouling or corrosion product build-up in the tube support plate areas was identified. Only minor deposition in the land area of the quatrefoil support with no bridging was observed during these examinations.

Based on our review of the information provided by the licensee, the NRC staff concludes that the information was submitted as required by HBRSEP2 technical specifications and that no additional follow-up is required at this time; however, in future evaluations the licensee should consider confirming the cause for any restrictions found in tubes. The licensee's explanation for the tube found with a restriction during this outage is plausible, but not definitive. Additional investigation including visual examination may provide insights on the cause of a restriction and may rule out an active degradation mechanism (i.e., denting that could lead to cracking).

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Date: April 18, 2003

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