

August 14, 2007

Mr. J. R. Morris  
Site Vice President  
Catawba Nuclear Station  
Duke Power Company LLC  
4800 Concord Road  
York, SC 29745

SUBJECT: CATAWBA NUCLEAR STATION, UNIT 2 - REVIEW OF CYCLE 14 STEAM  
GENERATOR TUBE INSERVICE INSPECTION REPORTS (TAC NO. MD3419)

Dear Mr. Morris:

By letter to the Nuclear Regulatory Commission (NRC) dated August 31, 2006, as supplemented by letter dated May 31, 2007, Duke Power Company LLC (the licensee) submitted the Cycle 14 steam generator (SG) tube inservice inspection reports for Catawba Nuclear Station (Catawba), Unit 2, in accordance with Technical Specification (TS) Section 5.6.8, and as required by the American Society of Mechanical Engineers, *Boiler and Pressure Vessel Code*, Section XI, Paragraph IWA-6230, for the SG tube inspections performed during the end of cycle (EOC) 14 refueling outage (March 2006).

A summary of the NRC staff's evaluation of the EOC 14 refueling outage SG tube inspection results is enclosed. The NRC staff concludes that the licensee provided the information required by the Catawba Unit 2 TSs, and that no additional follow-up is required at this time.

Sincerely,

**/RA/**

John F. Stang, Senior Project Manager  
Plant Licensing Branch II-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-414

Enclosure:  
EOC 14 Refueling Outage SG Tube Inspection Results

cc w/encl: See next page

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OFFICE OF NUCLEAR REACTOR REGULATION  
REVIEW OF CYCLE 14 STEAM GENERATOR TUBE INSPECTION REPORTS  
CATAWBA NUCLEAR STATION, UNIT 2  
DOCKET NO. 50-414

By letter to the Nuclear Regulatory Commission (NRC) dated August 31, 2006 (Agencywide Documents Access and Management System (ADAMS), Accession No. ML062550112), as supplemented by letter dated May 31, 2007 (ADAMS Accession No. ML071630231), Duke Power Company LLC (the licensee), submitted the Cycle 14 steam generator (SG) tube inservice inspection reports for Catawba Nuclear Station (Catawba), Unit 2, in accordance with Technical Specification (TS) Section 5.6.8, and as required by the American Society of Mechanical Engineers, *Boiler and Pressure Vessel Code*, Section XI, Paragraph IWA-6230, for the SG tube inspections performed during the end of cycle (EOC) 14 refueling outage (March 2006).

Catawba Unit 2 has four Westinghouse Model D5 SGs, which are designated 2A through 2D. All four SGs were inspected During EOC 14 refueling outages. Each SG has 4,570 thermally treated Alloy 600 tubes with an outside diameter of 0.750-inch and a nominal wall thickness of 0.043-inch. The tubes are hydraulically expanded for the full-depth of the tubesheet at each end. The tubes are supported by Type 405 stainless steel support plates with quatrefoil-shaped holes. The U-bend region of the tubes installed in Rows 1 through 9 was thermally treated after bending in order to reduce stress.

The licensee provided the scope, extent, methods, and results of the Catawba Unit 2 SG tube inspections in the documents referenced above. In addition, the licensee described corrective actions (i.e., tube plugging) taken in response to the inspection findings.

The staff has the following notes/observations as a result of reviewing the information provided by the licensee.

During the EOC 14 outage, additional crack-like indications were found near the tube end in all four SGs. All of these indications were left in service since they were located in a region of the tubesheet where flaws are not required to be removed from service in accordance with the TSs.

- The licensee performed secondary side inspections of the pre-heater baffle plate and pre-heater water-boxes for erosion and wear as a follow-up to industry events at other plants with the same model of SG. As a result of the inspection of the baffle plate in EOC 14, a total of 202 objects were identified in the four SGs. Of these 202 objects, 133 were removed. All of the remaining objects were evaluated by the licensee for

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acceptability to leave in place for one cycle of operation. The waterbox cap plate region of all four SGs were inspected during the EOC 14 outage. Since SGs 2A did not have a cap plate cutout (as confirmed during the EOC 13 outage), it was not reinspected during the EOC 14 outage. The EOC 13 inspection showed the welds associated with the cap plate cutout region were structurally sound. The inspections of the waterbox cap plate region during the EOC 14 outage in SGs 2B, 2C, and 2D did not show any change in condition in these welds. No unusual wear was found.

- An inspection of the primary moisture separator region is planned for EOC 15 in 2007.
- The licensee indicated that certain wear indications were not sized during the outage, but that they were determined to meet structural and TS tube repair limits and left in service (i.e., < 40% through-wall).

Based on a review of the information provided, the NRC staff concludes that the licensee provided the information required by their TSS. In addition, the NRC 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: J. Burke

Date: August 14, 2007

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