



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

July 27, 2009

Mr. Dave Baxter  
Vice President, Oconee Site  
Duke Energy Carolinas, LLC  
7800 Rochester Highway  
Seneca, SC 29672

SUBJECT: OCONEE NUCLEAR STATION, UNIT 1, EVALUATION OF 2008 (CYCLE 24)  
STEAM GENERATOR TUBE INSPECTIONS (TAC NO. ME0457)

Dear Mr. Baxter:

By letter dated August 28, 2008, as supplemented June 30, 2009, Duke Energy Carolinas, LLC (the licensee) submitted information pertaining to its 2008 steam generator (SG) tube inspections at Oconee Nuclear Station, Unit 1 during the Cycle 24 refueling outage.

The U.S Nuclear Regulatory Commission (NRC) staff has completed its review of these reports and concludes that the licensee provided the information required by their technical specifications and that no additional follow-up is required at this time. The NRC staff's review of the reports is enclosed.

Sincerely,

A handwritten signature in black ink, appearing to read "John Stang", written over a white background.

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

Docket No. 50-269

Enclosure:  
As stated

cc w/encl: Distribution via Listserv

SUMMARY OF REVIEW BY THE OFFICE OF NUCLEAR REACTOR REGULATION

OCONEE NUCLEAR STATION, UNIT 1

EVALUATION OF THE STEAM GENERATOR INSPECTIONS

PERFORMED DURING THE 2008 REFUELING OUTAGE

DOCKET NO. 50-269

By letters dated August 28, 2008 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML082490276), as supplemented June 30, 2009 (ADAMS Accession No. ML091831237), Duke Energy Carolinas, LLC, (the licensee), submitted information summarizing the results of the 2008 steam generator (SG) tube inspections at Oconee Nuclear Station, Unit 1 (Oconee 1).

Oconee 1 is a two-loop pressurized-water reactor with once-through steam generators (OTSGs) manufactured by Babcock & Wilcox (B&W), Canada. The Oconee 1 OTSGs are replacement OTSGs that were installed during the fall 2003 refueling outage. The OTSGs consist of 15,631 thermally treated Alloy 690 tubes that have been hydraulically expanded into the tubesheet to a depth of 13 inches. There are 15 Type 410 stainless steel tube support plates (TSP) with trefoil-shaped holes. However, there are some round drilled openings at the 14<sup>th</sup> TSP. The 2008 inspections at Oconee 1 were the third inservice inspections of the replacement OTSGs.

Widespread wear degradation of the tubing at TSP locations has been observed at all three Oconee units. The licensee provided the scope, extent, methods, and results of their SG tube inspections in the document referenced above. In addition, the licensee described corrective actions (e.g., tube plugging) taken in response to the inspection findings.

As discussed in a public meeting on March 27, 2008, the licensee and B&W, have determined that the most probable cause of the tube wear indications at TSP locations is the tubes vibrating and impacting the tube support plates. The licensee and B&W have developed a conceptual repair, but the plugging projection model indicates that the Oconee SGs can meet their design life without implementing this repair, although a number of tubes may have to be plugged.

Based on a review of the information provided, the Nuclear Regulatory Commission staff concludes that the licensee provided the information required by their technical specifications. 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.

Enclosure

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*/RA/*

John Stang, Senior Project Manager  
Plant Licensing Branch II-1  
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**ADAMS Accession No.: ML092080073**

\*Memo submitted by Tech Staff dated

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