

July 17, 2007

Mr. Bruce H. Hamilton
Vice President, Oconee Site
Duke Power Company LLC
7800 Rochester Highway
Seneca, SC 29672

SUBJECT: SUMMARY OF CONFERENCE CALL REGARDING SPRING 2007 STEAM
GENERATOR TUBE INSPECTIONS AT OCONEE NUCLEAR STATION,
UNIT 2 (TAC NO. MD5481)

Dear Mr. Hamilton:

On May 15, 2007, we participated in a conference call with your staff to discuss the scope, results, and status of steam generator (SG) tube inspections being conducted at that time during the Spring 2007 refueling outage for Oconee Nuclear Station, Unit 2. Enclosure 1 is a summary of the call. Enclosure 2 contains steam generator tube inspection discussion points that you provided prior to the call.

Sincerely,

/RA/

Leonard N. Olshan, Project Manager
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-270

Enclosures:

1. Conference Call Summary
2. Steam Generator Tube Inspection Discussion Points

cc w/encls: See next page

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MAY 15, 2007, CONFERENCE CALL SUMMARY
REGARDING SPRING 2007 STEAM GENERATOR INSPECTIONS

DUKE POWER COMPANY LLC
OCONEE NUCLEAR STATION, UNIT 2
DOCKET NO. 50-270

Introduction and Background

On May 15, 2007, the Nuclear Regulatory Commission (NRC) staff participated in a conference call with Duke Power Company LLC (the licensee) to discuss the scope, results, and status of steam generator (SG) tube inspections being conducted at that time during the spring 2007 refueling outage for Oconee Nuclear Station, Unit 2.

Oconee Unit 2 is a two-loop pressurized-water reactor with once-through steam generators (OTSGs) manufactured by Babcock & Wilcox (B&W), Canada. The Oconee Unit 2 OTSGs are replacement OTSGs that were installed during the spring 2004 refueling outage. The replacement 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) of trifoil broach design. However, there are some drilled openings at the 14th TSP. The ongoing inspections at Oconee Unit 2 are the second inservice inspections of the replacement OTSGs.

A major point of interest to the NRC staff going into the call was the state of tube wear at Oconee Unit 2. The first inservice inspection of the replacement OTSGs at Oconee Unit 2, fall 2005, revealed unexpected, widespread wear degradation of the tubing at TSP locations. Oconee Unit 1 and Oconee Unit 3 have also experienced this widespread tube wear degradation at TSP locations.

Call Summary

During the call, the licensee addressed each of a number of discussion points (Attachment 1) prepared by the NRC staff in advance of the call, as summarized below.

No primary to secondary leakage was observed during the second operating cycle with the replacement OTSGs. Thus, no secondary side pressure test was performed.

The OTSG tube inspections were performed in accordance with the applicable Electric Power Research Institute guidelines, without exception.

The scope of inspection was 100 percent of the tubes in both OTSGs over their full length using a combination X-probe/bobbin probe (i.e., 50 percent with a combination X-probe and the remaining 50 percent with a standard bobbin probe). Selected indications were further characterized with an array probe (i.e., all wear indications greater than or equal to 20-percent through-wall (TW)). These inspections identified a total of 2,169 indications in 1,587 tubes in SG A and 2,493 indications in 1,724 tubes in SG B. The affected tubes represent about 10.59 percent of the total tube population (31,262 tubes). All of the indications were at TSP locations and were dispositioned as wear flaws. These wear indications were located

predominantly at TSP 10 through 14 at the periphery of the tube bundle. Only one wear indication was found to be greater than the technical specification plugging limit of 40-percent TW. This 42-percent TW wear indication was located in tube row 75, column 2 and was plugged and stabilized.

Subsequent to the call, the licensee provided a summary of the scope and results of the inspection, which is provided in Enclosure 2.

The licensee performed no in-situ pressure testing during this outage.

The licensee saw no evidence of loose parts or foreign objects during the eddy current inspection and did not perform visual examinations from the secondary side.

The licensee reported no new developments regarding its ongoing investigation into the cause of the widespread wear indications in TSP locations and possible corrective actions.

A tube identification issue affecting the report submitted by the licensee's letter dated December 21, 2005 (Agencywide Documents Access and Management System Accession Number ML060030485) regarding the fall 2005 Oconee Unit 2 inspections was discovered during the spring 2007 refueling outage. The licensee determined that 2 calibration groups in SG B consisting of a total of 53 tubes were misidentified during the fall 2005 refueling outage. This resulted in 33 tubes in SG B not being inspected during the fall 2005 refueling outage. The licensee reported in the December 21, 2005, submittal that 15,630 tubes were inspected in SG B when in fact only 15,597 tubes were inspected in SG B during the fall 2005 refueling outage. The 33 tubes were inspected during the spring 2007 refueling outage and the largest wear indication was found to be 15-percent TW. The licensee has requested the vendor to perform an investigation to determine the root cause of the tube misidentification.

Regarding Framatome's notification of the effect of tubesheet hole dilation on the service life of B&W welded plugs, the licensee stated that this is not an issue for Oconee Unit 2 since their plug qualification included this effect.

Finally, the licensee stated the severed plugged tube issue discussed in NRC Information Notice (IN) 2002-02 and IN 2002-02, Supplement 1, is not applicable to the types of plugs in use at Oconee Unit 2.

Oconee Nuclear Station, Units 1, 2, and 3

cc:

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