



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

July 14, 2010

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

SUBJECT: CATAWBA NUCLEAR STATION, UNIT 2 (CATAWBA 2) - SUMMARY OF  
TELEPHONE CONFERENCE CALL REGARDING THE 2009 STEAM  
GENERATOR (SG) TUBE INSPECTIONS (TAC NOS. ME0910 AND ME0911)

Dear Mr. Morris:

On March 24, 2009, U.S. Nuclear Regulatory Commission (NRC) staff participated in a conference call with representatives of Duke Energy Carolinas, LLC (the licensee), regarding its ongoing SG tube inspection activities at Catawba 2. To facilitate this conference call, the licensee provided supplemental materials regarding the scope and results of its SG tube inspection activities.

Enclosed is a summary of the conference call. The NRC staff did not identify any issues that would warrant immediate follow-up action.

If you have any questions, please contact me at (301) 415-1119 or send an e-mail to [Jon.Thompson@nrc.gov](mailto:Jon.Thompson@nrc.gov).

Sincerely,

A handwritten signature in black ink that reads "Jon Thompson".

Jon Thompson, Project Manager  
Plant Licensing Branch II-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-414

Enclosure:  
Conference Call Summary

cc w/encl: Distribution via ListServ

SUMMARY OF MARCH 24, 2009, CONFERENCE CALL WITH  
DUKE ENERGY CAROLINAS, LLC, REGARDING THE 2009  
STEAM GENERATOR TUBE INSPECTION RESULTS  
CATAWBA NUCLEAR STATION, UNIT 2  
DOCKET NO. 50-414

On March 24, 2009, the U.S. Nuclear Regulatory Commission (NRC) staff participated in a conference call with representatives of Duke Energy Carolinas, LLC (the licensee), regarding its ongoing steam generator (SG) tube inspection activities at Catawba Nuclear Station, Unit 2 (Catawba 2). To facilitate this conference call, the licensee provided supplemental material (Agencywide Documents Access and Management System (ADAMS), Accession No. ML091380251) regarding the scope and results of its SG tube inspection activities.

Catawba 2 has four Westinghouse Electric Company Model D5 SGs which were placed in service in 1986. The tubing is made from thermally treated Alloy 600. The SGs feature full-depth hydraulically expanded joints in the tubesheet and type 405 stainless steel support plates with quatrefoil holes. Each SG contains 4,570 tubes.

During the March 24, 2009, conference call, the licensee provided additional clarifying information, or information not included in the supplemental material, which is summarized below:

- In the General Information Section:
  - o The licensee indicated that they were using the rotating gheht (RG34) probe to inspect selected locations.
- In the Inspection Scope:
  - o The licensee indicated that they inspected the U-bend region of 35% of the tubes in rows 1 through 5 with the intent that the U-bend region of all tubes would be inspected after three 35% samples.
  - o The 100% inspection of the cold-leg tubesheet region in SGs A and D was based on the inspection results from the last outage. During the last outage, indications were found in the cold-leg tubesheet region of SGs A and D; none were found in SGs B and C.
  - o Row 10 is the first row containing U-bends which were not stress relieved.
  - o A 50% sample of all dents was also performed during the last outage.
  - o A +Point probe was used to inspect all tube-end indications.

Enclosure

- o The indications at the top of tubesheet and at the tube supports were inspected with a +Point probe, a magnetically biased +Point probe, and a RG34 probe.
- In the Current Status Section:
  - o The remaining inspections in SG A were mainly on the cold-leg side of the SG.
  - o The remaining inspections in SG D were mainly in the cold-leg with some confirmatory examinations on the hot-leg, e.g., +Point probe inspections.
- In the Inspection Results Section:
  - o The licensee stated that SG B runs hotter than the other 3 SGs, and this could account for the discrepancy in the number of tubes with indications.
  - o It was clarified that in SG D hot leg there were two tubes with crack-like indications at the tube support plate TSP locations. These two tubes had a total of 6 crack-like indications.
  - o 166 indications were identified below the Interim Alternate Repair Criterion (IARC) depth in SG B. This represents 24 more than was detected last outage.
  - o There were no indications detected at the top of the tubesheet in SG B, although 8 had been detected during the last outage. There were 14 possible indications in SG B as a result of the array probe inspections, but all were dispositioned as not having degradation based on inspection with other probes, e.g., +Point. During the prior outage, all indications at the top of the tubesheet in SG B were confirmed as flaws with a +Point probe and one of these tubes was also confirmed to contain a flaw with an RG34 probe.
  - o The indication at the tube support plate elevation in SG B was located at the 2nd tube support plate elevation, i.e., the first tube support above the flow distribution baffle, and is in a tube with an eddy current offset (Information Notice 2002-21; ADAMS Accession No. ML021770094). The flaw was small, axially oriented, and associated with one of the quatrefoil leads. The indication measured 0.14 volts with a +Point probe and was approximately 0.4 inches long. The flaw was confirmed to be present with several different inspection probes.
  - o All of the flaws at the tube support plate elevations are in tubes in row 10 or higher, i.e., the non-stress relieved tubes.
  - o All of the top of tubesheet indications reported in the table were detected with an array coil but had not yet been inspected with a +Point probe.
  - o In terms of data quality, the licensee indicated that the data from the top of tubesheet region is somewhat noisy, but the data at the tube support plate elevations is relatively clean.

- In the Repair Scope:
  - o The licensee clarified that at the time of the call, there was one tube with a bulge that was a candidate for plugging in SG C. The bulge was 0.75 inches from the top of the tubesheet.
  
- In the NRC Generic Questions:
  - o The licensee stated that all of the tube end crack-like indications were in the bottom 1 inch of the tube.
  - o The licensee stated that the amount of objects found in the pre-heater section of the SGs has been decreasing over time. The usual items found are small, e.g., wires, bristles, etc. In this inspection, about 20 small items (less than 0.5 inches long) per SG were found and approximately 50% were removed.
  - o No indications of wear had depths greater than 40% through-wall. The growth rate of the wear indications is low.
  - o The licensee indicated that two tubes in SG C were identified with indications of wear attributed to loose parts; these indications were not reflected on the document provided by the licensee. These indications were in the preheater region of the SG, i.e., on the cold-leg. There is one tube that has a 20% through-wall indication. This indication has not changed since the prior inspection. The other indication is new, i.e., not present in the prior inspection, and measures 14% through-wall. There is no eddy current or visual evidence of a part at either of these two locations.
  - o No sludge lancing was performed during this outage. Sludge lancing is typically performed every other outage. There were no visual inspections at the top of the tubesheet and there was no eddy current evidence of any possible loose parts at the top of the tubesheet.
  - o A visual inspection of the upper tube support plate was performed in one SG. The quality of the visual inspection was better this outage than in the last outage due to an effort prior to the outage to improve the inspection capability. There was some evidence of flakes of deposits and there was some minor evidence of deposits in the quatrefoil openings, e.g., rounded edges, but the holes were generally clean and open, i.e., only minor amount of deposits.
  
- At the end of the call, the licensee indicated that they would be reviewing the data from the tube end indications to confirm that they are not growing excessively.

The NRC staff did not identify any issues that required follow-up action at this time; however, the staff asked to be notified in the event that any unusual conditions were detected during the remainder of the outage.

July 14, 2010

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

SUBJECT: CATAWBA NUCLEAR STATION, UNIT 2 (CATAWBA 2) - SUMMARY OF TELEPHONE CONFERENCE CALL REGARDING THE 2009 STEAM GENERATOR (SG) TUBE INSPECTIONS (TAC NOS. ME0910 AND ME0911)

Dear Mr. Morris:

On March 24, 2009, U.S. Nuclear Regulatory Commission (NRC) staff participated in a conference call with representatives of Duke Energy Carolinas, LLC (the licensee), regarding its ongoing SG tube inspection activities at Catawba 2. To facilitate this conference call, the licensee provided supplemental materials regarding the scope and results of its SG tube inspection activities.

Enclosed is a summary of the conference call. The NRC staff did not identify any issues that would warrant immediate follow-up action.

If you have any questions, please contact me at (301) 415-1119 or send an e-mail to [Jon.Thompson@nrc.gov](mailto:Jon.Thompson@nrc.gov).

Sincerely,

*/RA/*

Jon Thompson, Project Manager  
Plant Licensing Branch II-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-414

Enclosure:  
Conference Call Summary

cc w/encl: Distribution via ListServ

**DISTRIBUTION:**

PUBLIC	RidsNrrDorIDpr Resource	RidsRgn2MailCenter Resource
LPL2-1 R/F	RidsNrrDorLpl2-1 Resource	KKarwoski, NRR/DCI/CSGB
RidsAcrsAcnw_MailCTR Resource	RidsOgcRp Resource	EWong, NRR/DCI/CSGB
RidsNrrDciCsgb Resource	RidsNrrPMCatawba Resource	RidsNrrLAMO'Brien Resource(hard copy)

**ADAMS Accession No. ML101900062** \*no significant changes from input sent 5/18/09 ML091380305

OFFICE	DORL/LPL2-1/PM	DORL/LPL2-1/LA	DCI/CSGB/BC*	DORL/LPL2-1/BC	DORL/LPL2-1/PM
NAME	JThompson	MO'Brien	MGavrilas*	GKulesa	JThompson
DATE	07/12/10	07/12/10	05/18/09	07/14/10	07/14/10

OFFICIAL RECORD COPY