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

May 26, 2021

Mr. Robert T. Simril
Site Vice President
Catawba Nuclear Station
Duke Energy Carolinas, LLC
4800 Concord Road
York, SC 29745

SUBJECT: CATAWBA NUCLEAR STATION, UNIT 2 - SUMMARY OF CONFERENCE CALL REGARDING THE SPRING 2021 STEAM GENERATOR TUBE INSPECTIONS (EPID: L-2021-NFO-0004)

Dear Mr. Simril:

On April 12, 2021, the U.S. Nuclear Regulatory Commission staff in the Corrosion and Steam Generator Branch (NCSG), Office of Nuclear Reactor Regulation participated in a conference call with Duke Energy Carolinas, LLC, to discuss the ongoing steam generator (SG) tube inspection activities at Catawba Nuclear Station, Unit 2 during refueling outage 24.

The summary of the conference call is attached as an enclosure to this letter.

If you have any questions, please contact me at 301-415-1438 or via e-mail at Karen.Cotton@nrc.gov.

Sincerely,

/RA/

Karen Cotton-Gross, Project Manager
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-414

Enclosure:
Summary of Conference Call

cc: Listserv

SUMMARY OF CONFERENCE CALL

CATAWBA NUCLEAR STATION, UNIT 2

SPRING 2021 STEAM GENERATOR TUBE INSPECTIONS

DOCKET NO. 50-414

On April 12, 2021, the U.S. Nuclear Regulatory Commission staff in the Corrosion and Steam Generator Branch, Office of Nuclear Reactor Regulation participated in a conference call with Duke Energy Carolinas, LLC (the licensee), to discuss the ongoing steam generator (SG) tube inspection activities at Catawba Nuclear Station, Unit 2 (Catawba Unit 2) during refueling outage (RFO) 24.

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

Information provided by the licensee during the conference call is summarized below:

- No primary-to-secondary leakage was observed during the recently completed operating cycle.

- Secondary side pressure tests were not performed during the outage.

- No exceptions were taken to the industry guidelines.

- Inspections were performed in all four SGs. The inspection scope included a 100 percent full length bobbin/array combination probe examination in all in-service tubes, except for the row 1 through 6 U-bends, which were inspected with an array probe.

- The licensee stated that they performed the enhanced probe inspection method as described in recently NRC-approved Technical Specifications Task Force (TSTF) Traveler TSTF-577, Revision 1, “Revised Frequencies for Steam Generator Tube Inspections” (Agencywide Documents Access and Management System Package Accession No. ML21099A086).

- The licensee reported the following indications identified at the time of the call:

    - 378 anti-vibration bar (AVB) wear indications in 233 tubes. The maximum depth was 36 percent through wall (TW), and the growth rate was 2.5 percent TW per effective full power year (EFPY) (0.95 probability at 50 percent confidence (95/50)).
    - 17 broached tube support plate (TSP) wear indications in 17 tubes. The maximum depth was 34 percent TW, and the maximum growth rate was 3.2 percent TW/EFPY.

Enclosure

  - 2 drilled TSP wear indications in 2 tubes. The maximum depth was 11 percent TW, and the growth rate was 0 percent TW/EFPY (95/50).
  - 49 foreign object (FO) wear indications in 45 tubes. The maximum depth was 43 percent TW.
  - 122 cracks below the H* depth in the tubesheet (Catawba Unit 2 has an alternate repair criteria amendment for indications below the H* depth).

- At the time of the call, the licensee planned to plug 16 tubes, including 14 high stress tubes (preventatively plug) and 2 tubes due to FO wear (1 in SG 2B and 1 in SG 2D). The licensee stated that after the 14 high stress tubes are plugged, there will be no known high stress tubes in service in any of the Catawba Unit 2 SGs.

- No *in situ* pressure tests were scheduled or planned for the outage.

- At the time of the call, visual inspections and foreign object search and retrieval (FOSAR) was performed in SGs 2A and 2D to characterize and remove loose parts. The visual inspections and FOSAR were performed at the top of tubesheet, and a visual inspection was performed at the bottom TSP in the preheater on the cold leg. Four FOs were identified in SG 2A and only one FO was removed from SG 2A. The FO that was removed from SG 2A was a valve locking tab from a feedwater check valve failure discovered during RFO 23. The other three FOs were determined to be acceptable to be left in place. No FOs were identified in SG 2D. Visual Inspections and FOSAR was yet to be performed in SGs 2B and 2C.

- FO wear was identified at an AVB wear indication, which is not typical, although there was no loose part detected during the outage.

- All four SGs were chemically cleaned on the secondary side during the outage and a total of 5,375 pounds of deposits were removed. A visual inspection of the SG 2A upper most TSP was performed to access the effectiveness of the chemical cleaning. The licensee stated that the deposits at broaches were greatly improved (decreased) from the last inspection. At the time of the call, sludge lancing was performed in SGs 2A and 2D, and 67 and 76 pounds of sludge were removed from SGs 2A and 2D, respectively. The licensee stated that the amount of sludge removed was roughly four times higher than usual due to the chemical cleaning. Sludge lancing in SGs 2B and 2C was yet to be performed.

- The estimated completion date of the SG inspections was April 14, 2021.

SUBJECT: CATAWBA NUCLEAR STATION, UNIT 2 - SUMMARY OF CONFERENCE CALL REGARDING THE SPRING 2021 STEAM GENERATOR TUBE INSPECTIONS (EPID: L-2021-NFO-0004) DATED MAY 26, 2021

DISTRIBUTION:
PUBLIC
RidsNrrPMCatawba
MMarkley, NRR
SBloom, NRR
PKlein, NRR
AJohnson, NRR (ABJ1)
GMakar, NRR
LTerry, NRR
BDesai, RII
PM File Copy
RidsACRS_MailCTR Resource
RidsNrrDorlLpl2-1 Resource
RidsNrrLAKGoldstein Resource
RidsNrrPMCatawba Resource
RidsRgn2MailCenter Resource

ADAMS Accession No. ML21133A004 ***Concurrence by Letter**

OFFICE	NRR/DORL/LPLII-1/PM	NRR/DORL/LPLII-1/LA	NRR/DNRL/NCSG
NAME	KCotton	KGoldstein	SBloom*
DATE	05/25 /2021	05/13/2021	4/23/2021

OFFICE	NRR/DORL/LPLII-1/BC	NRR/DORL/LPLII-1/PM
NAME	MMarkley	KCotton
DATE	05/25/2021	05/26/2021

OFFICIAL RECORD COPY