



UNITED STATES
NUCLEAR REGULATORY COMMISSION
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January 31, 2022

Mr. Ken J. Peters
Senior Vice President and
Chief Nuclear Officer
Attention: Regulatory Affairs
Vistra Operations Company LLC
Comanche Peak Nuclear Power Plant
6322 N FM 56
P.O. Box 1002
Glen Rose, TX 76043

SUBJECT: COMANCHE PEAK NUCLEAR POWER PLANT, UNIT NO. 2 – SUMMARY OF
CONFERENCE CALL REGARDING THE FALL 2021 STEAM GENERATOR
TUBE INSPECTIONS (EPID L-2021-NFO-0013)

Dear Mr. Peters:

On November 4, 2021, the U.S. Nuclear Regulatory Commission staff participated in a conference call with representatives of Vistra Operations Company LLC (the licensee) regarding the ongoing steam generator tube inspection activities at Comanche Peak Nuclear Power Plant, Unit No. 2.

A summary of the conference call is provided in the enclosure..

If you have any questions, please contact me at 301-415-6256 or via e-mail at Dennis.Galvin@nrc.gov.

Sincerely,

/RA/

Dennis J. Galvin, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-446

Enclosure:
Conference Call Summary

cc: Listserv

SUMMARY OF NOVEMBER 4, 2021 CONFERENCE CALL

REGARDING FALL 2021 STEAM GENERATOR TUBE INSPECTIONS AT

COMANCHE PEAK NUCLEAR POWER PLANT, UNIT 2

DOCKET NO. 50-446

On November 4, 2021, the U.S. Nuclear Regulatory Commission (NRC) staff participated in a conference call with representatives of Vistra Operations Company, LLC (the licensee), regarding the ongoing steam generator (SG) tube inspection activities at Comanche Peak Nuclear Power Plant, Unit No. 2 (Comanche Peak, Unit 2), during refueling outage 19. The licensee provided input prior to the conference call that is available in the Agencywide Documents Access and Management System at Accession No. ML22020A179. The licensee input includes additional inspection details using the NRC supplied SG tube inspection discussion points template with the licensee providing responses in color.

Comanche Peak, Unit 2, has four Westinghouse Model D5 SGs, each of which contains 4,570 thermally treated Alloy 600 tubes. Each tube has a nominal outside diameter of 0.750 inches and a nominal wall thickness of 0.043 inches. During SG fabrication, the tube ends were hydraulically expanded over the full depth of the tubesheet. The vertical sections of the tubes are supported on the hot-leg (HL) and cold-leg (CL) sides by horizontal stainless steel tube support plates (TSPs) with quatrefoil holes. The CL size also has a stainless steel flow distribution baffle and stainless steel preheater baffle plates, all with drilled holes. Some of the tubes in each SG were hydraulically expanded at selected preheater baffle plates to reduce tube vibration. Two sets of chrome-plated Alloy 600 anti-vibration bars support the U-bend section of the tubes.

Information provided by the licensee during the November 4, 2021, conference call is summarized below:

- At the time of the call, eddy current tube inspection had been completed in SG 1 and SG 4 and was approximately 50 percent complete in SG 2 and SG 3. The remaining eddy current inspection was expected to be complete about 2 days after the call.
- At the time of the call the following cases of degradation had been identified:
 - A new degradation mechanism for Comanche Peak, Unit 2, axial outside diameter stress corrosion cracking (ODSCC) at a free span ding, was detected in one tube, in SG 1, row 1, column 69 (R1C69). The indication was located on the HL, approximately 18 inches above TSP H3 in the tubing free span. The maximum depth and length of the indication were sized at 62 percent through-wall (TW) and 0.19 inches long, respectively. Based on the screening criteria in industry guidelines, in situ pressure testing was not required.

The licensee discussed the results from historical review of the R1C69 tube inspection data with the NRC staff. The earliest change in the indication signal was in 2008, but the signal change did not meet reporting thresholds. In 2011, a rotating pancake coil (RPC) inspection revealed a signal that one of the two initial inspectors called a single axial indication, but the signal was dismissed during the resolution

process. In 2014, a bobbin probe inspection showed a signal that was called as a distorted dent indication (DNI), but no RPC inspection was performed. In 2017, two inspectors called the indication from a bobbin inspection a DNI and called the indication from a RPC inspection a single volumetric indication; however, the called indication was dismissed during the resolution process. The NRC staff stated that the use of a probe with enhanced detection capability at the next inspection, for indications that were previously called crack-like until the resolution process, may result in earlier crack detection in a similar scenario. The licensee indicated it will consider if a change should be made to its inspection program.

- 369 anti-vibration bar wear indications (210 in SG 1, 50 in SG 2, 65 in SG 3, and 44 in SG 4), with a maximum depth of 39 percent TW.
- 21 TSP wear indications (9 in SG 1, 5 in SG 2, 2 in SG 3, and 5 in SG 4), with a maximum depth of 17 percent TW.
- 11 new and legacy foreign object wear indications (1 in SG 2, 1 in SG 3, and 9 in SG 4), with a maximum depth of 34 percent TW.
- Condition monitoring limits were met for all indications at the time of the call.
- Three tubes had been identified for plugging at the time of the call. One was the tube with axial ODSCC at a free span ding. The other two tubes being plugged were the last potential high-stress tubes still in service among the low-radius U-bend tubes (rows 1-9).
- No new tubes with potentially high stress have been identified since the initial screening in 2003. As stated above, the licensee plans to plug two potentially high-stress low-row tubes this outage, which would leave 62 potential high-stress tubes (i.e., -2 sigma) in service, in rows 10 or higher.
- No indications of primary-to-secondary leakage were observed during operation since the previous refueling outage, no exceptions were taken to the industry guidelines, and no in situ pressure tests, tube pulls, or secondary-side pressure tests were planned or performed during the current outage.
- Eddy current inspections were performed of the tubes in all four SGs. The inspection scope included:
 - Full-length bobbin probe examination of all in-service tubes, except for the U-bend section in rows 1 and 2.
 - +Point™ (rotating probe) inspection of the U-bend section of tubes in rows 1 and 2.
 - +Point™ probe inspection of all tubes from 3 inches above, to 15 inches below, the top of the tubesheet (TTS) on the HL. (Inspection is not required lower than 14.01 inches below the TTS.)
 - +Point™ probe inspection of all HL and CL TSP locations and from 3 inches above to 3 inches below the CL TTS in the potential high-stress tubes.

- +Point™ probe inspection of all dents/dings with bobbin probe voltage greater than 5.0 volts on the HL and U-bend region, all dents/dings greater than 2.0 volts at and below TSP C7, and dents greater than 2.0 volts at TSP H3.
- +Point™ probe inspection of legacy loose parts and foreign objects and possible loose part bobbin probe signals.
- Various other special interest examinations.
- To detect loose parts and foreign objects, the licensee performed visual inspection of the TTS, preheater, and water box, and sludge lancing and TTS foreign object search and retrieval in all SGs. Upper bundle visual inspection was performed in SG 3, and preheater baffle plate C2 visual inspection was performed in SG 4. Scale profiling was being performed for all SGs and would be completed after the outage.
- New foreign object wear was detected in two tubes in SG 4, with maximum depths of 34 and 15 percent TW. The wear was attributed to a wire mesh that was removed from between the tubes, two inches above baffle plate C2.
- The licensee informed the NRC staff that four screws had been dropped in the SG bowls during the maintenance activities of the current outage. At the time of the call, one screw had been retrieved and the licensee was making plans for search and retrieval of the others.

The NRC staff did not identify any issues that required followup action at this time. However, the NRC staff requested notification if the licensee found any unexpected or unusual results in the remaining inspections.

SUBJECT: COMANCHE PEAK NUCLEAR POWER PLANT, UNIT NO. 2 – SUMMARY OF CONFERENCE CALL REGARDING THE FALL 2021 STEAM GENERATOR TUBE INSPECTIONS (EPID L-2021-NFO-0013) DATED JANUARY 31, 2022

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*by email

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