

February 6, 2007

Mr. Karl W. Singer
Chief Nuclear Officer and
Executive Vice President
Tennessee Valley Authority
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

SUBJECT: SEQUOYAH NUCLEAR PLANT, UNIT 2 — SUMMARY OF CONFERENCE
CALL REGARDING STEAM GENERATOR TUBE INSPECTIONS
(TAC NO. MD3534)

Dear Mr. Singer:

On December 11, 2006, the U.S. Nuclear Regulatory Commission (NRC) staff participated in a conference call with Tennessee Valley Authority (TVA) representatives regarding the steam generator tube inspection activities during the 2006 refueling outage at Sequoyah Unit 2. Enclosed is a brief summary of the conference call prepared by the NRC staff. The materials provided by TVA in support of the call are attached to this summary.

If you have any questions regarding this material, please contact me at (301) 415-3974.

Sincerely,

/RA/

Brendan T. Moroney, Project Manager
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-328

Enclosure: As stated

cc w/enclosure: See next page

February 6, 2007

Mr. Karl W. Singer
Chief Nuclear Officer and
Executive Vice President
Tennessee Valley Authority
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

SUBJECT: SEQUOYAH NUCLEAR PLANT, UNIT 2 — SUMMARY OF CONFERENCE
CALL REGARDING STEAM GENERATOR TUBE INSPECTIONS
(TAC NO. MD3534)

Dear Mr. Singer:

On December 11, 2006, the U.S. Nuclear Regulatory Commission (NRC) staff participated in a conference call with Tennessee Valley Authority (TVA) representatives regarding the steam generator tube inspection activities during the 2006 refueling outage at Sequoyah Unit 2. Enclosed is a brief summary of the conference call prepared by the NRC staff. The materials provided by TVA in support of the call are attached to this summary.

If you have any questions regarding this material, please contact me at (301) 415-3974.

Sincerely,

/RA/

Brendan T. Moroney, Project Manager
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-328

Enclosure: As stated

cc w/enclosure: See next page

DISTRIBUTION:

PUBLIC LPL2-2 r/f RidsNrrDorLpl2-2 RidsOgcRp
RidsAcrsAcnwMailCenter RidsNrrDciCsgb K. Karwoski, NRR J. Burke, NRR
RidsNrrLACSola RidsNrrPMBMoroney RidsRgn2MailCenter

ADAMS ACCESSION NUMBER: ML070320194 Package: ML070320259 Attach: ML070330020 NRR-106

OFFICE	LPL2-2/PM	LPL2-2/LA	CSGB/BC	LPL2-2/BC(A)
NAME	BMoroney	RSola	EMurphy for AHiser as signed on	MChernoff
DATE	2/6/07	2/5/07	01/29/07	2/6/07

OFFICIAL RECORD COPY

SUMMARY OF DECEMBER 11, 2006 CONFERENCE CALL

STEAM GENERATOR TUBE INSPECTIONS

SEQUOYAH NUCLEAR PLANT, UNIT 2

DOCKET NO. 50-328

On December 11, 2006, the Nuclear Regulatory Commission staff participated in a conference call with representatives of the Tennessee Valley Authority (the licensee) regarding the results of the steam generator (SG) tube inspections performed during the 2006 refueling outage at Sequoyah Unit 2. A summary of the information provided during the call is discussed below.

The four SGs at Sequoyah Unit 2 are Westinghouse model 51. Each SG contains approximately 3400 mill annealed Alloy 600 tubes. Each tube has a nominal outside diameter of 0.875-inch and a nominal wall thickness of 0.050-inch. Each tube is roll-expanded for approximately 2.75 inches from the bottom of the tubesheet, and is secured into the remaining portion of the tubesheet by the Westinghouse Explosive Tube Expansion process. The tubesheet is approximately 21 inches thick and each tube is expanded for essentially the full thickness of the tubesheet. Each SG contains seven carbon steel tube support plates with drilled holes through which the tubes pass.

In addition to a depth-based tube repair criteria, the licensee is authorized to apply the voltage-based tube repair criteria for predominantly axially-oriented outside diameter stress corrosion cracking (ODSCC) within the tube support plates. The licensee is also authorized to leave flaws within the tubesheet region in service, provided they satisfy the W* repair criterion.

Prior to the call, the licensee was provided with discussion points to help facilitate the phone conference. In support of the phone call, the licensee provided the attached document that addressed the discussion points and provided inspection status as of 10:30 a.m. on December 11, 2006. At the time of the call, the eddy current inspections were nearly 100 percent complete. No unusual degradation or unexpected conditions were detected during the inspections.

Additional clarifying information or information not included in the document provided by the licensee is summarized below.

Acronyms used by the licensee in the material they provided include:
RFO (refueling outage), HTS (hotleg tubesheet), TSP (tube support plate), AVB (antivibration bar), MBM (manufacturing burnish mark), DSI (distorted support indication), OXP (overexpansion), BLG (bulge), ET (eddy current testing).

The rotating pancake coil (RPC) probe used for the examination of the hot leg top of tubesheet region included a + Point™ coil.

At the time of the call, 42 tubes had been preliminarily identified to be plugged; however, the tube plugging list was still being finalized.

Enclosure

The licensee was planning to pull a tube this outage as part of implementing the voltage-based repair criteria. The tube selected to be pulled had a 4.74-volt bobbin coil indication.

Possible Loose Parts (PLPs) identified in SG 3 were determined to be deposits bridging between the tubes.

The enhanced technique for loose part wear detection referenced in the material provided by the licensee is the use of a three frequency (turbo) mix.

The Foreign Object Search and Retrieval inspections included the annulus region, tube lane, and the blowdown lane at the top of tubesheet. In addition, one column in each of the four quadrants in the SG was to be visually inspected for hard sludge. Visual inspections were also planned for all locations with PLPs. All of the identified PLPs were at the top of tubesheet. Radiological dose was also considered in determining the need for a visual inspection.

All four SGs were scheduled to be sludge lanced.

The circumferential ODSCC indication identified in SG 1 (in the tube located in row 45, column 39) was associated with a 35-volt dent.

There were no crack-like indications identified on the cold leg side of the SGs, but there were some cold leg thinning indications identified.

An outside diameter volumetric indication was detected in SG 2. The rotating probe eddy current indication hasn't changed in appearance; however, the bobbin coil signal rotated in the upward direction when compared to the 2003 data. Since the indication may be a crack, the tube was scheduled to be plugged.

The number of Primary Water Stress Corrosion Cracking (PWSCC) indications in the tubesheet region was within projections.

Voltages of the dents associated with the axial PWSCC indications identified near TSPs were approximately 3 to 6 volts.

All axial and circumferential PWSCC indications identified in the U-bend region were in tubes in row 4 or less. As a result, the licensee did not expand the scope of the inspections.

One tube (row 12, column 56) in SG 3 had two circumferential indications at the seventh hotleg tube support plate (TSP). The indications were associated with a 4.09-volt dent. The indications were very small (less than 5 percent of the cross sectional area of the tube was affected).

Only a few of the axial ODSCC indications were listed in the material supplied by the licensee.

Two freespan axial ODSCC indications were identified. The indications were characterized as being very small. One of the indications (SG 2, row 8, column 2) was associated with a 6.18 volt dent. The indication was not initially detected by bobbin and part of the indication extended into the TSP region. Given the potential for cracks to grow outside the tube support plate region, the rotating probe data for all of the DSI with bobbin voltages greater than 1 volt were evaluated to confirm the indications stayed within the TSP.

There are little clusters of dented tubes around the periphery of the SGs. These clusters are located approximately every 60-degrees around the SG and are associated with blocks/wedges used to position and support the TSPs.

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

Attachment: TVA Info

Mr. Karl W. Singer
Tennessee Valley Authority

cc:

Mr. Ashok S. Bhatnagar, Senior Vice President
Nuclear Operations
Tennessee Valley Authority
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

Mr. Preston D. Swafford, Senior Vice President
Nuclear Support
Tennessee Valley Authority
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

Mr. Larry S. Bryant, Vice President
Nuclear Engineering & Technical Services
Tennessee Valley Authority
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

General Counsel
Tennessee Valley Authority
6A West Tower
400 West Summit Hill Drive
Knoxville, TN 37902

Mr. John C. Fornicola, Manager
Nuclear Assurance
Tennessee Valley Authority
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

Ms. Beth A. Wetzel, Manager
Corporate Nuclear Licensing and
Industry Affairs
Tennessee Valley Authority
4X Blue Ridge
1101 Market Street
Chattanooga, TN 37402-2801

Mr. Robert H. Bryan, Jr., General Manager
Licensing and Industry Affairs
Tennessee Valley Authority
4X Blue Ridge
1101 Market Street
Chattanooga, TN 37402-2801

SEQUOYAH NUCLEAR PLANT

Mr. Randy Douet, Site Vice President
Sequoyah Nuclear Plant
Tennessee Valley Authority
P.O. Box 2000
Soddy Daisy, TN 37384-2000

Mr. Glenn W. Morris, Manager
Licensing and Industry Affairs
Sequoyah Nuclear Plant
Tennessee Valley Authority
P.O. Box 2000
Soddy Daisy, TN 37384-2000

Mr. David A. Kulisek, Plant Manager
Sequoyah Nuclear Plant
Tennessee Valley Authority
P.O. Box 2000
Soddy Daisy, TN 37384-2000

Senior Resident Inspector
Sequoyah Nuclear Plant
U.S. Nuclear Regulatory Commission
2600 Igou Ferry Road
Soddy Daisy, TN 37379

Mr. Lawrence E. Nanney, Director
Division of Radiological Health
Dept. of Environment & Conservation
Third Floor, L and C Annex
401 Church Street
Nashville, TN 37243-1532

County Mayor
Hamilton County Courthouse
Chattanooga, TN 37402-2801

Ms. Ann P. Harris
341 Swing Loop Road
Rockwood, TN 37854