Nuclear Operating Company

South Texas Project Electric Generating Station P.O. Box 289 Wadsworth, Texas 77483

February 11, 2010
NOC-AE-10002521
File No.: G25
10 CFR 50.55a

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
One White Flint North
11555 Rockville Pike
Rockville, MD 20852

South Texas Project
Unit 2
Docket No. STN 50-499
2RE13 Inspection Summary Report for Steam Generator Tubing -
Response to Request for Additional Information (TAC No. ME1618)

Reference: Correspondence from STP Nuclear Operating Company to NRC Document Control Desk, "2RE13 Inspection Summary Report for Steam Generator Tubing," dated March 24, 2009 (NOC-AE-09002408) (ML090970281)

Pursuant to the NRC request for additional information regarding the referenced correspondence, STP Nuclear Operating Company provides the following information to amend and supplement the steam generator tubing inspection summary report for inspections performed during South Texas Project Unit 2 refueling outage 2RE13.

There are no commitments in this letter.

If there are any questions regarding this report, please contact either Mr. P. L. Walker at (361) 972-8392 or me at (361) 972-7904.

Marco Ruvalcaba
Manager,
Testing and Programs Engineering

Attachment: 2RE13 Inspection Summary Report for Steam Generator Tubing – Response to Request for Additional Information

PLW

STI: 32612487

A 047
NRR

cc:
(paper copy)

Regional Administrator, Region IV
U.S. Nuclear Regulatory Commission
612 East Lamar Blvd., Suite 400
Arlington, TX 76011-8064

Mohan C. Thadani
Senior Project Manager
U.S. Nuclear Regulatory Commission
One White Flint North (MS 8B1A)
11555 Rockville Pike
Rockville, MD 20852

Senior Resident Inspector
U.S. Nuclear Regulatory Commission
P.O. Box 289, Mail Code: MN116
Wadsworth, TX 77483

C. M. Canady
City of Austin
Electric Utility Department
721 Barton Springs Road
Austin, TX 787804

(electronic copy)

A. H. Gutterman, Esq.
Morgan, Lewis & Bockius LLP

Mohan C. Thadani
U. S. Nuclear Regulatory Commission

J. C. Wood, Esq.
Cox, Smith Matthews

C. Mele
City of Austin

E. Alarcon
J. J. Nesrsta
K. Pollo
C. E. Shellman, Esq.
City Public Service Board

K. T. Howell
C. Callaway, Esq.
J. von Suskil
NRG South Texas LP

Richard A. Ratliff
Alice Rogers
Texas Department of State Health Services

SOUTH TEXAS PROJECT
UNIT 2

2RE13 Inspection Summary Report for Steam Generator Tubing -
Response to Request for Additional Information

1. **In the 2RE13 steam generator (SG) tubing inservice inspection report dated March 24, 2009, the licensee stated that, "This inspection was not required by STP Technical Specification (TS) Section 6.8.3.0 for maintaining steam generator tube integrity and therefore is not for surveillance credit".**

   This statement made in the cover letter of the referenced report was in error. This inspection was required by STP Technical Specification 6.8.3.o for maintaining steam generator tube integrity and therefore is for surveillance credit. The corrected statement from the cover letter is consistent with information previously provided in the Introduction section of the subject report.

2. **Please discuss the findings from the following steam generator secondary side inspections performed during the 2008 refueling outage.**

   a. **Sludge collector pumping and video probe inspection (2D only)**

      The SG 2D sludge collector was pumped out as part of the long term secondary side maintenance plan. A total of 3.45 lbs of sludge was removed during the cleaning process. Inspection by video probe found that the thickness of sludge build-up in SG 2D ranged from ¼" to ½".

   b. **Video probe in-bundle inspection at the 9th tube support plate (2A HL only)**

      In order to obtain visual information on the deposit loading in the upper region of the tube bundle, an inbundle inspection of the ninth tube support plate (TSP) was performed. Video probes were deployed from the tubelane using extensions that permitted visual observation of flow slots, tube surfaces, and trefoil ligaments. The inspection showed a thin layer of magnetite covering the TSP top surface. A thin layer of scale covered 80-100% of the tube surface. No deposit bridging across the trefoil to tube OD surface was seen. This examination assists in discerning the beginnings of trefoil bridging that could develop over the long-term, potentially contributing to performance issues. No departures from the expected appearance of the TSP ligaments were observed.

   c. **Steam drum inspection (2C and 2D only)**

      A visual inspection of the steam drum region of SG 2C and 2D was performed. The scope of the inspection included the primary separator / swirl vanes, secondary separators (bottom), spray cans and feedring, lower deck plate, sludge collector assembly, all support structures and associated welds. No anomalies were noted.

d. Upper steam drum inspection and steam nozzle inspection (2D only)

The upper steam drum region of SG 2D was visually inspected. The scope of the inspection included the secondary separators (top), venturi flow restrictors, support structures, and structural welds. No anomalies were noted.

e. Tube scale profiling (2B and 2C only)

Tube scale profiling in Steam Generators 2B and 2C reveals minimal fouling with most of the fouling located on the upper bundle hot leg side. Because most boiling occurs in the upper bundle hot leg, fouling tends to accumulate there. Support plate trefoil fouling was very low, essentially none. Scale profiling in the Unit 2 steam generators was expected to be low considering the age of the steam generators. This was confirmed by the inspection results.

f. In particular, discuss any degradation identified during these inspections.

No degradation was identified while conducting the inspections other than the expected minimal fouling on the upper bundle tubes and support plate trefoils.

3. Four tubes were plugged as a result of loose parts that could not be removed. Please discuss whether these tubes were stabilized.

Based on the position and size of the loose part, the projected amount of wear is not expected to cause tube shear. Therefore, stabilization was not necessary.

4. TS 6.9.1.7.g states that the SG tube inspection report shall include, "the results of condition monitoring, including the results of tube pulls and in-situ testing." Please provide the results of any tube pulls and/or in-situ testing performed during 2RE13.

No indications of tube degradation were reported; therefore, EPRI guidelines did not require tube pulls or in-situ tests.

The Condition Monitoring evaluation with respect to the EOC-13 condition of the South Texas Project Unit 2 steam generator tube bundles establishes that, with respect to tube integrity, there were no challenges to limits of Reg. Guide 1.121, "Bases for Plugging Degraded PWR Steam Generator Tubes."

5.a For each steam generator tube inspection outage since the replacement of the steam generators, please provide the effective full power months of operation that the SGs had accumulated at the time of the outage.

The South Texas Project 2RE10 refueling outage was conducted after 12.9 effective full power months (EFPM) cumulative service with the Delta 94 replacement steam generators (RSGs).

The South Texas Project 2RE13 outage was conducted after 63.42 effective full power months (EFPM) cumulative service with the Delta 94 replacement steam generators.

5.b It was indicated that no confirmed indications of tube degradation as defined by the Electric Power Research Institute (EPRI) steam generator examination guidelines were identified. The EPRI guidelines indicate, in part, that degradation is a flaw whose depth is 20-percent through-wall or greater. Please discuss whether any service-induced flaws, regardless of depth, were identified during your inspections. Include in this response the location, orientation, size, and cause of the indication.

During 2RE13, only the 4% through-wall signal reported at Row 7, Column 57 of the cold leg in SG A at the 8th support structure indicated service-induced degradation. The signal itself correlates with the TSP land contact and is slightly inward from the edge.

5.c For the 4-percent through-wall, volumetric flaw at a support structure, please discuss the cause of this indication (e.g., tube support plate wear).

The 4-percent through-wall, volumetric flaw is considered a single support plate wear indication.