April 7, 2008

Mr. James J. Sheppard
President and Chief Executive Officer
STP Nuclear Operating Company
South Texas Project Electric
Generating Station
P.O. Box 289
Wadsworth, TX 77483

SUBJECT: SOUTH TEXAS PROJECT, UNIT 1 - EVALUATION OF 2006 STEAM GENERATOR TUBE INSPECTIONS (TAC NO. MD5948)

Dear Mr. Sheppard:

By letter dated April 16, 2007, as supplemented by letter dated February 7, 2008, STP Nuclear Operating Company (the licensee), submitted information summarizing the results of its 2006 steam generator tube inspections at South Texas Project Electric Generating Station (STP), Unit 1. The 2006 tube inspections were performed during refueling outage 13.

The U.S. Nuclear Regulatory Commission (NRC) staff has completed its review of your reports and concluded that you have provided the information required by the STP, Unit 1, technical specifications and that no additional review is required at this time. The NRC staff's safety evaluation of the reports is enclosed.

If you have any questions regarding this issue, please contact me at (301) 415-1476.

Sincerely,

/RA/

Mohan C. Thadani, Senior Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-498

Enclosure: Safety Evaluation

cc w/encl: See next page

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO 2006 STEAM GENERATOR TUBE INSPECTIONS

FACILITY OPERATING LICENSE NO. NPF-76

STP NUCLEAR OPERATING COMPANY, ET AL.

SOUTH TEXAS PROJECT, UNIT 1

DOCKET NO. 50-498

By letter dated April 16, 2007 (Agencywide Document Access and Management System (ADAMS) Accession No. ML071140087), as supplemented by letter dated February 7, 2008 (ADAMS Accession No. ML080500210), STP Nuclear Operating Company (the licensee), submitted information summarizing the results of its 2006 steam generator (SG) tube inspections at South Texas Project Electric Generating Station (STP), Unit 1. The 2006 tube inspections were performed during refueling outage 13 (1RE13).

STP Unit 1 has four recirculating SGs designed and fabricated by Westinghouse. The model Delta 94 SGs were put into service in 2000 during 1RE9. Each SG has 7585 thermally-treated Alloy 690 tubes which have an outside diameter of 0.688 inches and a nominal wall thickness of 0.040 inches. The tubes were hydraulically expanded at each end for the full depth of the tubesheet and are supported by a flow distribution baffle, support plates, and anti-vibration bars.

The licensee provided the scope, extent, methods, and results of their SG tube inspections in the documents referenced above. In addition, the licensee described corrective actions (i.e., tube plugging) taken in response to the inspection findings.

As a result of the review of the reports, the U.S. Nuclear Regulatory Commission (NRC) staff has the following comments/observations:

1RE13 was the first primary side eddy-current tube inspections since 1RE10 for SGs A, B, and C. SG D was inspected during 1RE12.

Several hundred small wire fragments were previously identified in the secondary side in SG D. The wire fragments were attributed to a feedwater heater cable stabilizer that migrated into SG D during cycle 11, prior to or during the shutdown for 1RE11. The licensee continued to identify and remove pieces of this wire during the 2006 outage.

Based on eddy-current inspection results, there are approximately 250 to 300 pieces of wire located on the flow distribution baffle (FDB). These pieces are distributed over the entire FDB. Five pieces of wire were left behind a stayrod on the top of the tubesheet. The licensee plans to open the inspection port on the FDB, first tube support plate, and

second tube support plate and inspect every row/column during 1RE14. The remaining SGs are on a 3-cycle inspection interval.

SG 1A has a significantly higher number of dents/dings (with bobbin voltages greater than 5 volts), than the other three SGs. The licensee believes these dents/dings are due to the fabrication process. The licensee does not expect these dents/dings to cause corrosion-related cracking, but will monitor them in future inspections.

Tube scale profiling on SG C indicated light scale in the upper bundle. Profiling in conjunction with upper bundle visual inspection will be used to determine the need for future actions. Profiling is part of the SG long-term inspection plan.

Visual inspection of the upper steam drum, feedring and ninth tube support plate (TSP) for SG 1C, revealed no abnormalities (wear or deformation). The ninth TSP and associated tubes showed early stages of magnetite fouling. The licensee tracks tube fouling to determine if future actions to remove the fouling are necessary.

One tube in SG D (row 117 column 49) was plugged due to a wear indication (attributed to the stabilizer wire) that measured 44 percent through wall. This tube was last inspected in 1RE12 (2005). The 2005 inspection did not show any evidence of a loose part or wear at this location.

One tube in SG B has a restriction. The licensee indicated that a temporary wedge fell onto this tube when the SG was rotated into a vertical position during installation. The wedge was removed. This tube is included in the inspection scope during each inspection outage.

The licensee has operated 52.66 effective full power months (EFPM) in its 144-EFPM sequential period.

The licensee intends to inspect a sample of the bulges and over-expansions in the tubesheet during future inspections.

Based on a review of the information provided, the NRC staff concluded that the licensee provided the information required by the STP Unit 1 technical specifications. In addition, the staff concluded that there are no technical issues that warrant follow-up action at this time, since the inspections appear to be consistent with the objective of detecting potential tube degradation, and the inspection results appear to be consistent with industry operating experience at similarly designed and operated units.

Principal Contributor: J. Burke, NRR

Date: April 7, 2008