



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

November 4, 2003  
NOC-AE-03001586  
10CFR50.54(f)

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

South Texas Project  
Units 1 and 2  
Docket Nos. STN 50-498, STN 50-499  
Response to NRC Bulletin 2003-02 “Leakage From Reactor Pressure Vessel Lower Head Penetrations And Reactor Coolant Pressure Boundary Integrity”

References:

1. Letter dated July 11, 2003 from J. J. Sheppard, STPNOC, to NRC Document Control Desk, “Additional Information Regarding STP’s Commitment to Investigate and Repair Bottom Mounted Instrumentation Penetration Indications” (NOC-AE-03001557)
2. STP Unit 1 Licensee Event Report 03-003 dated June 11, 2003 (NOC-AE-03001548)
3. STP Unit 1 Supplement to Licensee Event Report dated October 15, 2003 (NOC-AE-03001610)
4. Letter dated July 31, 2003 from Dwight D. Chamberlain, NRC, to J. J. Sheppard, STPNOC, “NRC Special Inspection Team Review And NRC Staff Evaluation Of South Texas Project, Unit 1, Reactor Pressure Vessel Investigation And Repair Activities Bottom-Mounted Instrumentation Penetration Leakage”
5. Letter dated September 8, 2003 from Dwight D. Chamberlain, NRC, to J. J. Sheppard, STPNOC, “South Texas Project Electric Generating Station - NRC Special Inspection Team Report 05000498/2003008 and 05000499/2003008 and Exercise Of Enforcement Discretion”

STP Nuclear Operating Company (STPNOC) submits the attached response to NRC Bulletin 2003-02.

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If there are any questions regarding the attached response, please contact Mr. A. W. Harrison at (361) 972-7298 or me at (361) 972-7902.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on November 4, 2003.  
Date



F. J. Jordan  
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awh/

Attachment: Response to NRC Bulletin 2003-02

cc:

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**Response to NRC Bulletin 2003-02****Requested Information:**

- (1) All subject PWR addressees are requested to provide the following information. The responses for facilities that will enter refueling outages before December 31, 2003, should be provided within 30 days of the date of this bulletin. All other responses should be provided within 90 days of the date of this bulletin.**

STPNOC Response:

STP meets the 90 day criterion.

- (a) A description of the RPV lower head penetration inspection program that has been implemented at your plant. The description should include when the inspections were performed, the extent of the inspections with respect to the areas and penetrations inspected, inspection methods used, the process used to resolve the source of findings of any boric acid deposits, the quality of the documentation of the inspections (e.g., written report, video record, photographs), and the basis for concluding that your plant satisfies applicable regulatory requirements related to the integrity of the RPV lower head penetrations.**

STPNOC Response:

Inspection History: Bare metal visual inspections of BMI penetrations are performed as part of the OPGP03-ZE-0033, "RCS Pressure Boundary Inspection for Boric Acid Leaks Program" during each refueling outage and selected forced outages. As of 2RE09, a bare metal inspection is also conducted as part of the OPSP15-RC-0015 Reactor Coolant System Leakage In-Service Leak Test (ISLT) at the end of each outage. Prior ISLTs for this area were performed without removing insulation.

Inspection Process: Insulation inspection panels are removed to provide visual access to the bottom of the vessel. The panels overlap so that every other panel of the 12 removable panels is relatively easy to remove. Examination from two panels 180° apart provides visual access to all 58 penetrations, and inspections performed between 1992 and 2002 removed two panels approximately 180 degrees apart for the inspection. However, examination from three panels 120° apart provides better coverage of each penetration and the inspection procedure has been revised to require examination from three panels. Inspection results are documented in written reports with photographs.

Inspection Results: No indications of leakage have been identified on Unit 2. On April 12, 2003, three access panels were opened to inspect the Unit 1 BMI penetrations. Indications of leakage were found on Penetrations 1 and 46. The process of resolution of the leakage was described in detail in other submittals (Ref. 1, 2, & 3) and was the subject of a NRC Special Inspection (Ref. 4 & 5). No indications of leakage were identified prior to the observation of leakage indications in Unit 1 on April 12, 2003.

Basis for Concluding the Plant Satisfies Regulatory Requirements Related to the Integrity of the RPV Lower Head Penetrations: After a thorough ultrasonic examination of all the Unit 1 BMI penetrations, STPNOC concluded that only the two leaking penetrations were affected. The leaking Unit 1 penetrations were repaired in accordance with the applicable regulatory requirements of 10CFR50.55a. Bare metal visual inspections of the STP Unit 2 BMI penetrations were conducted on three occasions during the Unit 2 Fall 2002 refueling outage (2RE09) and its subsequent turbine repair forced outage. There was no evidence of leakage. Due to the slow growth and low safety significance of the cracks in the affected Unit 1 penetrations, the fact that the other 56 penetrations on Unit 1 showed no indications, and the absence of leakage in Unit 2, STPNOC concluded that no immediate action is required for Unit 2. The STPNOC inspection program and repair is described in a letter dated July 11, 2003 and in the Licensee Event Report (LER) and the LER supplement for this event (Ref. 1, 2, & 3).

The NRC assigned a Special Inspection Team to monitor the STPNOC examination and repair activities. The NRC determined the STPNOC actions were acceptable as documented in letters dated July 31, 2003 and September 8, 2003 (Ref. 4 & 5).

- (b) A description of the RPV lower head penetration inspection program that will be implemented at your plant during the next and subsequent refueling outages. The description should include the extent of the inspections which will be conducted with respect to the areas and penetrations to be inspected, inspection methods to be used, qualification standards for the inspection methods, the process used to resolve the source of findings of boric acid deposits or corrosion, the inspection documentation to be generated, and the basis for concluding that your plant will satisfy applicable regulatory requirements related to the structural and leakage integrity of the RPV lower head penetrations.**

STPNOC Response:

The STPNOC inspection program is described in Reference 1 and was found to be satisfactory to the NRC as documented in the letters referenced in the response to (1)(a), above.

- (c) If you are unable to perform a bare-metal visual inspection of each penetration during the next refueling outage because of the inability to perform the necessary planning, engineering, procurement of materials, and implementation, are you planning to perform bare-metal visual inspections during subsequent refueling outages? If so, provide a description of the actions that are planned to enable a bare-metal visual inspection of each penetration during subsequent refueling outages. Also, provide a description of any penetration inspections you plan to perform during the next refueling outage. The description should address the applicable items in paragraph (b).**

STPNOC Response:

The STPNOC inspection program includes the bare metal visual inspection of each penetration as described in the response to Items (1)(a) and (1)(b) above.

- (d) If you do not plan to perform either a bare-metal visual inspection or non-visual (e.g., volumetric or surface) examination of the RPV lower head penetrations at the next or subsequent refueling outages, provide the basis for concluding that the inspections performed will assure applicable regulatory requirements are and will continue to be met.**

STPNOC Response:

Not applicable. See the responses to Items (1)(b) and (1)(c).

- (2) Within 60 days of plant restart following the next inspection of the RPV lower head penetrations, the subject PWR addressees should submit to the NRC a summary of the inspections performed, the extent of the inspections, the methods used, a description of the as-found condition of the lower head, any findings of relevant indications of through-wall leakage, and a summary of the disposition of any findings of boric acid deposits and any corrective actions taken as a result of indications found.**

STPNOC Response:

STPNOC will provide the information requested.