



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION IV  
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July 18, 2000

William T. Cottle, President and  
Chief Executive Officer  
STP Nuclear Operating Company  
P.O. Box 289  
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SUBJECT: SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION'S NRC  
INTEGRATED INSPECTION REPORT NO. 50-498/00-09; 50-499/00-09

Dear Mr. Cottle:

On June 24, 2000, the NRC completed an inspection at the South Texas Project Electric Generating Station, Units 1 and 2, facility. The enclosed report presents the results of that inspection. The results of this inspection were discussed with Mr. J. Sheppard and other members of your staff on June 27, 2000.

This inspection was an examination of activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection consisted of a selected examination of procedures and representative records, observations of activities, and interviews with personnel.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/NRC/ADAMS/index.html> (the Public Electronic Reading Room).

Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,

*/RA/*

Joseph I. Tapia, Chief  
Project Branch A  
Division of Reactor Projects

Docket Nos.: 50-498  
50-499  
License Nos.: NPF-76  
NPF-80

Enclosure:  
NRC Inspection Report No.  
50-498/00-09; 50-499/00-09

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**ENCLOSURE**

U.S. NUCLEAR REGULATORY COMMISSION  
REGION IV

Docket Nos.: 50-498  
50-499

License Nos.: NPF-76  
NPF-80

Report No.: 50-498/00-09  
50-499/00-09

Licensee: STP Nuclear Operating Company

Facility: South Texas Project Electric Generating Station, Units 1 and 2

Location: FM 521 - 8 miles west of Wadsworth  
Wadsworth, Texas 77483

Dates: May 7 through June 24, 2000

Inspectors: N. O'Keefe, Senior Resident Inspector  
G. Guerra, Resident Inspector  
A. Gody, Senior Resident Inspector, Comanche Peak  
D. Allen, Project Engineer

Approved By: J. I. Tapia, Chief, Project Branch A

ATTACHMENTS:

Attachment 1: Supplemental Information

Attachment 2: NRC's Revised Reactor Oversight Program

## SUMMARY OF FINDINGS

South Texas Project Nuclear Station, Units 1 & 2  
NRC Inspection Report Nos. 50-498/00-09, 50-499/00-09

The report covers a 7-week period of resident inspection, supported by a region-based project engineer. The body of the report is organized under the broad categories of Reactor Safety, Emergency Preparedness, Radiation Safety, Occupational Radiation Safety, and Safeguards as listed in the summaries below. The significance of issues is indicated by their color (green, white, yellow, or red) and was determined by the significance determination process in draft Inspection Manual Chapter 0609.

### Cross-cutting Issues: Problem Identification and Resolution

- **NO COLOR.** Inspectors identified that the licensee did not have specific programmatic controls to ensure that corrective actions for degraded or non-conforming conditions were completed within an appropriate time frame. In one example, the licensee delayed correcting a material-related non-conforming condition in a cooling water line to Standby Diesel Generator 21 five times, including the next refueling outage, without formally evaluating the acceptability of the schedule delays.

In this case, the licensee was able to adequately justify delaying the work and no specific safety concerns were identified. Because of the programmatic implications, this was determined to be a finding of no color as a cross-cutting issue dealing with problem identification and resolution (Section 4OA4).

## Report Details

Summary of Plant Status: Unit 1 started up from a refueling outage on May 15, 2000 and reached full power on May 20. It then operated at full power throughout the remainder of the inspection period, except for a brief planned power reduction to 87 percent on June 16-17 for testing of steam plant equipment.

Unit 2 began the inspection at full power. Power was reduced to 7 percent and the generator taken off line for planned repairs during the period of June 2-9. The unit was returned to full power on June 10. On June 11-12, operators reduced power to 89 percent in response to a failure in the feedwater heater system. Power was returned to 100 percent later the same day, and remained there for the rest of the inspection period.

### **1. REACTOR SAFETY**

#### **Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity**

##### 1R01 Adverse Weather

###### a. Inspection Scope

The inspectors reviewed the licensee's program and the preparations made for the start of the hurricane and tornado season. Procedures OPOP04-ZO-0002, "Natural or Destructive Phenomena Guidelines," Revision 14, OPGP03-ZV-0001, "Severe Weather Plan," Revision 5, and "Wind Vulnerability Study of South Texas Project Non-Class 1 Structures," dated November 1999, and applicable sections of the Updated Final Safety Analysis Report were reviewed. Licensed operator classroom training on hurricane preparations and a simulator training session involving response to a simulated hurricane approaching the site were evaluated. The inspectors walked down external portions of the protected area, the essential cooling water building, and the diesel generator buildings in each unit.

###### b. Issues and Findings

No findings were identified.

##### 1R04 Equipment Alignments

###### Partial System Walkdown

###### a. Inspection Scope

The inspectors performed a partial system walkdown of the Unit 1 auxiliary feedwater system. Train A was inspected while Train D was unavailable for planned maintenance, and Train D was inspected after being returned to service. The inspectors used operating procedure OPOP02-AF-0001, "Auxiliary Feedwater," Revision 13, and Drawing 5S149F00024 as guidance to ensure system operability. The inspectors verified valve positions, power availability, and ensured that the components were in good material condition.

###### b. Issues and Findings

No findings were identified.

#### 1R05 Fire Protection

##### .1 Routine Fire Area Walkdowns

###### a. Inspection Scope

The inspectors observed the control of transient combustibles and ignition sources, the material condition and operational lineup of reactor plant active and passive fire protection systems, and the material condition and operational status of fire barriers used to prevent fire damage or fire propagation. The following plant areas were inspected:

- Unit 1 Train B switchgear areas, electrical auxiliary building
- Unit 2 fuel handling building
- Unit 2 main control room envelope

###### c. Issues and Findings

No findings were identified.

#### 1R11 Licensed Operator Requalification

###### a. Inspection Scope

The inspectors observed one classroom training session and two simulator scenarios as part of the Cycle 2 licensed operator requalification training program. The training program was discussed with the Unit 2 Operations Manager and a coordinator for operator training.

###### b. Issues and Findings

No findings were identified.

#### 1R12 Maintenance Rule Implementation

##### .1 Maintenance Rule Functional Failure Review

###### a. Inspection Scope

The inspectors reviewed the licensee's maintenance rule implementation for several equipment performance problems, including:

- Two plant transients caused by the Unit 1 steam dump system.

- Failure of a Unit 1 steam generator power-operated relief valve manual isolation valve to shut.
- Failure of the Unit 1 Train B hot leg recirculation injection valve power lockout fuses.

b. Issues and Findings

No findings were identified.

1R13 Maintenance Risk Assessment and Emergent Work Evaluation

.1 Unscheduled Work Activities

a. Inspection Scope

The inspectors reviewed selected activities regarding risk evaluations and overall plant configuration control. The inspectors discussed emergent work issues with work control personnel and reviewed the potential risk impact of these activities to verify that the work was adequately planned, controlled, and executed. The activities reviewed were associated with:

- Disparities between the Unit 1 wide-range and narrow-range steam generator water level indications during a channel check.
- Unplanned corrective maintenance to the Unit 1 Control Room Envelope Cleanup Filter Train C during a Train A work week.
- Failure of the Unit 1 fuel handling building Train A HEPA filters during testing.

b. Issues and Findings

No findings were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following operability evaluations and supporting documents associated with the following problems in accordance with Inspection Procedure 71111, Attachment 15:

- A Unit 2 fuel handling building ventilation modification caused open bolt holes in a fan duct which had the potential to become an unfiltered release path
- Watertight doors to two auxiliary feedwater pump rooms were found open
- A core subcooling margin monitor had intermittently failing input

- The Essential Cooling Water (ECW) supply to five Standby Diesel Generators (SDGs) contained non-conforming material

b. Issues and Findings

One finding associated with this inspection is documented in Section 4OA4 as a cross-cutting issue in the area of problem identification and resolution.

1R17 Permanent Plant Modifications

.1 Boraflex Removal Project

a. Inspection Scope

The inspectors reviewed documentation and observed the licensee's implementation of a modification to remove boraflex panels from the Region 1 racks of both spent fuel pools, including the removal of all lead-in guides and replacement with a new design. The licensee had previously obtained a Technical Specification change to allow credit for the use of soluble boron. The project required the coordination of several plant organizations. Due to the complex nature of the modification, this was inspected under both Inspection Procedure 71111, Attachment 17 "Permanent Modifications," and Attachment 14, "Personnel Performance During Non-routine Plant Evolutions." The project also required the use of divers. The inspectors reviewed the following documents:

- WAN 156130, Implement Removal of Existing Lead-in Guides and Boraflex Inserts From Unit 2 Region 1 Spent Fuel Racks and Installation of New Design Lead-in Guides
- Boraflex Removal Project Briefing Package
- Design Change Package DCP 96-15534-4 and 10CFR50.59 Evaluation

b. Issues and Findings

No findings were identified.

1R19 Postmaintenance Testing

a. Inspection Scope

The inspectors observed or evaluated the following postmaintenance tests to determine if the tests adequately demonstrated that the equipment was capable of performing its safety function in accordance with Inspection Procedure 71111, Attachment 19:

- 0PSP11-ZH-0008, "Control Room Envelope and HVAC In-place HEPA Filter Leak Test," Revision 9, following Unit 1 Train A fuel handling building emergency filter HEPA replacement

- Procedure 0PSP03-MS-0002, "Main Steam System Cold Shutdown Valve Operability Test," Revisions 5, 6, and 7, following MSIV 1D leak repair
- Various SDG-22 extended allowed outage work packages

b. Issues and Findings

No findings were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors observed or reviewed the following tests:

- 0POP02-DG-0001, "Emergency Diesel Generator," Revision 23 (Unit 2)
- 0PSP02-NI-0046, "Extended Range Neutron Flux Channel IV ACOT," Revision 2 (Unit 1)
- 0PSP06-RC-0003, "Undervoltage RCP relay channel Calibration/TADOT," Revision 7 (Unit 1)

b. Issues and Findings

No findings were identified.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors reviewed the following plant temporary modifications in accordance with Inspection Procedure 71111, Attachment 23, with respect to design bases documentation, approvals, and tracking. The inspectors also walked down the modifications to assure that the tags were still in place:

- Temporary Modification TL1-00-8339-3, "Furmanite Repair of Unit 1 Main Steam Isolation Valve D"
- Temporary Modification T1-00-7279-2, "Disable Core Exit Thermocouple TE-50" Revisions 0, 1, 2, and 3

During the inspection the inspectors reviewed the following documents:

- a. Procedure 0PGP03-ZO-0003, "Temporary Modifications," Revision 18
- b. Procedure 0PGP03-ZE-0027, "ASME Section XI Repair, Replacement, and Post-Maintenance Pressure Testing," Revision 16

- c. Procedure 0PSP03-MS-0002, "Main Steam System Cold Shutdown Valve Operability Test," Revisions 5, 6, and 7
- d. Unreviewed Safety Question Evaluation T2-II-95-0014, Revision 1

b. Issues and Findings

No findings were identified.

**4. OTHER ACTIVITIES (OA)**

4OA2 Performance Indicator Verification

a. Inspection Scope (71151)

The inspectors reviewed the following performance indicators for the period from the first quarter of 1999 through the first quarter of 2000, to assess the accuracy and completeness of the indicator. The inspectors used Nuclear Energy Institute guidance NEI 99-02, "Performance Indicator Verification," Revision 0, as guidance for this inspection.

- Unplanned Scrams per 7000 Critical Hours
- Scrams with a Loss of Normal Heat Removal
- Transients per 7000 Critical Hours

b. Issues and Findings

No findings were identified.

4OA4 Cross-cutting Issues

.1 Rescheduling of Corrective Actions Not Justified per Generic Letter 91-18

a. Inspection Scope

The inspectors reviewed the circumstances surrounding the identification, evaluation, and corrective actions for a nonconforming material used in a safety system. The licensee's operability evaluation was reviewed and discussed with engineering, scheduling and licensing personnel. The following documents were reviewed:

- Work package WAN 157139, replace polypropylene spacers in the ECW supply to SDG 22 turbocharger intercooler
- Design Change Package 99-2106-14
- Condition Report 99-2106

b. Issues and Findings

The inspectors determined that the licensee did not have specific programmatic controls to ensure that corrective actions for degraded or nonconforming conditions were completed within an appropriate time frame. In one example, the licensee delayed correcting a material related nonconforming condition in a cooling water line to Standby Diesel Generator 21 five times, including the next refueling outage, without formally evaluating the acceptability of the schedule delays.

On February 11, 1999, engineering personnel identified that the polypropylene material used in spacers in the ECW supply lines to five SDG turbochargers constituted a nonconforming condition per Generic Letter 91-18 "Resolution of Degraded and Nonconforming Conditions." The licensee performed an operability evaluation, documented in Condition Report Engineering Evaluation 99-2106-1, which concluded that the system was operable because the polypropylene material was adequate to ensure that the safety function would be met. The evaluation went on to state that the material "...should be replaced at the next available Extended Allowed Outage, Train Outage, or Refueling Outage of sufficient duration to properly schedule and implement polypropylene spacer replacement." This statement was intended to set a time frame appropriate to the safety significance of the condition in accordance with Generic Letter 91-18, but was not sufficiently specific.

The inspectors reviewed Condition Report 99-2106 and determined that the corrective actions had been rescheduled for convenience purposes without formally evaluating the acceptability of the delay on the operability of the systems. Corrective actions for SDG 21 had been rescheduled five times, and were scheduled to be corrected in December 2000.

Generic Letter 91-18 states that the NRC expects time frames for correcting degraded or nonconforming conditions longer than the first refueling outage to be explicitly justified by the licensee, or the staff would conclude the corrective actions were not timely and would consider taking enforcement action. Enforcement was considered for this case, however, no enforcement action was necessary since the licensee could adequately justify delaying the work and no safety concerns were identified. Nevertheless, this issue was determined to be a finding of no color as a cross-cutting issue in the area of problem identification and resolution, because of the programmatic implications.

In response to this issue, the licensee wrote Condition Report 00-10974 to evaluate the processes used to schedule corrective and preventive maintenance items, to review the current work backlog to identify any similar examples, as well as to document the technical justification for allowing replacement of the polypropylene spacers as currently scheduled.

4OA5 Management Meetings

.1 Exit Meeting Summary

The inspectors presented the inspection results to Mr. J. Sheppard and other members of licensee management at exit meetings on June 27, 2000. The licensee acknowledged the findings presented.

The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

## PARTIAL LIST OF PERSONS CONTACTED

### Licensee

M. Berrens, Manager, Scheduling  
K. Coates, Manager, Maintenance  
R. Gangluff, Manager, Chemistry  
E. Halpin, Manager, Operations  
A. Kent, Manager, Electrical/Instrumentation and Controls, Systems Engineering  
F. Mangan, Vice President, Business Services  
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P. Serra, Manager, Plant Protection  
J. Sheppard, Vice President, Engineering and Technical Services  
S. Thomas, Manager, Design Engineering

### NRC

W. Jones, Region IV Senior Reactor Analyst  
M. Vasquez, Region IV Enforcement Specialist

## ITEMS OPENED, CLOSED, AND DISCUSSED

### Opened

None.

### Closed

None.

### Discussed

None.

## LIST OF ACRONYMS AND INITIALISMS USED

ECW Essential Cooling Water  
HEPA High Efficiency Particulate Activity  
HVAC Heating, Ventilation, and Air Conditioning  
SDG Standby Diesel Generator  
SDP Significance Determination Process

## NRC'S REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

<b>Reactor Safety</b>	<b>Radiation Safety</b>	<b>Safeguards</b>
<ul style="list-style-type: none"><li>•Initiating Events</li><li>•Mitigating Systems</li><li>•Barrier Integrity</li><li>•Emergency Preparedness</li></ul>	<ul style="list-style-type: none"><li>•Occupational</li><li>•Public</li></ul>	<ul style="list-style-type: none"><li>•Physical Protection</li></ul>

To monitor these seven cornerstones of safety, the NRC used two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection findings will be evaluated according to their potential significance for safety, using the Significance Determination Process, and assigned colors of GREEN, WHITE, YELLOW or RED. GREEN findings are indicative of issues that, while they may not be desirable, represent very low safety significance. WHITE findings indicate issues that are of low to moderate safety significance. YELLOW findings are issues that are of substantial safety significance. RED findings represent issues that are of high safety significance with a significant reduction in safety margin.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing varying levels of performance and incremental degradation in safety: GREEN, WHITE, YELLOW, or RED. GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections. WHITE corresponds to performance that may result in increased NRC oversight. YELLOW represents performance that minimally reduces safety margin and requires even more NRC oversight. And RED indicates performance that represents a significant reduction in safety margin but still provides adequate protection to public health and safety.

The assessment process integrates performance indicators and inspection so the agency can reach objective conclusions regarding overall plant performance. The agency will use an Action Matrix to determine in a systematic, predictable manner which regulatory actions should be taken based on a licensee's performance. The NRC's actions in response to the significance (as represented by the color) of issues will be the same for performance indicators as for inspection findings. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, which can include shutting down a plant, as described in the Action Matrix.

More information can be found at: <http://www.nrc.gov/NRR/OVERSIGHT/index.html>.