UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-4005

October 14, 2003

James J. Sheppard, President and
Chief Executive Officer
STP Nuclear Operating Company
P.O. Box 289
Wadsworth, Texas 77483

SUBJECT: SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION - NRC INTEGRATED INSPECTION REPORT 05000498/2003003 AND 05000499/2003003

Dear Mr. Sheppard:

On September 20, 2003, the US Nuclear Regulatory Commission (NRC) completed an inspection at your South Texas Project Electric Generating Station, Units 1 and 2, facility. The enclosed integrated report documents the inspection findings, which were discussed on September 25, 2003, with you and other members of your staff.

The inspection examined activities conducted under your licenses as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your licenses. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

This report documents one finding of very low safety significance (Green), evaluated under the risk significance determination process (SDP), which was determined to involve violations of NRC requirements. However, because of the very low safety significance and because it was entered into your corrective action program, the NRC is treating this finding as a noncited violation (NCV) consistent with Section VI.A of the NRC Enforcement Policy. Additionally, a licensee-identified violation which was determined to be of very low safety significance is listed in Section 4OA7 of this report. If you contest any NCVs in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, U.S. Nuclear Regulatory Commission Region IV, 611 Ryan Plaza Drive, Suite 400, Arlington, Texas 76011-4005; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington DC 20555-0001; and the NRC Resident Inspector at South Texas Project Electric Generating Station, Units 1 and 2, facility.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be made 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/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

***/RA/***

William D. Johnson, Chief
Project Branch A
Division of Reactor Projects

Dockets: 50-498
50-499
Licenses: NPF-76
NPF-80

Enclosure:
NRC Inspection Report 05000498/2003003 and 05000499/2003003
w/Attachment: Supplemental Information

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**ENCLOSURE**

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

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|---|---|
| Dockets: | 50-498, 50-499 |
| Licenses: | NPF-76<br>NPF-80 |
| Report No: | 05000498/2003003 and 05000499/2003003 |
| Licensee: | STP Nuclear Operating Company |
| Facility: | South Texas Project Electric Generating Station, Units 1 and 2 |
| Location: | FM 521 - 8 miles west of Wadsworth<br>Wadsworth, Texas 77483 |
| Dates: | June 22 through September 20, 2003 |
| Inspectors: | J. Cruz, Senior Resident Inspector<br>G. L. Guerra, Resident Inspector<br>T. R. Farnholtz, Senior Project Engineer, Project Branch A<br>J. M. Keeton, Project Engineer, Project Branch A<br>L. T. Ricketson, P.E., Senior Health Physicist |
| Approved By: | W. D. Johnson, Chief<br>Project Branch A<br>Division of Reactor Projects |

## SUMMARY OF FINDINGS

IR 05000498/2003003, 05000499/2003003; 06/22/03 - 09/20/03; South Texas Project Electric Generating Station; Units 1 & 2; Integrated Resident Report; Maintenance effectiveness, motor operated valve unresolved item closure.

This report covered a 3-month period of inspection by the resident inspectors and Region IV inspectors. No findings of significance were identified. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

- Green A noncited violation of 10 CFR 50, Appendix B, Criterion V, was identified related to ineffective maintenance practices for motor operated valve actuators. Ineffective maintenance practices resulted in the failure of a residual heat removal valve actuator and for numerous similar problems in other valve actuators. Specifically, the licensee failed to implement procedural requirements to develop, perform, track, and close out corrective actions for vendor technical bulletins and advisories. Guidance from a 1989 vendor advisory alerting the licensee to failures of motor operated valve actuators and recommending corrective measures was incorporated into station maintenance procedures without taking action to assure that actuators in the plant were actually corrected.

  This finding affected the Mitigation System Cornerstone objective of equipment reliability and is greater than minor because if the condition were left uncorrected it could become a more significant safety concern. Specifically, numerous other valve actuators had similar deficiencies which could, in time, progress to the point of failure. The finding represented an actual loss of the safety function of one residual heat removal train for greater than its Technical Specification allowed outage time. Several other valve actuators with similar deficiencies were affected to a lesser degree. A Significance Determination Process, Phase 3 analysis was performed by a Senior Reactor Analyst in Region IV. The issue was determined to be of very low safety significance because the specific valve which failed provided a very low contribution to plant safety, and the estimated increase in failure probability for motor operated valves due to this issue also contributed a very small increase to plant risk (Section 4OA5).

B. Licensee-Identified Violations

Violations of very low safety significance, which were identified by the licensee have been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. These violations and corrective action tracking numbers are listed in Section 4OA7.

## REPORT DETAILS

Summary of Plant Status

Unit 1 began the inspection period shut down for repairs to two bottom-mounted instrumentation penetrations on the reactor pressure vessel. The unit was returned to service on August 9 and achieved full power on August 11. On August 12 the unit was removed from service to allow main turbine intercept valve repairs. The unit was returned to service on August 12 and achieved full power on August 14. The unit operated at essentially 100 percent power for the remainder of the inspection period.

Unit 2 operated at essentially 100 percent power throughout the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

a. Inspection Scope

During the week of July 14, 2003, the inspectors responded to the site and reviewed the licensee's adverse weather preparations for Hurricane Claudette. The inspection included a review of the following licensee procedures:

- 0PGP03-ZV-0001, "Severe Weather Plan," Revision 7
- 0POP04-ZO-0002, "Natural or Destructive Phenomena Guidelines," Revision 18

The inspectors were present in the Technical Support Center with the licensee's emergency response team during passage of the hurricane. An independent walkdown of the site facilities and protected area was conducted by the inspectors to verify the licensee's damage assessments following the hurricane. The inspectors specifically focused on the effects on risk-significant systems that could have had a negative impact on continued safe operation of the Unit 2 reactor.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

a. Inspection Scope

The inspectors conducted partial walkdowns of the following two risk-significant systems to verify that they were in their proper standby alignment as defined by system operating procedures and system drawings. During the walkdowns, inspectors examined system components for materiel conditions that could degrade system performance. In

addition, the inspectors evaluated the effectiveness of the licensee's problem identification and resolution program in resolving issues which could increase event initiation frequency or impact mitigating system availability.

- On July 8 the inspectors verified offsite power availability to Units 1 and 2 from the 345kV South bus while the North bus was de-energized for planned maintenance. The inspectors verified electric power availability to emergency safety features systems in accordance with Plant Operating Procedure 0POP02-AE-0001, "AC Electrical Distribution Breaker Lineup," Revision 12.

- On August 18 the inspectors verified the condition of the Unit 1 Train B emergency diesel generator. This walkdown was performed while the Train C emergency diesel generator was out of service for planned maintenance. The inspectors compared system equipment and control board lineups to Plant Operating Procedure 0POP02-DG-0001, "Emergency Diesel Generator 12," Revision 34.

b. Findings

No findings of significance were identified

1R05 Fire Protection (71111.05)

a. Inspection Scope

The inspectors toured six plant areas to assess the licensee's control of transient combustible materials, the material condition and lineup of fire detection and suppression systems, and the material condition of manual fire equipment and passive fire barriers. The licensee's fire preplans and fire hazards analysis report were used to identify important plant equipment, fire loading, detection and suppression equipment locations, and planned actions to respond to a fire in each of the plant areas selected. Compensatory measures for degraded equipment were evaluated for effectiveness. The following plant areas were inspected:

- Unit 1 Fuel handling building on July 16 (Fire Area 035)

- Unit 2 Essential cooling water pump rooms on July 16 (Fire Zones 603, 604, 605)

- Unit 1 Control rod drive and motor generator set rooms on July 25 (Fire Zone 054, 056)

- Unit 1 Central alarm station room on August 7 (Fire Zone 050)

- Unit 1 Auxiliary shutdown panel room on August 7 (Fire Zone 071)

- Unit 2 Emergency diesel generator 23 engine room on August 27 (Fire Zone 500)

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification (71111.11)

a. Inspection Scope

On July 22, 2003, the inspectors assessed Crew 2D during licensed operator simulator requalification training. The inspectors observed two control room simulator scenarios that included a loss of heat sink with anticipated transient without scram and the response to a faulted steam generator. The inspectors observed the performance of Crew 2D for clarity and formality of communications, the correct use of procedures, performance of high risk operator actions, monitoring of critical safety functions, and the oversight and direction provided by the shift supervisor. The inspectors observed the operators' use of emergency action levels and protective action recommendations for accuracy and timeliness, reviewed the scenario sequence and objectives, observed the training critique, and discussed the crew's performance with training instructors. In addition, the inspectors attended the critique held by the operating crew to assess individual performance and training effectiveness.

b. Findings

No findings of significance were identified.

1R12 Maintenance Implementation (71111.12)

a. Inspection Scope

The inspectors independently verified that licensee personnel properly implemented 10 CFR 50.65, “Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants,” for the following equipment performance problems:

- Unit 2 Failure of essential cooling water Pump 2B discharge valve to open when required on July 5 (Condition Report 03-10468)

The inspectors reviewed whether the structures, systems, or components were properly characterized in the scope of the Maintenance Rule Program and whether the failure or performance problem was properly characterized. In addition, the inspectors assessed the appropriateness of the established performance criteria. The inspectors also independently verified that the corrective actions and responses implemented were appropriate and adequate.

b. Findings

No findings of significance were identified. Further discussion on this failure can be found in section 4OA2.

1R13 Maintenance Risk Assessments and Emergent Work Evaluation (71111.13)

a. Inspection Scope

The inspectors assessed whether the performance of risk assessments for selected planned and emergent maintenance activities was in accordance with 10 CFR 50.65(a)(4). The inspectors assessed the completeness and accuracy of the information considered in the risk assessments and compared the actions taken to manage the resultant risk with the requirements of the licensee's Configuration Risk Management Program. The inspectors reviewed these assessed risk configurations against actual plant conditions and any in-progress evolutions or external events to verify that the assessments were accurate, complete, and appropriate for the conditions. In addition, the inspectors walked down the control room and plant areas to verify that compensatory measures identified by the risk assessments were appropriately performed. The inspectors reviewed the following four activities:

- (Common) North bus electrical outage to repair the Y-591 disconnect switch on July 8
- Unit 1 High pressure turbine lube oil interface valve diaphragm repair work on August 12
- (Common) South bus electrical outage to repair a shunt reactor on August 20
- Unit 1 Auxiliary feedwater Pump 11 determined to be inoperable during a diesel Generator 13 outage for planned maintenance on August 18-20

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Nonroutine Plant Evolutions (71111.14, 71153)

a. Inspection Scope

The inspectors observed two nonroutine evolutions described below to verify that they were conducted in accordance with licensee procedures and Technical Specification requirements. The inspectors reviewed the licensee's planning documents, attended pre-job briefs, and observed personnel performance in the control room and in the field.

- Unit 1 Main steam isolation Valve 1A modification, repair, and surveillance testing conducted in accordance with Technical Specification 3.0.6 on August 4-6

- Unit 1 Reactor shutdown to repair the high pressure turbine lube oil interface valve diaphragm on August 12

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors selected three operability evaluations conducted by licensee personnel during the report period involving risk-significant systems or components. The inspectors evaluated the technical adequacy of the licensee's operability determination, determined whether appropriate compensatory measures were implemented, and determined whether or not other pre-existing conditions were considered, as applicable. Additionally, the inspectors evaluated the adequacy of the licensee's problem identification and resolution program as it applied to operability evaluations. Specific operability evaluations reviewed are listed below:

- Unit 2 Essential cooling water Pump 2B breaker cell switch failure on July 5 (CR 03-10468)

- Unit 1 Nuclear instrumentation detector cable degradation on August 4 (CR 03-11910)

- Unit 1 Main steam isolation Valve 1A with its associated pilot valve open on August 5 (CR 03-12084)

b. Findings

No findings of significance were identified.

1R16 Operator Workarounds (71111.16)

a. Inspection Scope

The inspectors reviewed licensee-identified operator workarounds and other existing equipment conditions with the potential to be workarounds to verify that they had been identified and assessed in accordance with STP's Total Impact Assessment document and to determine if the functional capability of the system or human reliability in responding to initiating events had been affected. The ability of operators to implement

normal and emergency operating procedures with the existing equipment issues was specifically evaluated. The following three items were reviewed:

- Unit 2 Cumulative - Operation's total impact items list the week of July 7
- Unit 1 Emergent - Closure of the pressurizer block valves to prevent relief valve leakby on August 11
- Unit 1 Emergent - Residual heat removal line depressurization associated with accumulator leakage on September 18

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications (71111.17A)

a. Inspection Scope

The inspectors reviewed one permanent plant modification package involving the operation of the feedwater isolation valves. The inspectors reviewed the licensee's modification package, 10 CFR 50.59 evaluation, and the installation work order associated with the feedwater isolation valve modification. Additionally, the inspectors interviewed the cognizant engineers as to their understanding of the modification package. The inspectors also evaluated the effectiveness of the licensee's corrective action process to identify and correct problems associated with the installation and performance of the permanent plant modification. The following specific documents were reviewed:

- Work Authorization Number (WAN) 232659, "Implement DCP 00-10937-3 to change the control circuits and solenoid valves for the feedwater isolation valves to energize to actuate"
- Design Change Package (DCP) 00-10937-3 and 00-10937-8, "MFIV - Energize to Actuate," Supplements 0, 1, and 2
- 50.59 Evaluation 00-10937-88, Revision 0

b. Findings

No findings of significance were identified.

1R19 Postmaintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed postmaintenance test procedures and associated testing activities for five risk-significant mitigating systems. In each case, the associated work orders and test procedures were reviewed against the attributes in Inspection Procedure 71111, Attachment 19, to determine the scope of the maintenance activity and determine if the testing was adequate to verify equipment operability. The Updated Final Safety Analysis Report, Technical Specifications, and design basis documents were also reviewed, as applicable, to determine the adequacy of the acceptance criteria listed in the test procedures. The inspectors witnessed or reviewed the results of postmaintenance testing for the following maintenance activities:

- Unit 2 Plant Surveillance Procedure 0PSP03-EW-0018, "Essential Cooling Water System Train B Testing," Revision 28, after a Train B essential cooling water pump cell switch failure on July 7 (WAN 255314)

- Unit 2 Plant Operations Procedure 0POP07-DB-0005, "TSC Diesel Generator Performance Test," Revision 8, following the completion of a temporary modification on July 9 (WAN 255581)

- Unit 1 Plant Surveillance Procedure 0PSP03-FW-0002, "Feedwater System Valve Operability Test (Cold Shutdown)," Revision 17, following the completion of a permanent modification on July 29 (WAN 205111)

- Unit 2 Plant Surveillance Procedure 0PSP03-AF-0005, "Auxiliary Feedwater Pump 22 Reference Values Measurement," Revision 11, following planned maintenance on August 20 (WAN 251766)

- Unit 2 Plant Operations Procedure 0POP02-DG-0003, "Emergency Diesel Generator 23," Revision 37, following planned maintenance on August 27 (WANs 231972, 204912, 253982, and 224522)

b. Findings

No findings of significance were identified.

1R20 Refueling and Outage Activities (71111.20)

a. Inspection Scope

On April 12, 2003, during a scheduled refueling outage, the licensee identified leakage from two bottom-mounted instrumentation penetrations while conducting a regular inspection of the reactor bottom head. On April 18, 2003, with the completion of the refueling outage activities, the unit transitioned into a forced outage to address the

identified penetration leakage. The inspectors reviewed the major work and weekly outage risk assessments on an ongoing basis to assess completeness, accuracy, and adequacy of risk management. The inspectors used Inspection Procedure 71111.20 to perform these inspection activities.

Refueling

The inspectors observed the second refueling required after completing bottom-mounted instrument penetration repair activities from the control room, radiation protection control center, and during containment tours to determine if these activities were conducted in accordance with the Technical Specifications and administrative procedures.

Maintaining Plant Conditions

The inspectors conducted frequent plant walkdowns to assess the availability of instrumentation, electrical power, decay heat removal, inventory control, reactivity control, and containment integrity. The inspectors reviewed plant conditions and observed selected outage activities throughout the forced outage to verify that the licensee maintained the plant in a configuration consistent with the requirements of Technical Specifications and with the assumptions of the outage risk assessment. Control room operators were also observed and interviewed on the status of plant conditions. The inspectors verified that emergent issues were properly assessed for their impact on plant risk.

Monitoring of Heatup and Startup Activities

The inspectors observed control room operations and reviewed control room logs to verify that the Unit 1 operational mode changes, including heatup and startup activities, were conducted in compliance with the applicable Technical Specifications and administrative procedures. Additionally, Plant Operating Procedure 0POP03-ZG-0005, “Reactor Startup to 100%,” Revision 45, was reviewed.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors evaluated the adequacy of three periodic tests of important nuclear plant equipment. This review included aspects such as preconditioning, the impacts of testing during plant operations, the adequacy of acceptance criteria, test frequency, procedure

adherence, record keeping, the restoration of standby equipment, test equipment and the effectiveness of the licensee's problem identification and resolution program. The inspectors observed or reviewed the following tests:

- (Unit 1) 0PSP03-DG-0001, "Standby Diesel Generator 11 Operability Test," Revision 24, on July 8
- Unit 1 0PSP03-MS-0002, "Main Steam System Cold Shutdown Valve Operability Test," Revision 11, on August 5
- Unit 1 0PSP03-AF-0007, "Auxiliary Feedwater Pump 14(24) Inservice Test," Revision 27, on August 6

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors reviewed the temporary modification of main steam isolation Valve 1A listed below to assess the following attributes: (1) the adequacy of the safety evaluation; (2) the consistency of the installation with the modification documentation; (3) the updating of drawings and procedures, as applicable; and (4) the adequacy of the post-installation testing. The inspectors also walked down the temporary modifications.

- T1-03-12084-8, "Adjust Close Limit Switch to Indicate Closed With Pilot Poppet Open," on August 6

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness [EP]

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

On August 27, 2003, the inspectors used the guidance in Inspection Procedure 71114.06 to assess a licensee evaluated emergency drill. The inspectors observed and reviewed drill activities in the control room simulator, the technical support center, the alternate emergency operations facility, and the Matagorda County Emergency Operations Center. The inspectors evaluated operators and licensee emergency response staff for clarity and formality of communications, the correct use of

procedures, and the oversight and direction provided by the shift supervisor and emergency director. The inspectors also observed the licensee's use of emergency action levels for proper emergency classification and reporting timeliness, reviewed the scenario sequence and objectives, and reviewed the licensee's critique.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS2 ALARA Planning and Controls (71121.02)

a. Inspection Scope

The inspector interviewed radiation protection personnel and radiation workers involved in high dose rate, high exposure, and airborne area work activities. The inspector assessed the licensee's performance in implementing physical and administrative controls for airborne radioactivity areas, radiation areas, and high radiation areas; radiation worker practices; and work activity dose results against procedural and regulatory requirements. The inspector observed work in a high radiation area involving Unit 1 power range detectors to determine if personnel used as low as is reasonably achievable (ALARA) practices and complied with regulatory and procedural requirements.

The inspector interviewed radiation protection staff, and other radiation workers to determine the level of planning, communication, ALARA practices, and supervisory oversight integrated into work planning and work activities. The inspector reviewed initial and emergent work scopes and estimated man-hours provided to the radiation protection group for accuracy. In addition, the following items were reviewed and compared with procedural and regulatory requirements to assess the licensee's program to maintain occupational exposures ALARA:

- Plant collective exposure history for the past 3 years, current exposure trends, source term measurements, and 3-year rolling average dose information
- Refueling Outage 2RE09 ALARA Report
- ALARA program procedures
- Processes, methodology, and bases used to estimate, justify, adjust, track, and evaluate exposures

- Three ALARA review packages from Refueling Outage 2RE09 activities that resulted in the highest personnel collective exposures
- Required pre-job meetings for Radiation Work Permits 2003-1-0261, "Perform Fuel Reconstitution," and 2003-1-0276, "Troubleshoot/Repair/Replace Power Range Detectors
- The use and result of administrative and engineering controls to achieve dose reductions
- Individual exposures and dose distribution within selected work groups (instruments and controls; mechanical maintenance)
- Plant source term evaluation and control strategy/program
- Repetitive radiation survey results at standard plant locations
- Self-assessments and quality verification results
- Declared pregnant worker and embryo/fetus dose evaluation, monitoring, and controls
- Summary of corrective action documents written since the last inspection and selected documents relating to exposure tracking, higher than planned exposure levels, radiation worker practices, repetitive, and significant individual deficiencies.
- Implementation of 10 CFR 20.1703(f)

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA2 Identification and Resolution of Problems (71152)

.1 Cell Switch Failure in Essential Cooling Water Pump 2B Breaker

a. Inspection Scope

The inspectors performed a detailed review of the licensee's identification and resolution of a failure of a cell switch in the essential cooling water Pump 2B breaker which occurred on July 5, 2003. This equipment failure was documented by the licensee in Condition Report 03-10468. The licensee's extent of condition assessment, operability assessments, and maintenance plan were reviewed and discussed with engineering,

operations, and risk assessment personnel. The inspectors evaluated the condition report against the requirements in the licensee's Corrective Action Program and 10 CFR 50, Appendix B.

b. Findings and Observations

A senior risk analyst in the Region IV office determined that this issue was of very low safety significance. The inspectors did not identify a performance issue.

No findings in the area of identification and resolution of problems were identified.

.2 Occupational Exposures

a. Inspection Scope

The inspectors evaluated the effectiveness of the licensee's problem identification and resolution processes regarding exposure tracking, higher than planned exposure levels, and radiation worker practices.

b. Findings and Observations

No findings of significance were identified.

4OA3 Event Followup (71153)

.1 (Closed) Licensee Event Report 0500498/2002004 Steam Generator Power Operated Relief Valve Failed to Close on Demand

On November 20, 2002, while Unit 1 was at Mode 3, operators attempted to close Power Operated Relief Valve (PORV) 1B in manual and the valve failed to close. The licensee determined that the thermal overload heater on the breaker supplying power to the actuator hydraulic pump for the PORV had tripped. During a plant modification process the licensee did not properly control or review vendor design work when upgrading safety related 480V motor control center breaker units. As a result, the breakers for the hydraulic pumps for steam generator PORVs 1B, 2B and 2C had undersized thermal overload heaters installed, such that the valves would not have functioned as designed during periods of prolonged use or under degraded voltage conditions. The details of this event and the issuance of a Green noncited violation of 10 CFR 50, Appendix B, Criterion III, "Design Control," was documented in Inspection Report 0500498/2002005. The corrective actions implemented in response to this event were documented in accordance with the licensee's Corrective Action Program in Condition Report 02-17395. No additional issues were identified by the inspectors. This LER is closed.

.2 (Closed) Licensee Event Report 0500499/2002004 Turbine Blade Failure

On December 15, 2002, Unit 2 was manually tripped in response to high turbine generator vibrations and indications of turbine damage. The issues associated with this LER were discussed in NRC Inspection Report 0500499/2002005. The NRC's review of the licensee's response to the event was documented in NRC Inspection Report 0500499/2003010. The corrective actions implemented in response to this event were detailed in accordance with the licensee's Corrective Action Program in Condition Report 02-19072. No additional issues were identified by the inspectors. This LER is closed.

4OA5 Other

(Closed) URI 05000498;499/2003002-01: Failure to Develop and Track Corrective Actions for Vendor Technical Bulletins/Advisories Associated with MOV failures

Introduction: A Green non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion V, was identified related to ineffective maintenance practices for motor operated valve actuators that resulted in the failure of a residual heat removal valve actuator and in numerous similar problems to a lesser degree in other valve actuators.

Description: The specific details of this event are documented in NRC Inspection Report 05000498;499/2003002. On January 25, 2003, following a Unit 2 shutdown, the licensee attempted to start Train C residual heat removal to support plant cooldown activities; however, the hot leg suction valve (RH-MOV-0060C) failed to open on demand. The licensee determined that: 1) the motor pinion set screw was not secured properly, and 2) the gear key was not staked in place on the valve motor operator. Limitorque Maintenance Update 89-01 reported failures associated with improperly secured set screws and motor pinion keys and made recommendations to correct these problems. The licensee incorporated the recommendations into the site MOV maintenance procedure but did not create actions to assure that the previously positioned set screws and keys were properly installed. Additionally, in 1993, the licensee hired a contractor to implement the field work for the STP Generic Letter 89-10 program; however, the contractor's procedures did not include steps to ensure keys and sets crews were properly secured.

Analysis: This finding affecting the Mitigation System Cornerstone objective of equipment reliability is greater than minor because if the condition were left uncorrected it could become a more significant safety concern. Specifically, numerous other valve actuators had similar deficiencies which could, in time, progress to the point of failure. The finding was assessed in accordance with NRC Inspection Manual Chapter 0609, "Significance Determination Process". The finding represented an actual loss of the safety function of one RHR train for greater than its Technical Specification allowed outage time and affected several other valve actuators with similar deficiencies to a lesser degree. A Region IV Senior Reactor Analyst determined that this degraded condition was of very low risk significance (green) based on an estimate of the risk

associated with RHR-MOV-0060C being presumably nonfunctional for 28 days and with all MOVs sustaining an elevated failure rate associated with the maintenance deficiencies over a period of one year.

Enforcement: 10 CFR 50, Appendix B, Criterion V, requires, in part, that activities affecting quality shall be prescribed by procedures and shall be accomplished in accordance with these procedures. Procedure IP-1.8Q, "Control of Vendor Documents," Revision 6 (the procedure in effect at the time) required the licensee to develop, perform, track, and close out corrective actions for vendor technical bulletins/advisories. Limitorque Maintenance Update 89-01, a document meeting the definition of Vendor Technical Bulletin/Advisory, notified the licensee of the design problem associated with securing the motor pinion set screws and provided recommended actions to correct it. The licensee failed to track actions to ensure that the recommended corrective actions were implemented on applicable MOV actuators. Because this failure to comply with 10 CFR 50, Appendix B, Criterion V, is of very low safety significance and has been entered into the licensee's corrective action program as Condition Report 03-1341, this violation is being treated as a an NCV, consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000498;499/2003003-01, Failure to Develop and Track Corrective Actions for Vendor Technical Bulletins/Advisories Associated with MOV failures.

4OA6 Meetings, Including Exit

The results of the radiation protection inspection were presented to Mr. J. Sheppard, President and Chief Executive Officer, and other members of licensee management on August 7, 2003.

The results of the resident inspection were presented to Mr. G. Parkey, Vice President, Generation, and other members of licensee management on September 25, 2003.

In each case, the inspectors asked the licensee representatives whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

Other Meetings

On September 2, 2003, in accordance with the NRC's Action Matrix, the Chief, Reactor Project Branch A, NRC, Region IV, held a Regulatory Performance Meeting with STP executive management and other members of licensee management to discuss performance associated with the White Performance Indicator for Unplanned Scrams for Unit 2.

40A7 Licensee-identified Violations

The following violation of very low significance (Green) was identified by the licensee and is a violation of NRC requirements which meets the criteria of Section VI of the

NRC Enforcement Policy, NUREG-1600, for being dispositioned as a noncited violation (NCV).

- Technical Specification 3.8.1.1.d requires in part, with one standby diesel generator inoperable, the licensee will verify that all required systems, subsystems, trains, components, and devices that depend on the remaining operable diesel generator as a source of emergency power are also operable. If this condition is not satisfied within 24 hours, the reactor shall be in at least hot standby within the next six hours and in cold shutdown within the following 30 hours.

  On September 4, 2003, the licensee identified that auxiliary feedwater Pump 11 had been inoperable from August 8 to September 4 due to a breaker problem and emergency diesel Generator 13 had been declared inoperable for routine maintenance during a period exceeding 54 hours on August 18 to 20 without completing the required mode changes. This item was documented in the licensee's Corrective Action Program as Condition Report 03-13724. This finding is of very low safety significance because auxiliary feedwater Pump 11 did not exceed its Technical Specification allowed outage time of 28 days and risk assessments, which account for routine maintenance outages, were not significantly affected.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## SUPPLEMENTAL INFORMATION

## KEY POINTS OF CONTACT

Licensee

W. Bealefield, Senior Staff Specialist
C. Bowman, Manager, Plant Engineering
W. Bullard, Manager, Health Physics
K. Coates, Manager, Maintenance
J. Crenshaw, Manager, Plant Engineering
R. Gangluff, Manager, Chemistry
S. Head, Manager, Licensing
T. Jordan, Vice President, Engineering and Technical
J. Jump, Manager Training
M. Kanavos, Manager, Design Engineering
D. Leazar, Manager, Nuclear Fuels and Analysis
R. Laroya, Quality, Senior Reactor Operator
M. McBurnett, Manager, Quality and Licensing
M. Meier, Manager Generation Station Support
A. Mikus, Supervisor, Communication and Public Affairs
A. Morgan, Supervisor, Emergency Response
J. Myers, ALARA Specialist, Health Physics
G. Parkey, Vice President, Generation
L. Peter, Manager, Operations Division Unit 2
G. Powell, Manager, Operating Experience Group
K. Richards, Manager, Outage and Projects
R. Savage, Senior Staff Specialist
J. Sheppard, President and CEO
C. Stone, Supervisor, Health Physics
D. Towler, Manager, Quality
T. Walker, Manager, Quality
G. Williams, Specialist, Health Physics

## LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Open

| | | |
|---|---|---|
| 05000498;499/2003003-01 | NCV | Failure to Develop and Track Corrective Actions for Vendor Technical Bulletins/Advisories Associated with MOV failures (Section 4OA5) |

Closed

| | | |
|---|---|---|
| 05000498;499/2003003-01 | NCV | Failure to Develop and Track Corrective Actions for Vendor Technical Bulletins/Advisories Associated with MOV failures (Section 4OA5) |
| 05000498/2002004 | LER | Steam Generator Power Operated Relief Valve Failed to Close on Demand (Section 4OA3) |
| 5000499/2002004 | LER | Turbine Blade Failure (Section 4OA3) |
| 05000498;499/2003002-01 | URI | Failure to Develop and Track Corrective Actions for Vendor Technical Bulletins/Advisories Associated with MOV failures (Section 4OA5) |

## LIST OF DOCUMENTS REVIEWED

In addition to the documents identified in the inspection report, the following documents were selected and reviewed by the inspectors to accomplish the objectives and scope of the inspection and to support any findings:

IP 71121.02

Condition Reports

02-17032, 02-17380, 02-17646, 03-5764, 03-6063, 03-6587, 03-7610, 03-7650

Procedures

| | |
|---|---|
| 0PGP03-ZR-0052 | ALARA Program, Revision 4 |
| 0PGP03-ZR-0054 | Respiratory Protection Program, Revision 8 |
| 0PRP07-ZR-0010 | Radiation Work Permits, Revision 11 |
| 0PRP07-ZR-0011 | Radiological Work ALARA Reviews, Revision 4 |

Self Assessment and Quality Verification

Quality Assurance Monitoring Report MN-03-0-0670, “ALARA Program Review”

ALARA Review Packages

Work Authorization Numbers 213034, “Scaffolding,” 213049, “RCS Piping,” and 215600, “Secondary Piping”

ALARA Committee Meeting Minutes

August 22, 2002 to July 8, 2003

## LIST OF ACRONYMS

| | |
|---|---|
| ALARA | As Low As is Reasonably Achieved |
| CFR | *Code of Federal Regulations* |
| CR | condition report |
| LER | licensee event report |
| NCV | noncited violation |
| PORV | power operated relief valve |
| WAN | work authorization number |