



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

May 18, 2007

EA-07-068

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

SUBJECT: SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION - NRC
INTEGRATION INSPECTION REPORT 05000498/2007002 AND
05000499/2007002

Dear Mr. Sheppard:

On April 6, 2007, the U.S. 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 April 12, 2007, 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.

Based on the results of this inspection, this report documents two findings of very low safety significance (Green), both of which were self-revealing. One of these findings was determined to involve a violation of NRC requirements; however, because the finding was entered into your corrective action program, the NRC is treating this violation as a noncited violation consistent with Section VI.A of the Enforcement Policy. If you contest this noncited violation, 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 2.390 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).

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

Sincerely,

/RA/

Claude E. Johnson, Chief
Project Branch A
Division of Reactor Projects

Dockets: 50-498
50-499

Licenses: NPF-76
NPF-80

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NRC Inspection Report 05000498/2007002 and 05000499/2007002
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SUNSI Review Completed: CEJ ADAMS: ☒ Yes ☐ No Initials: CEJ
☒ Publicly Available ☐ Non-Publicly Available ☐ Sensitive ☒ Non-Sensitive

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**U.S. NUCLEAR REGULATORY COMMISSION
REGION IV**

Dockets: 05000498, 05000499

Licenses: NPF-76, NPF-80

Report: 05000498/2007002 and 05000499/2007002

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: January 1 through April 6, 2007

Inspectors: J. Dixon, Senior Resident Inspector
T. Farnholtz, Senior Project Engineer
J. Nadel, Reactor Inspector
J. Taylor, Resident Inspector

Others: W. Johnson, Contractor

Approved By: Claude E. Johnson, Chief, Project Branch A
Division of Reactor Projects

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SUMMARY OF FINDINGS

IR 05000498/2007002, 05000499/2007002; 01/01/07-04/06/07; South Texas Project Electric Generating Station, Units 1 and 2; Resident Report; Maintenance Risk Assessments, Other Activities.

This report covered a 3-month period of inspection by resident and regional inspectors. The inspection identified two Green findings, one of which was determined to be a noncited violation. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using Inspection Manual Chapter 0609, "Significance Determination Process." Findings for which the significance determination process does not apply may be Green or be assigned a severity level after NRC management's review. 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: Initiating Events

- Green. The inspectors reviewed a self-revealing finding for a failure to follow procedure, which resulted in losing power to Load Center 2G2 and subsequently the running stator cooling water pump, which would have resulted in a main turbine/reactor trip had the standby stator cooling water pump not auto started. The plant operator opened Breaker 2G2/3B, the supply breaker to Load Center 2G2, instead of Breaker 2G2/3C, the power supply to the condenser air removal system Pump 23. Just before opening the breaker, the plant operator took his eyes off the breaker to bend down and read the breaker racking procedure and the equipment clearance order. Upon standing up, the plant operator did not ensure that he was manipulating the correct breaker and inserted the breaker racking tool into the wrong breaker.

This finding was more than minor because it was associated with the initiating events cornerstone attribute of human performance and it affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. The inspectors evaluated the finding using the Significance Determination Process Phase 1 screening and determined it to be of very low safety significance (Green) because, although the likelihood of a reactor trip increased, the likelihood that mitigating systems would not be available did not increase. This issue also had human performance crosscutting aspects associated with work practices in that personnel involved failed to follow the procedure due to inadequate human error prevention techniques, such as self and peer checking (Section 1R13).

Cornerstone: Mitigating Systems

- Green. The inspectors reviewed a self-revealing noncited violation of Technical Specification 6.8.1.a for failure to follow Procedures STI 32013741, "Conduct of Maintenance," dated May 15, 2006, and 0PMP04-SI-0002, "High Head Safety Injection Pump Maintenance." On November 27, 2006, the Unit 2 high head safety injection Pump 2A was declared inoperable in order to replace the mechanical seal. The craftsmen encountered several clearance (tolerance) problems trying to remove various parts of the pump. Instead of recognizing the unexpected conditions as adverse and stopping work, the craftsmen and their supervisor continued to troubleshoot the pump outside of the prescribed procedural steps. As a result, the pump was damaged and the licensee requested, which the NRC granted, enforcement discretion to prevent a required Technical Specification shutdown. This event demonstrated improper maintenance practices as outlined in the conduct of maintenance procedure, specifically, ". . . . If at any time a conflict arises, unexpected conditions develop, the job instructions are unclear, or the work cannot be performed as planned, stop the job."

The inspectors determined that the violation was more than minor because it was associated with the mitigating systems cornerstone attribute of equipment and human performance, and it affected the cornerstone objective to ensure the availability of systems that respond to initiating events to prevent undesirable consequences. Furthermore, the performance deficiency would have resulted in a Technical specification shutdown if not for the Notice of Enforcement Discretion. The inspectors evaluated the violation using Inspection Manual Chapter 0609, "Significance Determination Process," Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," Phase 1 screening, and determined that it resulted in Phase 2 analysis due to a single train inoperable for longer than its TS allowed outage time. The Phase 2 analysis screened as Green. This finding also had human performance crosscutting aspects associated with work practices in that the licensee did not clearly define and effectively communicate expectations regarding procedural compliance and personnel following procedures (Section 4OA5).

B. Licensee-Identified Violations

None.

REPORT DETAILS

Summary of Plant Status

Unit 1 began the inspection period at 100 percent rated thermal power (RTP) and operated at or near full RTP for the remainder of the inspection period.

Unit 2 began the inspection period at 100 percent RTP and commenced coast down operations on February 18, 2007, in preparation for Refueling Outage 2RE12. On March 25, 2007, the licensee opened the main generator output breaker and commenced Refueling Outage 2RE12. The unit remained in Refueling Outage 2RE12 for the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

Readiness for Seasonal Susceptibilities

a. Inspection Scope

The inspectors completed a review of the licensee's readiness of seasonal susceptibilities involving freezing temperatures. The inspectors: (1) reviewed plant procedures, the Updated Final Safety Analysis Report (UFSAR), and Technical Specifications (TSs) to ensure that operator actions defined in adverse weather procedures maintained the readiness of essential systems; (2) walked down portions of the systems listed below to ensure that adverse weather protection features (heat tracing, space heaters, weatherized enclosures, temporary chillers, etc...) were sufficient to support operability including the ability to perform safe shutdown functions; (3) evaluated operator staffing levels to ensure the licensee could maintain the readiness of essential systems required by plant procedures; and (4) reviewed the corrective action program (CAP) to determine if the licensee identified and corrected problems related to adverse weather conditions.

- January 16, 2007, Units 1 and 2, reviewed plant implementation of Procedure OPOP01-ZO-0004, "Extreme Cold Weather Guidelines," Revision 22, and walked down control panels; essential cooling water (ECW) pump rooms; startup and booster feed pumps; plant exterior perimeter, including standby, auxiliary, and main transformers; security enclosures; fire protection areas; Technical Support Center diesel rooms; and the auxiliary boiler

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

.1 Partial Walkdown

a. Inspection Scope

The inspectors: (1) walked down portions of the three below listed risk important systems and reviewed plant procedures and documents to verify that critical portions of the selected systems were correctly aligned, and (2) compared deficiencies identified during the walkdown to the licensee's UFSAR and CAP to ensure problems were being identified and corrected.

- January 10, 2007, Unit 2, spent fuel pool cooling and cleanup system per Procedure 0POP02-FC-0001, "Spent Fuel Pool Cooling and Cleanup System," Revision 47, valve and electrical lineups
- February 27, 2007, Unit 2, control room envelope heating, ventilation, and air conditioning (HVAC), Train A during Train B maintenance, per Procedure 0POP02-HE-0001, "Electrical Auxiliary Building HVAC System," Revision 47, valve and electrical lineups
- March 8, 2007, Unit 2, safety injection Train A, per Procedure 0POP02-SI-0002, "Safety Injection System Initial Lineup," Revision 18, valve and electrical lineups

The inspectors completed three samples.

b. Findings

No findings of significance were identified.

.2 Complete Walkdown

a. Inspection Scope

The inspectors: (1) reviewed plant procedures, drawings, the UFSAR, TSs, and vendor manuals to determine the correct alignment of the one system below; (2) reviewed outstanding design issues, operator work arounds, and UFSAR documents to determine if open issues affected the functionality of the system; and (3) verified that the licensee was identifying and resolving equipment alignment problems.

- February 8, 2007, Unit 1, essential chilled water Train B, during Train C maintenance, per Procedure 0POP02-CH-0001, "Essential Chilled Water System," Revision 38, valve and electrical lineups

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

Quarterly Inspection

a. Inspection Scope

The inspectors walked down the six below listed plant areas to assess the material condition of active and passive fire protection features and their operational lineup and readiness. The inspectors: (1) verified that transient combustibles and hot work activities were controlled in accordance with plant procedures; (2) observed the condition of fire detection devices to verify they remained functional; (3) observed fire suppression systems to verify they remained functional and that access to manual actuators was unobstructed; (4) verified that fire extinguishers and hose stations were provided at their designated locations and that they were in a satisfactory condition; (5) verified that passive fire protection features (electrical raceway barriers, fire doors, fire dampers steel fire proofing, penetration seals, and oil collection systems) were in a satisfactory material condition; (6) verified that adequate compensatory measures were established for degraded or inoperable fire protection features and that the compensatory measures were commensurate with the significance of the deficiency; and (7) reviewed the UFSAR to determine if the licensee identified and corrected fire protection problems.

- January 3, 2007, Unit 1, auxiliary feedwater (AFW) penetration area, Trains C and D (Fire Zones Z406 and Z409)
- January 10, 2007, Unit 2, mechanical auxiliary building(MAB) HVAC intake, hot machine shop, and adjacent above/below areas after ventilation heater power supply panel fire (Fire Zones Z115, Z122, Z130, and Z147)
- February 7, 2007, Unit 1, essential chilled water Train B chiller room (Fire Zone Z140)
- February 23, 2007, Unit 2, isolation valve cubicle Train D penetration and pump room (Fire Zones Z400 and Z409)
- February 27, 2007, Unit 2, control room envelope HVAC Train A equipment spaces and pipe chases (Fire Zones Z005, Z023, Z034, Z068, Z070, Z085, and Z093)
- March 8, 2007, Unit 2, safety injection Train A and fuel handling building stairwell (Fire Zones Z303, Z307, and Z322)

The inspectors completed six samples.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Regualification Program (71111.11)

a. Inspection Scope

On January 30, 2007, the inspectors observed testing and training of senior reactor operators and reactor operators to identify deficiencies and discrepancies in the training, to assess operator performance, and to assess the evaluator's critique. The first training scenario involved a reactor startup with a steam generator safety valve opening prior to criticality. The second training scenario involved a reactor startup with an inadvertent dilution at the point of adding heat.

Documents reviewed by the inspectors included:

- Procedure 0POP03-ZG-0004, "Reactor Startup," Revision 29
- Procedure 0POP05-EO-EO00, "Reactor Trip or Safety Injection Response," Revision 19
- CRs 06-16239, -16240, and -16242

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors reviewed the two below listed maintenance activities to: (1) verify the appropriate handling of structure, system, and component (SSC) performance or condition problems; (2) verify the appropriate handling of degraded SSC functional performance; (3) evaluate the role of work practices and common cause problems; and (4) evaluate the handling of SSC issues reviewed under the requirements of the Maintenance Rule, 10 CFR Part 50, Appendix B, and TSs.

- January 11, 2007, Unit 2, fire in the MAB at Elevation 60' in a control panel for a duct heater, which supplied power to the locker room and an office area; additionally, reviewed Units 1 and 2 overall system health for various systems as it related to fires that have occurred within the protected area over the last 2 years
- March 13, 2007, Units 1 and 2, AFW overall system health due to issues associated with the turbine-driven trip and throttle valve, trip linkage (impact spacing and latching surfaces), and long-path recirculation isolation valve leakby

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed two samples.

b. Findings

No findings of significance were identified.

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

Risk Assessment and Management of Risk

a. Inspection Scope

Risk Assessment and Management of Risk

The inspectors reviewed the five below listed assessment activities to verify: (1) performance of risk assessments when required by 10 CFR 50.65 (a)(4) and licensee procedures prior to changes in plant configuration for maintenance activities and plant operations; (2) the accuracy, adequacy, and completeness of the information considered in the risk assessment; (3) that the licensee recognizes, and/or enters as applicable, the appropriate licensee-established risk category according to the risk assessment results and licensee procedures; and (4) that the licensee identified and corrected problems related to maintenance risk assessments.

- Week of January 8, 2007, Units 1 and 2, planned maintenance for the week including 345kV south bus activities, Unit 1 Train A potential transformer replacement, and Unit 2 solid state protection system surveillance test on Train S which contains a tin whisker
- Week of January 22, 2007, Unit 1, planned extended allowed outage time maintenance on ECW Pump 1B and associated emergency TS request of January 25, 2007, later withdrawn
- Week of January 29, 2007, Unit 1, planned extended allowed outage time maintenance on essential chilled water Chiller 12C
- Week of February 12, 2007, Units 1 and 2, planned maintenance on Unit 1 Train A and Unit 2 control room envelope gas tracer testing and the unexpected loss of the running stator cooling water pump during a tagout evolution
- March 24 through April 6, 2007, Unit 2, Refueling Outage 2RE12 activities

Documents reviewed by the inspectors included:

- CRs 07-1017, and -2369
- Procedure 0POP01-ZO-0006, "Extended Allowed Outage Time," Revision 13, dated January 28, 2007
- Work Activity Risk Plan of Action Evaluation 1605, 1626

- 2RE12 Shutdown Risk Assessment Group Report

The inspectors completed five samples.

b. Findings

Introduction. The inspectors reviewed a Green self-revealing finding for a failure to follow procedure, which resulted in losing power to Load Center 2G2 and subsequently the running stator cooling water pump, which would have resulted in a main turbine/reactor trip had the standby stator cooling water pump not auto started.

Description. On February 13, 2007, during the execution of Equipment Clearance Order 44483 to remove Unit 2 condenser air removal system Pump 23 from service for maintenance, a plant operator accidentally opened the wrong breaker. The plant operator opened Breaker 2G2/3B, the supply breaker to Load Center 2G2, instead of Breaker 2G2/3C, the power supply to the condenser air removal system Pump 23. Contributing to this event was that Breaker 2G2/3B is located directly above Breaker 2G2/3C and the plant operator was wearing flash gear which could have impeded visibility. Just before opening the breaker, the plant operator took his eyes off the breaker to bend down and read the breaker racking procedure and the equipment clearance order that were lying on the floor in front of the cubicle. Upon standing up, the plant operator did not ensure that he was manipulating the correct breaker and inserted the breaker racking tool into the wrong breaker resulting in Load Center 2G2 de-energizing.

As a result of Load Center 2G2 de-energizing several nonsafety-related loads lost power, for example, instrument air Compressor 23, both generator loop seal vapor extractors, and stator cooling water Pump 22. As a result of stator cooling water Pump 22 tripping, the pressure in the stator cooling water system lowered to the point that stator cooling water Pump 21 auto started. Had stator cooling water Pump 21 not started then stator cooling water flow would have been lost and the generator would no longer have cooling water. This decrease in flow would have been sensed and would have actuated a loss of stator cooling water flow relay which would have generated a main turbine trip which would have been immediately followed by a reactor trip since reactor power was greater than 50 percent RTP at the time of the event.

Additionally, a similar event occurred in Unit 1 where a plant operator manipulated a danger do not operate tagged component. The operator was assisting maintenance in trying to relieve pressure buildup in a portion of the condensate polishing system. Rather than investigating the reason behind the pressure buildup, the plant operator manipulated the cation master valve mode switch, as it controlled the valve the operator was trying to open which he thought would relieve the pressure buildup and failed to realize that the switch had a danger do not operate tag hanging in accordance with Equipment Clearance Order 44155. The manipulation of the valve did not relieve pressure, and during later discussions with the control room, the plant operator realized he had manipulated a tagged component.

Analysis. The performance deficiency associated with this event was the failure to follow Procedure 0PGP03-ZO-ECO1A, "Equipment Clearance Order Instructions," Revision 5, specifically the failure to properly execute Equipment Clearance Order 44483. This event had the actual impact of challenging main generator stator cooling water which could have resulted in a main turbine/reactor trip. This finding was more than minor because it was associated with the initiating events cornerstone attribute of human performance and it affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. The inspectors evaluated the violation using Inspection Manual Chapter 0609, "Significance Determination Process," Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," Phase 1 screening, and determined that it was of very low safety significance (Green) because, although the likelihood of a reactor trip increased, the likelihood that mitigating systems would not be available did not increase. This issue also had human performance crosscutting aspects associated with work practices in that the personnel involved failed to follow the procedure due to inadequate human error prevention techniques, such as self and peer checking (STAR - Stop Think Act Review).

Enforcement. No violation of regulatory requirements occurred. The inspectors determined that the finding did not represent a noncompliance because it occurred on nonsafety-related equipment. Licensee personnel entered this issue into the CAP as CR 07-2369. This issue is being treated as a finding: FIN 05000499/2007002-01, "Human Performance Error Hanging an Equipment Clearance Order."

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors: (1) reviewed plants status documents such as operator shift logs, emergent work documentation, deferred modifications, and standing orders to determine if an operability evaluation was warranted for degraded components; (2) referred to the UFSAR and design basis documents to review the technical adequacy of licensee operability evaluations; (3) evaluated compensatory measures associated with operability evaluations; (4) determined degraded component impact on any TSs; (5) used the significance determination process to evaluate the risk significance of degraded or inoperable equipment; and (6) verified that the licensee has identified and implemented appropriate corrective actions associated with degraded components.

- January 19, 2007, Units 1 and 2, Unit 1 high head safety injection (HHSI) Pump 2A missing cap screws on one of its stages and the potential operability impact on the remaining Units 1 and 2 high and low head safety injection pumps and the containment spray pumps (CR 06-16436)
- February 2, 2007, Units 1 and 2, ECW Pump 1B shaft sleeve degradation and remaining Units 1 and 2 ECW pumps for similar issue (CR 07-1198)
- February 12, 2007, Unit 1, safety injection Trains A and C room coolers cooling fans airflow redirected by scaffolding (CR 07-2210)

- February 13, 2007, Unit 2, control room envelope tracer gas testing resulting in unfiltered inleakage greater than allowed by the UFSAR (CRs 07-2319, 06-5549, and 02-8153)
- February 21, 2007, Unit 2, HHSI Pump 2A miniflow recirculation line second isolation motor-operated Valve 2-SI-MOV-0012A valve disk not opening when the actuator is opened (CR 07-2755)
- March 9, 2007, Units 1 and 2, AFW Pump 23 excessive recirculation flow through the manual long path recirculation valve and testing of the other seven trains of AFW on Units 1 and 2 for a similar issue (CR 07-3436)

The inspectors completed six samples.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications (71111.17)

Annual Review

a. Inspection Scope

The inspectors reviewed key affected parameters associated with energy needs, materials/replacement components, timing, heat removal, control signals, equipment protection from hazards, operations, flowpaths, pressure boundary, ventilation boundary, structural, process medium properties, licensing basis, and failure modes for the one modification listed below. The inspectors verified that: (1) modification preparation, staging, and implementation does not impair emergency/abnormal operating procedure actions, key safety functions, or operator response to loss of key safety functions; (2) postmodification testing maintained the plant in a safe configuration during testing by verifying that unintended system interactions will not occur, SSC performance characteristics still meet the design basis, the appropriateness of modification design assumptions, and the modification test acceptance criteria has been met; and (3) the licensee has identified and implemented appropriate corrective actions associated with permanent plant modifications.

- February 22, 2007, Unit 1, ESF Transformer E1C and 4.16kV/480V Load Center Transformers E1C1 and E1C2 tap setting changes per Design Change Package 04-11502-5 and Work Orders 452123 and 452124

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R19 Postmaintenance Testing (71111.19)

a. Inspection Scope

The inspectors selected the five below listed postmaintenance test activities of risk significant systems or components. For each item, the inspectors: (1) reviewed the applicable licensing basis and/or design-basis documents to determine the safety functions; (2) evaluated the safety functions that may have been affected by the maintenance activity; and (3) reviewed the test procedure to ensure it adequately tested the safety function that may have been affected. The inspectors either witnessed or reviewed test data to verify that acceptance criteria were met, plant impacts were evaluated, test equipment was calibrated, procedures were followed, jumpers were properly controlled, the test data results were complete and accurate, the test equipment was removed, the system was properly realigned, and deficiencies during testing were documented. The inspectors also reviewed the UFSAR to determine if the licensee identified and corrected problems related to postmaintenance testing.

- January 12, 2007, Unit 1, Switchgear E1A potential transformer replacement which supplies degraded and undervoltage Train A Channel 1 relays
- January 19, 2007, Unit 2, AFW Pump 24 manual start after trip and throttle valve maintenance per Work Authorization (WAN) 300624, 307887, and 312713; Procedures 0PSP03-AF-0007, "Auxiliary Feedwater Pump 14(24) Inservice Test," Revision 31; 0PMP05-ZE-0312, "Limitorque MOV Actuator Lube," Revision 19; 0PSP03-AF-0010, "Auxiliary Feedwater System Valve Operability Test," Revision 21; and 0PMP04-AF-0003, "Auxiliary Feedwater Turbine Trip Throttle Valve Maintenance," Revision 10
- February 2, 2007, Unit 1, ECW Pump 1B testing after overhaul per Procedure 0PSP03-EW-0011, "Essential Cooling Water Pump 1B(2B) Reference Values Measurement," Revisions 11 and 12; and WAN 321797 including Procedures 0PGP03-ZE-0027, "ASME Section XI Repair, Replacement and Post-Maintenance Pressure Testing," Revision 24; and Procedure 0PMP04-EW-0001, "Essential Cooling Water Pump Maintenance," Revision 22
- February 7, 2007, Unit 1, residual heat removal Pump 1C and heat exchanger bypass Valve SI-FCV-0853 testing after valve gasket replacement and pump control agastat relay calibration per WANs 306144 (CR 05-12745) and 287418, and Preventative Maintenance Instruction PM-EM-2-95002490
- February 19, 2007, Unit 2, spent fuel pool cooling Pump 2B shaft, seal and bearing replacement per WANs 289962 (CR 04-8297) and 332596 (CR 07-1254) and CRs 07-829, and -1007

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed five samples.

b. Findings

No findings of significance were identified. See Section 4OA5 for additional information regarding the Unit 2 spent fuel pool cooling Pump 2B.

1R20 Refueling and Other Outage Activities (71111.20)

a. Inspection Scope

The inspectors reviewed the following risk significant refueling items or outage activities on Unit 2 during Refueling Outage 2RE12, which commenced March 25, 2007, to verify defense in depth commensurate with the outage risk control plan, compliance with the TSs, and adherence to commitments in response to Generic Letter 88-17, "Loss of Decay Heat Removal:" (1) the risk control plan, (2) tagging/clearance activities, (3) reactor coolant system instrumentation, (4) electrical power, (5) decay heat removal, (6) spent fuel pool cooling, (7) inventory control, (8) reactivity control, (9) containment closure, (10) refueling activities, (11) cooldown activities, and (12) licensee identification and implementation of appropriate corrective actions associated with refueling and outage activities. The inspectors' containment inspections included observation of the containment sump for damage and debris, supports, braces, and snubbers for evidence of excessive stress, water hammer, or aging, as well as general indications of boric acid leaks. The inspectors also performed a 'smart sample' observation of crane heavy lift activities for reactor vessel head removal to the nonrapid refueling stand and replacement of the reactor coolant pump Motor 2B.

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed the UFSAR, procedure requirements, and TSs to ensure that the five below listed surveillance activities demonstrated that the SSC's tested were capable of performing their intended safety functions. The inspectors either witnessed or reviewed test data to verify that the following significant surveillance test attributes were adequate: (1) preconditioning; (2) evaluation of testing impact on the plant; (3) acceptance criteria; (4) test equipment; (5) procedures; (6) jumper/lifted lead controls; (7) test data; (8) testing frequency and method demonstrated TS operability; (9) test equipment removal; (10) restoration of plant systems; (11) fulfillment of ASME Code requirements; (12) updating of performance indicator (PI) data; (13) engineering evaluations, root causes, and bases for returning tested SSCs not meeting the test acceptance criteria were correct; (14) reference setting data; and (15) annunciators and alarms setpoints. The inspectors also verified that the licensee identified and implemented any needed corrective actions associated with the surveillance testing.

- January 7, 2007, Unit 1, Procedure 0PSP03-SP-0005S, "SSPS Logic Train S Functional Test," Revision 23; CR 07-183; and WANs 310740 and 331478
- January 11, 2007, Unit 2, Procedure 0POP03-RS-0001, "Monthly Control Rod Operability," Revision 20; and WAN 311286
- January 19, 2007, Unit 2, AFW Pump 24 surveillance test after trip and throttle valve maintenance, Procedure 0PSP03-AF-0007, "Auxiliary Feedwater Pump 14(24) Inservice Test," Revision 31
- February 7, 2007, Unit 1, Procedure 0PSP03-RH-0003, "Residual Heat Removal Pump 1C(2C) Inservice Test," Revision 13, after maintenance
- February 16, 2007, Unit 2, control room envelope positive pressure test in conjunction with gas tracer testing, Procedure 0PSP11-HE-0002, "Control Room Emergency Air Cleanup System Function Test," Revision 28; and CRs 02-8153, 07-2319, and 07-3133

The inspectors completed five samples.

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors reviewed the UFSAR, plant drawings, procedure requirements, and TSs to ensure that the one below listed temporary modification was properly implemented. The inspectors: (1) verified that the modification did not have an affect on system operability/availability, (2) verified that the installation was consistent with the modification documents, (3) ensured that the postinstallation test results were satisfactory and that the impact of the temporary modification on permanently installed SSC's were supported by the test, (4) verified that the modification was identified on control room drawings and that appropriate identification tags were placed on the affected drawings, and (5) verified that appropriate safety evaluations were completed. The inspectors verified that licensee identified and implemented any needed corrective actions associated with temporary modifications.

- January 8, 2007, Unit 1, reactor containment building personnel air lock reactor building side door seal being used "as-is" due to a larger than design dimensional discrepancy

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

For the one below listed drill and simulator-based training evolution contributing to drill/exercise performance, emergency response organization, and performance indicators, the inspectors: (1) observed the training evolution to identify any weaknesses and deficiencies in classification, notification, and protective action requirements development activities; (2) compared the identified weaknesses and deficiencies against licensee identified findings to determine whether the licensee is properly identifying failures; and (3) determined whether licensee performance is in accordance with the guidance of the Nuclear Energy Institute 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 4, acceptance criteria.

- March 6, 2007, Unit 1, simulator, technical support center, and emergency operations facility combined drill, the unit was operating in Mode 5 preparing to transition to Mode 6 when the running residual heat removal pump tripped, followed by a loss of a DC bus which resulted in an Unusual Event declaration. Subsequently, the remaining residual heat removal pump tripped which resulted in a total loss of residual heat removal and resulted in the declaration of an Alert. Finally, a reactor coolant system leak developed which resulted in a loss of reactor vessel level and the declaration of a Site Area Emergency.

Documents reviewed by the inspectors included:

- STP Nuclear Operating Company, Red Team, Combined Functional Drill Scenario Manual, March 6, 2007

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

.1 Routine Review of Identification and Resolution of Problems

The inspectors performed a daily screening of items entered into the licensee's CAP. This assessment was accomplished by reviewing work orders, CRs, etc... and attending corrective action review and work control meetings. The inspectors: (1) verified that equipment, human performance, and program issues were being identified by the licensee at an appropriate threshold and that the issues were entered into the CAP;

(2) verified that corrective actions were commensurate with the significance of the issue; and (3) identified conditions that might warrant additional followup through other baseline inspection procedures. The inspectors used the licensee's Procedure OPGP03-ZX-0002, "Condition Reporting Process," Revision 31, for understanding the threshold level for generating a CR.

.2 Cumulative Review of the Effects of Operator Workarounds

a. Inspection Scope

The inspectors reviewed the cumulative effects of operator workarounds, and discussed with operations personnel, in Units 1 and 2, during the week of March 12, 2007, to determine: (1) the reliability, availability, and potential for misoperation of a system; (2) if multiple mitigating systems could be affected; (3) the ability of operators to respond in a correct and timely manner to plant transients and accidents; and (4) if the licensee has identified and implemented appropriate corrective actions associated with operator workarounds.

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

.3 Selected Issue Follow-up Inspection

a. Inspection Scope

In addition to the routine review, the inspectors selected the one below listed issue for a more indepth review. The inspectors considered the following during the review of the licensee's actions: (1) complete and accurate identification of the problem in a timely manner; (2) evaluation and disposition of operability/reportability issues; (3) consideration of extent of condition, generic implications, common cause, and previous occurrences; (4) classification and prioritization of the resolution of the problem; (5) identification of root and contributing causes of the problem; (6) identification of corrective actions; and (7) completion of corrective actions in a timely manner.

- March 16, 2007, Units 1 and 2, AFW overall system health due to issues associated with turbine-driven trip and throttle valve and trip linkage (impact spacing and latching surfaces)

Documents reviewed by the inspectors are listed in the attachment.

b. Findings

On December 12, 2006, during the Unit 1 turbine-driven AFW Pump 14 surveillance testing, the pump failed to reach rated speed. The trip and throttle valve (MOV 0514) was taken to open from the control room to commence the surveillance test, but as the

valve started to open, the mechanical/electrical trip linkage on the pump tripped; thereby, disconnecting the valve from the actuator. Consequently, the valve failed to move off the closed seat. During troubleshooting activities, it was identified that the impact distance between the slip link lever and the trip rod pin was below the minimum distance required, and the trip hook and latch-up lever engagement was unacceptable. Additionally, it was discovered that the licensee misinterpreted, and misapplied, vendor guidance on the engagement requirement between the trip hook and the latch-up lever. The licensee has a design change package that addresses the impact distance and aligns it more with the EPRI guidance. This design change package has been implemented in Unit 1 and will be implemented in Unit 2 during Refueling Outage 2RE12. The licensee has also changed the maintenance and surveillance procedures to reflect EPRI guidance on the material condition of the trip hook and latch-up lever as well as visual acceptance criteria on acceptable engagement between the trip hook and latch-up lever. AFW Pump 14 was last run successfully on November 16, 2006. On December 14, 2006, the licensee completed repairs/adjustments on the impact distance and successfully performed the surveillance test on AFW Pump 14. The licensee has entered this event into their CAP as CR 06-16805 and -17091. Pending the licensee's completion of the sensitivity analysis to electrical auxiliary building temperature during a loss of HVAC (largest contributor to risk for a loss of a turbine-driven AFW pump), LER submittal, and the NRC's review of the circumstances and the evaluation, this issue is considered as an Unresolved Item (URI) 05000498/2007002-02, "Inadequate Procedure Leads to Inoperable Turbine-Driven AFW Pump for Longer than TSs Allowed Outage Time."

4OA3 Follow-up of Events and Notices of Enforcement Discretion (71153)

.1 (Closed) LER 05000498/2006-005-00, "Quadrant Power Tilt Ratio Surveillance Not Performed as Required by TS 3.3.1 Action 2"

On November 6, 2006, Unit 1 was operating at 78 percent RTP when it was discovered that the TS actions with one power range nuclear instrument out of service had not been performed as required. TS 3.3.1, Action 2, requires either: (1) thermal power to be restricted to less than 75 percent RTP and the power range neutron flux trip setpoints be reduced to less than or equal to 85 percent RTP within 4 hours, or (2) monitor quadrant power tilt ratio once per 12 hours per TS 4.2.4.2. Neither of these actions was performed and the 12-hour requirement elapsed before the condition was discovered. Upon subsequent review, no core operating limits were exceeded. The LER was reviewed by the inspectors and this event was determined to be a minor violation of TS 3.3.1. The issue did not screen as more than minor since no core operating limits were exceeded and the subsequent surveillance was successful with no issues. The licensee documented the event in CR 06-15407. This LER is closed.

.2 (Closed) LER 05000498/2006-006-00, "Inoperable AFW Flow Instrumentation"

On December 17, 2006, the TS allowed outage time for the Unit 1 AFW Train D flow instrumentation was exceeded. The instrumentation was lost due to an electrical transient to the qualified display processing system (QDPS) caused by a manufacturing defect in a capacitor in the inverter providing power to the QDPS. The licensee had previously determined that the QDPS could not be repaired within the TS limit and

requested and was granted a Notice of Enforcement Discretion (NOED) on December 17, 2006. The licensee completed repairs and declared the system operable on December 17, 2006, see Section 4OA5 for additional information. The LER was reviewed by the inspectors and no findings of significance were identified. The licensee documented the event in CR 06-16998 and 07-321. This LER is closed.

.3 (Closed) LER 05000499/2006-001-00, "Safety Injection Train Inoperable Longer than Allowed Under TSS"

The inspectors reviewed LER 05000499/2006-001-00 to verify that the cause of HHSI Train A exceeding its TS allowed outage time was identified and that corrective actions were appropriate. See Section 4OA5 for additional information on how the event occurred, was dispositioned, and what enforcement actions were taken. This LER is closed.

.4 Follow-up of Fire in the Unit 2 MAB 60' Elevation

a. Inspection Scope

The inspectors: (1) reviewed operator logs, plant computer data, and/or strip charts for the below listed event to evaluate operator performance in coping with nonroutine events and transients; (2) verified that operator actions were in accordance with the response required by plant procedures and training; and (3) verified that the licensee has identified and implemented appropriate corrective actions associated with personnel performance problems that occurred during the nonroutine evolutions sampled.

- January 10, 2007, Unit 2, fire in the protected area in nonsafety-related equipment. The fire was in the MAB 60' elevation in a heater control panel which supplied power to a duct heater for the locker room and office area HVAC system. The feeder breaker for the control panel was opened and the fire/smoke quickly extinguished and started to dissipate. The total time from identification to the fire being under control was 14 minutes, since this is less than 15 minutes, the licensee was not required to declare an Unusual Event. The damage was limited to the internals of the control panel and was extensive. The control panel itself was not damaged and the potential to impact other equipment in the area was negligible. The fire is believed to have been caused by a high resistance connection on the line side of a fuse block for one of the heaters. The licensee has inspected the identical component in Unit 1 and did not identify any anomalies. The licensee has placed a plan of action together to systematically inspect all panels of this type in accordance with CR 07-359.

Documents reviewed by the inspectors included:

- CRs 07-359, -384, and -1692
- Procedure 0POP04-ZO-0008, "Fire/Explosion," Revision 12
- Procedure 0ERP01-ZV-IN01, "Emergency Classification," Revision 7

b. Findings

No findings of significance were identified.

4OA5 Other Activities

.1 (Closed) URI 05000499/2006005-02, "Unit 2 HHSI Pump 2A Repair and Testing"

a. Inspection Scope

This URI was opened before the licensee had been able to complete the root cause determination for the failure mechanism of the HHSI Pump 2A. Additionally, as a result of the inoperability of the HHSI Train A for greater than its allowed outage time, the licensee submitted LER 05000499/2006-001-00, see Section 4OA3. The inspectors reviewed the LER, corrective action documents, Unit 2 station operating logs, plant procedures, and licensing memoranda. This review verified that the cause of the failure of the HHSI Pump 2A was identified and corrective actions were appropriate. The inspectors also reviewed the corrective action database for other past failures related to the HHSI system. Issues identified from this review are detailed below. This URI is closed.

b. Findings

Introduction. The inspectors reviewed a self-revealing Green noncited violation (NCV) of TS 6.8.1.a for the failure to follow Procedures STI 32013741, "Conduct of Maintenance," dated May 15, 2006; and 0PMP04-SI-0002, "High Head Safety Injection Pump Maintenance."

Description. On November 27, 2006, the Unit 2 emergency core cooling system (ECCS) Train A was declared inoperable to perform the planned maintenance activity of replacing the mechanical seal on the HHSI Pump 2A. Replacing the mechanical seal involves partially disassembling the pump and is governed by Procedure 0PMP04-SI-0002, "High Head Safety Injection Pump Maintenance," Revision 10. Additionally, Procedure STI 32013741, "Conduct of Maintenance," dated May 15, 2006, is also applicable to all maintenance activities.

During the disassembly, mechanical maintenance craftsmen encountered several clearance (tolerance) problems trying to remove various parts of the pump. They noted that, due to oxidation, several components had become "interference" fits instead of "slip" fits, including the spacer, the pump half-coupling, and the lateral adjusting plate. After moving the lateral adjusting plate and manipulations with a crowbar and screwdriver, the craftsmen were able to remove the spacer; however, the half-coupling remained stuck. Instead of recognizing the unexpected condition of the stuck half-coupling as adverse and stopping work to involve more management, the craftsmen and their immediate supervisor continued to troubleshoot outside of the prescribed procedural steps. They decided to use hydraulic force to remove the half-coupling and consequently, applied unnecessary hydraulic force to the half-coupling. The use of this force was not in accordance with the procedures and the craftsmen applied the force

without understanding the potential hazards and without communicating to appropriate management (improper maintenance practice).

The craftsmen applied the hydraulic power by placing fabricated plates on the top of the mechanical seal housing plate to provide protection, and then "port-a-power" hydraulic tools were placed on them on opposite sides of the pump shaft. Force was applied to the underside of the half-coupling three to four times before the coupling became unstuck, there was no attempt made to determine the amount of force applied. Popping noises were noted during each attempt. At this point, the mechanical seal was replaced. During reassembly, the craftsmen again encountered problems reinstalling parts of the pump due to insufficient clearances. The craftsmen lifted and dropped the rotating element to see if it would drop freely, after removing the seal package, to ensure proper clearance for the spacer. It did not drop freely and hydraulic force was used again, this time applying a downward force on the pump shaft. The day shift craftsmen turned the work over to the night shift craftsmen who then attempted to reinstall the spacer. After determining there was insufficient clearance, the night shift craftsmen made the decision to stop work because the procedure did not provide guidance on pump reassembly with the use of a "port-a-power" hydraulic tool. On November 30, 2006, the pump vendor was contacted and a one time change was made to allowing machining of some parts in order to achieve proper clearance because enough clearance still did not exist, the licensee held a meeting and a troubleshooting plan was developed on December 1, 2006. The plan called for refilling the pump casing with water and checking for shaft rotation, this too was unsuccessful. Therefore, the decision was made to overhaul the entire pump by replacing the rotating element.

As a result of using hydraulic force, the pump was damaged and the licensee requested enforcement discretion to prevent a required shutdown since the repairs would take longer than the remaining TS allowed outage time. The NRC granted the NOED on December 6, 2006, for more information see NOED 06-4-001 (ML063400205). The licensee returned the ECCS Train A to operable status approximately 10 days after declaring it inoperable, the pump was successfully reassembled and returned to service on December 7, 2006.

Additionally, a similar event occurred on January 19, 2007, on the Unit 2 spent fuel cooling Pump 2B. The craftsmen failed to correctly follow maintenance of Procedure 0PMP04-C-001, "Spent Fuel Pit Cooling Pump Maintenance," Revision 13, and Conduct of Maintenance. The craftsmen failed to correctly install the inboard and outboard mechanical seals. Even though the procedure directed the seals to be set to a certain dimension the craftsmen failed to set the correct dimension because of being unfamiliar with how to set these types of seals. This resulted in the seals leaking and having to be replaced again. The licensee has attributed this error to human performance, failure to follow procedure (improper maintenance practice), and has captured this event in their CAP as CR 07-007. Both of these events demonstrate improper maintenance practices as outlined in the Conduct of Maintenance procedure, specifically ". . . . If at any time a conflict arises, unexpected conditions develop, the job instructions are unclear, or the work cannot be performed as planned, stop the job. Inform the Supervisor and assist with action to resolve the conflict."

Analysis. The inspectors determined that the failure to follow the Conduct of Maintenance procedure, stopping the job when unexpected conditions developed, was a performance deficiency. The inspectors determined that the violation was more than minor because it was associated with the mitigating systems cornerstone attributes of equipment and human performance, and it affected the cornerstone objective to ensure the availability of systems that respond to initiating events to prevent undesirable consequences. Furthermore, the performance deficiency would have resulted in a TS shutdown if not for the NOED. The inspectors evaluated the violation using Inspection Manual Chapter 0609, "Significance Determination Process," Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," Phase 1 screening, and determined that it resulted in Phase 2 analysis due to a single train inoperable for longer than its TS allowed outage time. The Phase 2 analysis screened as Green. Additionally, because the NOED was granted before the ECCS TS completion time (7 days) had elapsed, the additional ECCS Train A outage time (approximately 3 days) could not be used in the determination of significance for the performance deficiency, assessed as part of the NOED. This finding also had human performance crosscutting aspects associated with work practices in that the licensee did not clearly define and effectively communicate expectations regarding procedural compliance and personnel following procedures.

Enforcement. TS Section 6.8.1.a requires that written procedures be established, implemented, and maintained covering the activities specified in Appendix A, "Typical Procedures for Pressurized Water Reactors and Boiling Water Reactors," of Regulatory Guide 1.33, "Quality Assurance Program Requirements (Operation)," dated February 1978. Regulatory Guide 1.33, Appendix A, Section 9.a, states that maintenance activities that can affect the performance of safety-related equipment should be properly preplanned and performed in accordance with written procedures, documented instructions, or drawings appropriate to the circumstances. Procedure STI 32013741, "Conduct of Maintenance," dated May 15, 2006, states, in part, ". . . . If at any time a conflict arises, unexpected conditions develop, the job instructions are unclear, or the work cannot be performed as planned, stop the job." Contrary to this, on November 27, 2006, mechanical maintenance did not stop the job when unexpected conditions developed. Specifically, mechanical maintenance craftsmen used unnecessary hydraulic force on the HHSI Pump 2A. Since this violation is of very low safety significance (Green) and it has been entered into the licensee's CAP as CR 06-16436, this violation is being treated as an NCV consistent with Section VI.A of the Enforcement Policy: NCV 05000499/2007002-3, "Improper Maintenance Results in Damage to a HHSI Pump Resulting in NOED(EA-07-068)."

.2 (Closed) URI 05000498/2006005-03, "Unit 1 Capacitor Failure in Inverter 1202 Affecting QDPS"

This URI was opened before the licensee had been able to complete the root cause determination for the failure mechanism associated with the electrical transient. Additionally, as a result of the inoperability of the AFW flow instrumentation for greater than its allowed outage time, the licensee submitted LER 05000498/2006-06-0, see Section 4OA3. The inspectors reviewed the LER, corrective action documents, Unit 1 station operating logs, plant procedures, and licensing memoranda. This review verified that the cause of the failure of the capacitor in Inverter 1202 was identified and

corrective actions were appropriate. The inspectors also reviewed the corrective action database for other past failures related to Inverter 1202. The inspectors reviewed a similar event that occurred on the same inverter in December 2005 and determined that, while the failure of the capacitor was similar in nature, the licensee took effective measures to try to prevent reoccurrence of the condition. As a result of the 2005 event, the licensee and the vendor issued a 10 CFR Part 21 on the capacitors and the vendor changed its manufacturing process. The licensee also changed out all the suspect capacitors with newly fabricated ones. As a result of these actions, the licensee did not foresee the exact same failure to be plausible. This URI is closed.

4OA6 Meetings, Including Exit

On April 12, 2007, the inspectors presented the inspection results of the resident report inspection to Mr. Ed D. Halpin, Site Vice President, and other members of the licensee's management staff at the conclusion of the inspection. The licensee acknowledged the findings presented. The inspectors noted that while proprietary information was reviewed, none would be included in this report.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

R. Aguilera, Radiological Manager, Radiological Engineering
T. Bowman, General Manager Oversight
W. Bullard, Manager, Health Physics
K. Coates, Plant General Manager
D. Cobb, STP Employee Concerns Program (EAP) Manager
J. Cook, Process Improvement Leadership Team
R. Engen, Manager, Maintenance Engineering
T. Frawley, Manager, Performance Improvement
R. Gangluff, Manager, Chemistry, Environmental and Health Physics
E. Halpin, Site Vice President
W. Harrison, Senior Engineer, Quality and Licensing
S. Head, Manager, Licensing
G. Hildebrandt, Manager, Operations Unit 2
K. House, Manager, Design Engineering
G. Janak, Manager, Operations Unit 1
W. Jump, Manager, Work Management
A. McGalliard, Supervisor, Plant Engineering
J. Mertink, Manager, Operations
H. Murray, Manager, Maintenance
M. Murray, Manager, System Engineering
L. Peter, Manager, Alliances and Plant Investment
G. Powell, Manager, Site Engineering
D. Rencurrel, Vice President, Engineering
M. Ruvalcaba, Supervisor, Systems Engineering
R. Savage, Staff Specialist, Licensing
J. Sheppard, President and CEO
K. Taplett, Senior Engineer, Licensing
S. Thomas, Process Improvement Leadership Team
T. Walker, Manager, Quality

NRC Personnel

C. Johnson, Chief, Division of Reactor Projects, Branch A

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

05000498/2007002-02	URI	Inadequate Procedure Leads to Inoperable Turbine-Driven AFW Pump for Longer than TSs Allowed Outage Time (Section 4OA2)
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Opened and Closed

05000499/2007002-01	FIN	Human Performance Error Hanging an Equipment Clearance Order (Section 1R13)
05000499/2007002-03	NCV	Improper Maintenance Results in Damage to a HHSI Pump Resulting in NOED (EA-07-068) (Section 4OA5)

Closed

05000499/2006005-02	URI	Unit 2 HHSI Pump 2A Repair and Testing (Section 4OA5)
05000498/2006005-03	URI	Unit 1 Capacitor Failure in Inverter 1202 Affecting QDPS (Section 4OA5)
05000498/2006-005-00	LER	Quadrant Power Tilt Ratio Surveillance Not Performed as Required by TS 3.3.1 Action 2 (Section 4OA3)
05000498/2006-006-00	LER	Inoperable AFW Flow Instrumentation (Section 4OA3)
05000499/2006-001-00	LER	Safety Injection Train Inoperable Longer than Allowed under TSs (Section 4OA3)

Discussed

None

LIST OF DOCUMENTS REVIEWED

In addition to the documents referred to 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:

Section 1R12: Maintenance Effectiveness

CRs

06-8564	06-17091	07-384	07-3757
06-16805	07-359	07-1692	

Procedures

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
0POP04-ZO-0008	Fire/Explosion	12

System Health Reports

Auxiliary Feedwater (AF), First Quarter 2005 through Fourth Quarter 2006
Fire Protection (FP), First Quarter 2006 through Fourth Quarter 2006
120 VAC Class and Non-Class (VA, VC), First Quarter 2006 through Fourth Quarter 2006
480 VAC Load Centers (PE, PL), First Quarter 2006 through Fourth Quarter 2006

Section 1R19: Postmaintenance Testing

CRs

06-16449	07-829	07-1007
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Miscellaneous

Letter from NRC to STP, "South Texas Project, Unit 1 - Issuance of Emergency Amendment RE: One-Time Change to Loss of Power Instrumentation Technical Specifications (TAC MD3852)," dated January 11, 2007

Work Activity Risk Plan of Action Evaluation 1626

Work Order 463595, "4160 VAC SWGR E1A"

Procedures

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
0PMP04-FC-0001	Spent Fuel Pit Cooling Pump Maintenance	13
0PMP04-FC-0001	Spent Fuel Pit Cooling Pump Maintenance	14
0PMP04-FC-0001	Spent Fuel Pit Cooling Pump Maintenance	15

Section 1R20: Refuelling and Other Outage Activities (71111.20)

Procedures

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
0PMP02-ZG-0003	Inspection of Cranes, Hoists, and Monorail Systems	26
0POP03-ZA-0069	Control of Heavy Loads	21

Section 1R23: Temporary Plant Modifications

CRs

06-8094	06-11471	06-17095	07-85
06-8423	06-16098	07-35	07-143
06-10972			

Miscellaneous

Design Change Package 07-35-6, "Disposition of RCB Personnel Air Lock (PAL) Door Seal Non Conforming Condition"

Procedure 0PSP11-XC-0008, "LLRT Penetration M-90 Personnel Airlock Door Seals,"
Revision 13, performed January 5, 2007

Procedure 0PSP11-XC-0009, "Personnel Airlock Pneumatic Seal System Pressure Drop Test,"
Revision 12, performed January 6, 2007

Section 4OA2: Identification and Resolution of Problems

CRs

03-12209	06-8564	07-726	07-1302
04-6242	06-15293	07-925	07-2529
05-13610	06-16805	07-1288	07-2562
05-15185	06-17091		

Miscellaneous

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
VTD-T147-0001	Terry Steam Turbine Manual	2
VTD-T147-0005	Terry Turbine Controls Guide	0
VTD-T147-0008	Terry Turbine Maintenance Guide, AFW Application	2
VTD-G153-0007	Disassembly Instructions for the Auxiliary Feedwater Terry Turbine Trip & Throttle Valve	1
5S149MB9016	Design Basis Document - Auxiliary Feedwater System	5

Plant Modifications

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
PCF 179428A	Proper setting dimensions for the AF Pump #24 trip linkage impact gap	0

PCF 169758B	The mechanical overspeed trip linkage impact gap is less than the vendor requirement (Use-As-Is)	0
DCP 05-13610-2	Standardize the impact space for the #14 and #24 Auxiliary Feedwater pumps mechanical overspeed trip linkage connection lever	0
DCP05-13610-9	Incorporate the optimal space data for the #14 and #24 Auxiliary Feedwater pumps mechanical overspeed trip linkage connector lever	0

Procedures

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
0POP02-AF-0001	Auxiliary Feedwater	23
0POP02-AF-0002	Resetting Auxiliary Feedwater Pump 14(24) Mechanical Overspeed Trip Device	3
0PMP04-AF-0002	Auxiliary Feedwater Pump Turbine Maintenance	27
0PMP04-AF-0002	Auxiliary Feedwater Pump Turbine Maintenance	28
0PMP04-AF-0003	Auxiliary Feedwater Pump Turbine Throttle Valve Maintenance	8
0PMP04-AF-0003	Auxiliary Feedwater Pump Turbine Throttle Valve Maintenance	9
0PMP04-AF-0003	Auxiliary Feedwater Pump Turbine Throttle Valve Maintenance	10
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LIST OF ACRONYMS

AFW	auxiliary feedwater
CAP	corrective action program
CFR	<i>Code of Federal Regulations</i>
ECCS	emergency core cooling system
ECW	essential cooling water
HHSI	high head safety injection
HVAC	heating ventilation, and air conditioning
LER	Licensing Event Report
MAB	mechanical auxiliary building
NCV	noncited violation
NOED	Notice of Enforcement Discretion
QDPS	qualified display processing system
RTP	rated thermal power
SSC	structure, system, and component
TS	Technical Specification
UFSAR	Updated Final Safety Analysis
URI	unresolved item
WAN	work authorization