



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION IV  
612 EAST LAMAR BLVD, SUITE 400  
ARLINGTON, TEXAS 76011-4125

January 28, 2010

Mr. Edward D. Halpin,  
President and Chief Executive Officer  
STP Nuclear Operating Company  
P.O. Box 289  
Wadsworth, TX 77483

Subject: SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION - NRC INTEGRATED  
INSPECTION REPORT 05000498/2009005 AND 05000499/2009005

Dear Mr. Halpin:

On December 31, 2009, 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 inspection report documents the inspection findings, which were discussed on January 7, 2010, with Mr. K. Richards, Senior Vice President and Assistant to the Chief Executive Officer, and other members of your staff.

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

This report documents one self-revealing finding of very low safety significance (Green). This finding was determined to involve a violation of NRC requirements. Additionally, a licensee-identified violation, which was determined to be of very low safety significance, is listed in this report. However, because of the very low safety significance and because they are entered into your corrective action program, the NRC is treating these findings as noncited violations, consistent with Section VI.A.1 of the NRC Enforcement Policy. If you contest the violations or the significance of the noncited violations, 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, D.C. 20555-0001, with copies to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region IV, 612 E. Lamar Blvd, Suite 400, Arlington, Texas, 76011-4125; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001; and the NRC Resident Inspector at the South Texas Project Electric Generating Station, Units 1 and 2, facility. In addition, if you disagree with the characterization of any finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region IV, and the NRC Resident Inspector at

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the South Texas Project Electric Generating Station, Units 1 and 2, facility. The information you provide will be considered in accordance with Inspection Manual Chapter 0305.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, and its enclosure, will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records 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/**

Wayne Walker, 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 05000498/2009005 and 05000499/2009005  
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Publicly Avail	X Yes <input type="checkbox"/> No	Sensitive	<input type="checkbox"/> Yes X No	Sens. Type Initials	wcw
RIV:RI:DRP/A	SRI:DRP/A	SPE:DRP/PBA	C:DRS/PSB2	C:DRS/OB	
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**U.S. NUCLEAR REGULATORY COMMISSION**

**REGION IV**

Docket: 05000498, 05000499

License: NPF-76, NPF-80

Report: 05000498/2009005 and 05000499/2009005

Licensee: STP Nuclear Operating Company

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

Location: FM521 - 8 miles west of Wadsworth  
Wadsworth, Texas 77483

Dates: October 4, through December 31, 2009

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Approved By: Wayne Walker, Chief, Project Branch A  
Division of Reactor Projects

## SUMMARY OF FINDINGS

IR 05000498/2009005, 05000499/2009005; 10/04/2009 – 12/31/2009; South Texas Project Electric Generating Station, Units 1 and 2, Integrated Resident and Regional Report; Operability Evaluations.

The report covered a 3-month period of inspection by resident inspectors and announced baseline inspections by regional based inspectors. One Green noncited violation of very low safety significance was identified. 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 review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

### **A. NRC-Identified Findings and Self-Revealing Findings**

Cornerstone: Initiating Events

- Green. The inspectors reviewed a self-revealing noncited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for an inadequate maintenance procedure that failed to describe the steps for correctly restoring auxiliary process Cabinet D1. On September 21, 2009, instrumentation and controls personnel performed maintenance on auxiliary process Cabinet D1 but failed to reset the processor during restoration. As a result, the reactor coolant system temperature data output to the cold overpressure mitigation system was set to zero. On September 26, 2009, when Unit 2 was in the process of heating up in Mode 4, the automatic function of the cold overpressure mitigation system prematurely initiated and caused alarms in the control room. The actual conditions did not warrant overpressure mitigation; therefore, operations personnel isolated the pressurizer train A power operated relief valve to prevent the potential rapid depressurization of the reactor coolant system. The licensee captured this issue as Condition Report 09-14961.

The finding was more than minor because it affected the procedure quality attribute of the Initiating Events Cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations because it caused the operators to change the plant configuration by isolating one of two pressurizer power operated relief valves to prevent an initiating event. Using Inspection Manual Chapter 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," this finding screened to a Phase 2 analysis because it was a primary system loss-of-coolant accident initiator contributor that assuming worst case degradation would have resulted in exceeding the technical specification limit for reactor coolant system leakage. The Phase 2 analysis identified that the most significant contribution to risk was a potential failure of the pressurizer power operated relief valve to open. Since the potential failure of the pressurizer power operated relief valve to open did not exist for greater than 3 days and the redundant power operated relief valve

was unaffected, the finding was determined to be of very low safety significance. In addition, this finding had a crosscutting aspect associated with problem identification and resolution because the licensee did not incorporate operating experience, including the vendor recommendations for restoration of auxiliary process cabinets, into plant procedures to support plant safety [P.2(b)] (Section 1R15).

**B. Licensee-Identified Violations**

A violation of very low safety significance, which was identified by the licensee, was reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. The violation and corrective action tracking numbers (condition report numbers) are listed in Section 4OA7.

## REPORT DETAILS

### Summary of Plant Status

Unit 1 began the inspection period in Refueling Outage 1RE15 which commenced on September 29, 2009. Unit 1 commenced reactor start up, went critical, and closed the main generator output breaker to complete Refueling Outage 1RE15 on November 18, 2009. On November 23, 2009, Unit 1 achieved 100 percent rated thermal power and remained there for the remainder of the inspection period.

Unit 2 began the inspection period at 100 percent rated thermal power and remained there for the remainder of the inspection period.

### 1. REACTOR SAFETY

#### Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, and Emergency Preparedness

#### 1R01 Adverse Weather Protection (71111.01)

##### .1 Readiness for Seasonal Extreme Weather Conditions

##### a. Inspection Scope

The inspectors performed a review of the licensee's adverse weather procedures for seasonal extremes (e.g., extreme high temperatures, extreme low temperatures, or hurricane season preparations). The inspectors: verified that weather-related equipment deficiencies identified during the previous year were corrected prior to the onset of seasonal extremes; and evaluated the implementation of the adverse weather preparation procedures and compensatory measures for the affected conditions before the onset of, and during, the adverse weather conditions.

During the inspection, the inspectors focused on plant-specific design features and the licensee's procedures used to mitigate or respond to adverse weather conditions. Additionally, the inspectors reviewed the Updated Final Safety Analysis Report and performance requirements for systems selected for inspection, and verified that operator actions were appropriate as specified by plant-specific procedures. Specific documents reviewed during this inspection are listed in the attachment. The inspectors also reviewed corrective action program items to verify that the licensee was identifying adverse weather issues at an appropriate threshold and entering them into their corrective action program in accordance with station corrective action procedures. The inspectors' reviews focused specifically on the following plant systems:

- October 29, 2009, Units 1 and 2, main steam and feedwater isolation valves, auxiliary feedwater trains A, B, C, and D, and standby diesel generator trains A, B, and C

These activities constitute completion of one readiness for seasonal adverse weather sample as defined in Inspection Procedure 71111.01-05.

b. Findings

No findings of significance were identified.

.2 Readiness for Impending Adverse Weather Conditions

a. Inspection Scope

When Hurricane Ida entered the Gulf of Mexico, the inspectors reviewed the licensee's overall preparations/protection for the expected weather conditions. On November 9, 2009, the inspectors walked down the auxiliary fuel oil storage tank, essential cooling water, and auxiliary feedwater systems because their safety-related functions could be affected or required as a result of high winds or tornado-generated missiles or the loss of offsite power. The inspectors evaluated the licensee staff's preparations against the site's procedures and determined that the staff's actions were adequate. During the inspection, the inspectors focused on plant-specific design features and the licensee's procedures used to respond to specified adverse weather conditions. The inspectors also toured the plant grounds to look for any loose debris that could become missiles during a tornado. The inspectors evaluated operator staffing and accessibility of controls and indications for those systems required to control the plant. Additionally, the inspectors reviewed the UFSAR and performance requirements for systems selected for inspection, and verified that operator actions were appropriate as specified by plant-specific procedures. The inspectors also reviewed a sample of corrective action program items to verify that the licensee identified adverse weather issues at an appropriate threshold and dispositioned them through the corrective action program in accordance with station corrective action procedures. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one readiness for impending adverse weather condition sample as defined in Inspection Procedure 71111.01-05.

b. Findings

No findings of significance were identified.

**1R04 Equipment Alignments (71111.04)**

.1 Partial Walkdown

a. Inspection Scope

The inspectors performed partial system walkdowns of the following risk-significant systems:

- October 22, 2009, Unit 2, essential chilled water system train A
- November 17, 2009, Unit 2, component cooling water train C
- December 28, 2009, Unit 1, component cooling water train B

The inspectors selected these systems based on their risk significance relative to the reactor safety cornerstones at the time they were inspected. The inspectors attempted to identify any discrepancies that could affect the function of the system, and, therefore, potentially increase risk. The inspectors reviewed applicable operating procedures, system diagrams, UFSAR, technical specification requirements, administrative technical specifications, outstanding work orders, condition reports, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have rendered the systems incapable of performing their intended functions. The inspectors also walked down accessible portions of the systems to verify system components and support equipment were aligned correctly and operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no obvious deficiencies. The inspectors also verified that the licensee had properly identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers and entered them into the corrective action program with the appropriate significance characterization. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of three partial system walkdown samples as defined in Inspection Procedure 71111.04-05.

b. Findings

No findings of significance were identified.

.2 Complete Walkdown

a. Inspection Scope

On November 16, 2009, the inspectors performed a complete system alignment inspection of the Unit 2 essential cooling water system train C to verify the functional capability of the system. The inspectors selected this system because it was considered both safety significant and risk significant in the licensee's probabilistic risk assessment. The inspectors walked down the system to review mechanical and electrical equipment line-ups, electrical power availability, system pressure and temperature indications, as appropriate, component labeling, component lubrication, component and equipment cooling, hangers and supports, operability of support systems, and to ensure that ancillary equipment or debris did not interfere with equipment operation. The inspectors reviewed a sample of past and outstanding work orders to determine whether any deficiencies significantly affected the system function. In addition, the inspectors reviewed the corrective action program database to ensure that system equipment-alignment problems were being identified and appropriately resolved. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one complete system walkdown sample as defined in Inspection Procedure 71111.04-05.

b. Findings

No findings of significance were identified.

**1R05 Fire Protection (71111.05)**

.1 Quarterly Fire Inspection Tours

a. Inspection Scope

The inspectors conducted fire protection walkdowns that were focused on availability, accessibility, and the condition of firefighting equipment in the following risk-significant plant areas:

- October 29, 2009, Unit 1, safety injection and containment spray trains A, B, and C (Fire Zones Z305-Z307)
- October 29, 2009, Unit 1, electrical penetration area trains A, B, and C (Fire Zones Z006, Z031, and Z046)
- October 29, 2009, Unit 2, safety injection and containment spray trains A, B, and C (Fire Zones Z305-Z307)
- October 29, 2009, Unit 2, standby diesel generators 21, 22, and 23 (Fire Zones Z500-Z502)

The inspectors reviewed areas to assess if licensee personnel had implemented a fire protection program that adequately controlled combustibles and ignition sources within the plant; effectively maintained fire detection and suppression capability; maintained passive fire protection features in sound material condition; and had implemented adequate compensatory measures for out-of-service, degraded or inoperable fire protection equipment, systems, or features, in accordance with the licensee's fire plan. The inspectors selected fire areas based on their overall contribution to internal fire risk as documented in the plant's Individual Plant Examination of External Events with later additional insights, their potential to affect equipment that could initiate or mitigate a plant transient, or their impact on the plant's ability to respond to a security event. Using the documents listed in the attachment, the inspectors verified that fire hoses and extinguishers were in their designated locations and available for immediate use; that fire detectors and sprinklers were unobstructed; that transient material loading was within the analyzed limits; and fire doors, dampers, and penetration seals appeared to be in satisfactory condition. The inspectors also verified that minor issues identified during the inspection were entered into the licensee's corrective action program. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of four quarterly fire protection inspection samples as defined in Inspection Procedure 71111.05-05.

b. Findings

No findings of significance were identified.

**1R06 Flood Protection Measures (71111.06)**

.1 Internal Flooding

a. Inspection Scope

The inspectors reviewed the UFSAR, the flooding analysis, and plant procedures to assess susceptibilities involving internal flooding; reviewed the corrective action program to determine if licensee personnel identified and corrected flooding problems; inspected underground bunkers/manholes to verify the adequacy of sump pumps, level alarm circuits, cable splices subject to submergence, and drainage for bunkers/manholes; and verified that operator actions for coping with flooding can reasonably achieve the desired outcomes. The inspectors also walked down the area listed below to verify the adequacy of equipment seals located below the flood line, floor and wall penetration seals, watertight door seals, common drain lines and sumps, sump pumps, level alarms, and control circuits, and temporary or removable flood barriers. Specific documents reviewed during this inspection are listed in the attachment.

- November 18, 2009, Unit 2, mechanical auxiliary building 10 foot elevation, essential chilled water and component cooling water, trains A, B, and C

These activities constitute completion of one internal flood protection measure inspection sample as defined in Inspection Procedure 71111.06-05.

b. Findings

No findings of significance were identified.

.2 Underground Bunkers/Manholes

a. Inspection Scope

The inspectors reviewed the UFSAR, the flooding analysis, and plant procedures to assess susceptibilities involving underground bunkers/manholes; reviewed the corrective action program to determine if licensee personnel identified and corrected flooding problems; inspected underground bunkers/manholes to verify the adequacy of sump pumps, level alarm circuits, cable splices subject to submergence, and drainage for bunkers/manholes; and verified that operator actions for coping with flooding can reasonably achieve the desired outcomes. The inspectors also walked down the areas listed below to verify the adequacy of equipment seals located below the flood line, floor and wall penetration seals, watertight door seals, common drain lines and sumps, sump pumps, level alarms, and control circuits, and temporary or removable flood barriers. Specific documents reviewed during this inspection are listed in the attachment.

- December 9, 2009, underground Bunkers/Manholes C0XYABKEM51 and C0XYABKEM52, which contain essential cooling water Unit 1 train C cables; and Unit 2 auxiliary feedwater storage tank pits

These activities constitute completion of one underground bunker/manholes flood protection measures inspection sample as defined in Inspection Procedure 71111.06-05.

b. Findings

No findings of significance were identified.

**1R08 In-service Inspection Activities (71111.08)**

Completion of Sections .1 through .5, below, constitutes completion of one sample as defined in Inspection Procedure 71111.08-05.

.1 Inspection Activities Other Than Steam Generator Tube Inspection, Pressurized Water Reactor Vessel Upper Head Penetration Inspections, Boric Acid Corrosion Control (71111.08-02.01)

a. Inspection Scope

The inspectors observed and reviewed three types of nondestructive examination activities and three ASME Code class welds.

The inspectors directly observed the following nondestructive examinations:

<u>SYSTEM</u>	<u>WELD IDENTIFICATION</u>	<u>EXAMINATION TYPE</u>
Feedwater Train A	18 inch Pipe to Valve Weld (504280)	Ultrasonic
Feedwater Train A	18 inch Pipe to Valve Weld (500880)	Ultrasonic
Reactor Coolant System	Valve to Pipe Weld (103060)	Ultrasonic
Safety Injection Train B	Whip Restraining Pipe Lugs (707950)	Dye Penetrant
Essential Chilled Water Train C	Piping and Flange Welds (451500)	Visual (VT-3)

The inspectors reviewed records for the following nondestructive examinations:

<u>SYSTEM</u>	<u>IDENTIFICATION</u>	<u>EXAMINATION TYPE</u>
Reactor Vessel	Bottom Mounted Instrument Nozzle 1 (447000)	Ultrasonic, Eddy Current, Visual (VT-3)
Reactor Vessel	Bottom Mounted Instrument Nozzle 46 (446000)	Ultrasonic, Eddy Current, Visual (VT-3)
Reactor Vessel	Bottom Mounted Instrument Nozzle 12 (612000)	Ultrasonic, Eddy Current
Reactor Vessel	Bottom Mounted Instrument Nozzle 15 (615000)	Ultrasonic, Eddy Current
Reactor Vessel	Bottom Mounted Instrument Nozzle 20 (620000)	Ultrasonic, Eddy Current
Reactor Vessel	Reactor Pressure Vessel Loop A Outlet Nozzle To Safe End (106500)	Ultrasonic
Reactor Vessel	Reactor Pressure Vessel Loop B Outlet Nozzle To Safe End (107500)	Ultrasonic
Reactor Vessel	Reactor Pressure Vessel Loop C Outlet Nozzle To Safe End (108500)	Ultrasonic
Reactor Vessel	Reactor Pressure Vessel Loop D Outlet Nozzle To Safe End (109500)	Ultrasonic
Reactor Vessel	Safe End To Reactor Pressure Vessel Loop A Inlet Nozzle	Ultrasonic
Reactor Vessel	Safe End To Reactor Pressure Vessel Loop B Inlet Nozzle	Ultrasonic
Reactor Vessel	Safe End To Reactor Pressure Vessel Loop C Inlet Nozzle	Ultrasonic
Reactor Vessel	Safe End To Reactor Pressure Vessel Loop D Inlet Nozzle	Ultrasonic
Reactor Vessel	Reactor Pressure Vessel Loop B Outlet Nozzle To Safe End	Ultrasonic
Reactor Vessel	Reactor Pressure Vessel Loop C Outlet Nozzle To Safe End	Ultrasonic

<u>SYSTEM</u>	<u>IDENTIFICATION</u>	<u>EXAMINATION TYPE</u>
Reactor Vessel	Reactor Pressure Vessel Safe End To Pipe	Ultrasonic

During the review and observation of each examination, the inspectors verified that activities were performed in accordance with the ASME Code requirements and applicable procedures. The inspectors also verified that the qualifications of all nondestructive examination technicians performing the inspections were current.

The inspectors observed and reviewed records for the following welds:

<u>SYSTEM</u>	<u>WELD IDENTIFICATION</u>	<u>WELDING TYPE</u>
Chemical and Volume Control System	Replace Existing Valve With Newer Style Per Design Change Package 04-15252-4 (346352)	Gas Tungsten Arc Welding
Chemical and Volume Control System	Replace Existing Valve With Newer Style Per Design Change Package 04-15252-4 (346353)	Gas Tungsten Arc Welding
Auxiliary Feedwater D	Replace 6 inches x 8 inches Carbon Steel Pipe Like-For-Like Reducer on Line AF-2012-GA2 With Component (339737)	Gas Tungsten Arc Welding

The inspectors verified, by review, that the welding procedure specifications and the welders had been properly qualified in accordance with ASME Code, Section IX, requirements. The inspectors also verified, through observation and record review, that essential variables for the welding process were identified, recorded in the procedure qualification record, and formed the bases for qualification of the welding procedure specifications. Specific documents reviewed during this inspection are listed in the attachment.

These actions constitute completion of the requirements for Section 02.01.

b. Findings

No findings of significance were identified.

.2 Vessel Upper Head Penetration Inspection Activities (71111.08-02.02)

a. Inspection Scope

The Unit 1 reactor pressure vessel head is being replaced during this outage. The required inspections have been performed and documented in Section 4OA5.

b. Findings

No findings of significance were identified.

.3 Boric Acid Corrosion Control Inspection Activities (71111.08-02.03)

a. Inspection Scope

The inspectors evaluated the implementation of the licensee's boric acid corrosion control program for monitoring degradation of those systems that could be adversely affected by boric acid corrosion. The inspectors reviewed the documentation associated with the licensee's boric acid corrosion control walkdown as specified in Procedure OPGP03-ZE-0133, "Boric Acid Corrosion Control Program. Revision 2" The inspectors also reviewed the visual records of the components and equipment. The inspectors verified that the visual inspections emphasized locations where boric acid leaks could cause degradation of safety-significant components. The inspectors also verified that the engineering evaluations for those components where boric acid was identified gave assurance that the ASME Code wall thickness limits were properly maintained. The inspectors confirmed that the corrective actions performed for evidence of boric acid leaks were consistent with requirements of the ASME Code. Specific documents reviewed during this inspection are listed in the attachment.

These actions constitute completion of the requirements for Section 02.03.

b. Findings

No findings of significance were identified.

.4 Steam Generator Tube Inspection Activities (71111.08-02.04)

a. Inspection Scope

The licensee did not perform steam generator inspection activities this refueling outage.

b. Findings

No findings of significance were identified.

.5 Identification and Resolution of Problems (71111.08-02.05)

a. Inspection scope

The inspectors reviewed 10 condition reports which dealt with inservice inspection activities and found the corrective actions were appropriate. The specific condition reports reviewed are listed in the documents reviewed section. From this review, the inspectors concluded that the licensee has an appropriate threshold for entering issues into the corrective action program and has procedures that direct a root cause evaluation when necessary. The licensee also has an effective program for applying industry

operating experience. Specific documents reviewed during this inspection are listed in the attachment.

These actions constitute completion of the requirements of Section 02.05.

b. Findings

No findings of significance were identified.

**1R11 Licensed Operator Requalification Program (71111.11)**

.1 Quarterly Inspection

a. Inspection Scope

On October 21, 2009, the inspectors observed a crew of licensed operations personnel in the plant's simulator to verify that operator performance was adequate, evaluators were identifying and documenting crew performance problems and training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

- Licensed-operator performance
- Crew's clarity and formality of communications
- Crew's ability to take timely actions in the conservative direction
- Crew's prioritization, interpretation, and verification of annunciator alarms
- Crew's correct use and implementation of abnormal and emergency procedures
- Control board manipulations
- Oversight and direction from supervisors
- Crew's ability to identify and implement appropriate technical specification actions and emergency plan actions and notifications

The inspectors compared the crew's performance in these areas to pre-established operator action expectations and successful critical task completion requirements. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one quarterly licensed-operator requalification program sample as defined in Inspection Procedure 71111.11.

b. Findings

No findings of significance were identified.

## .2 Biennial Inspection

### a. Inspection Scope

The inspectors: (1) evaluated examination security measures and procedures for compliance with 10 CFR 55.49; (2) evaluated the licensee's sample plan of the written examinations for compliance with 10 CFR 55.59 and NUREG-1021, as referenced in the facility requalification program procedures; (3) evaluated each licensed operator's performance on the biennial written examination and the first and second annual operating tests against the Manual Chapter 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process," requirements; and (4) reviewed the maintenance of license conditions for compliance with 10 CFR 55.53 by reviewing facility records (medical and administrative), procedures, and tracking systems for licensed operator training, qualification, and watch standing.

Furthermore, the inspectors: (1) interviewed eight personnel, including operators, instructors/evaluators, and training supervisors regarding the policies and practices for administering requalification examinations; (2) observed the administration of two dynamic simulator scenarios to one requalification crew; and (3) observed four evaluators administer four job performance measures, including two in the control room simulator in a dynamic mode and two in the plant under simulated conditions.

The results of the biennial written examination included no individual failures. The operating exams given this year included 1 crew failure out of 15 crews and 1 job performance measure individual failure out of a total of 87 licensed operators. These results were assessed to determine the licensee's appraisal of operator performance and the feedback of performance analysis to the requalification training program. The inspectors interviewed members of the training department and operating crews to assess the responsiveness of the licensed-operator requalification program. The inspectors also observed the examination security maintenance for the operating tests given while the inspectors were onsite August 3 through August 6, 2009.

Additionally, the inspectors assessed South Texas Project's plant-referenced simulator for compliance with 10 CFR 55.46 using Baseline Inspection Procedure 71111.11 (Section 03.11). This assessment included the adequacy of the licensee's simulation facility for use in operator licensing examinations and for satisfying experience requirements as prescribed by 10 CFR 55.46. The inspectors reviewed a sample of simulator performance test records (transient tests, surveillance tests, malfunction tests, and scenario-based tests), simulator discrepancy report records, and processes for ensuring simulator fidelity commensurate with 10 CFR 55.46. The inspectors also interviewed members of the licensee's simulator configuration control group as part of this review.

### b. Findings

No findings of significance were identified.

## **1R12 Maintenance Effectiveness (71111.12)**

### a. Inspection Scope

The inspectors evaluated degraded performance issues involving the following risk-significant systems:

- November 24, 2009, Units 1 and 2, essential cooling water system
- December 16, 2009, Units 1 and 2, reactor coolant system
- December 30, 2009, Units 1 and 2, component cooling water system

The inspectors reviewed events such as where ineffective equipment maintenance has resulted in valid or invalid automatic actuations of engineered safeguards systems and independently verified the licensee's actions to address system performance or condition problems in terms of the following:

- Implementing appropriate work practices
- Identifying and addressing common cause failures
- Scoping of systems in accordance with 10 CFR 50.65(b)
- Characterizing system reliability issues for performance
- Charging unavailability for performance
- Trending key parameters for condition monitoring
- Ensuring proper classification in accordance with 10 CFR 50.65(a)(1) or (a)(2)
- Verifying appropriate performance criteria for structures, systems, and components classified as having an adequate demonstration of performance through preventive maintenance, as described in 10 CFR 50.65(a)(2), or as requiring the establishment of appropriate and adequate goals and corrective actions for systems classified as not having adequate performance, as described in 10 CFR 50.65(a)(1)

The inspectors assessed performance issues with respect to the reliability, availability, and condition monitoring of the system. In addition, the inspectors verified maintenance effectiveness issues were entered into the corrective action program with the appropriate significance characterization. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of three quarterly maintenance effectiveness samples as defined in Inspection Procedure 71111.12-05.

### b. Findings

No findings of significance were identified.

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

### a. Inspection Scope

The inspectors reviewed licensee personnel's evaluation and management of plant risk for the maintenance and emergent work activities affecting risk-significant and safety-related equipment listed below to verify that the appropriate risk assessments were performed prior to removing equipment for work:

- September 29 through November 23, 2009, Unit 1, activities associated with Refueling Outage 1RE15
- Week of December 14, 2009, Units 1 and 2, planned maintenance activities on Unit 1 train A and Unit 2 train D
- Week of December 21, 2009, Units 1 and 2, planned maintenance activities on Unit 1 train B and Unit 2 train A as well as emergent repairs on essential cooling water Unit 2 train C heat exchanger return vent valve crack

The inspectors selected these activities based on potential risk significance relative to the reactor safety cornerstones. As applicable for each activity, the inspectors verified that licensee personnel performed risk assessments as required by 10 CFR 50.65(a)(4) and that the assessments were accurate and complete. When licensee personnel performed emergent work, the inspectors verified that the licensee personnel promptly assessed and managed plant risk. The inspectors reviewed the scope of maintenance work, discussed the results of the assessment with the licensee's probabilistic risk analyst or shift technical advisor, and verified plant conditions were consistent with the risk assessment. The inspectors also reviewed the technical specification requirements and inspected portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of three maintenance risk assessments and emergent work control inspection samples as defined in Inspection Procedure 71111.13-05.

### b. Findings

No findings of significance were identified.

## **1R15 Operability Evaluations (71111.15)**

### a. Inspection Scope

The inspectors reviewed the following issues:

- October 22, 2009, Units 1 and 2, essential chiller's idle time extension from 6 to 10 days and then from 10 days to 14 days

- November 9, 2009, Units 1 and 2, inservice testing acceptance criteria for low head safety injection, high head safety injection, residual heat removal, and centrifugal charging pumps
- November 17, 2009, Unit 1, main steam isolation valve 1D blocked from closing
- December 11, 2009, Unit 2, cold overpressure mitigation system alert and actuation outputs degraded
- December 14, 2009, Unit 1, steam generator 1A main steam safety relief valve leakage

The inspectors selected these potential operability issues based on the risk significance of the associated components and systems. The inspectors evaluated the technical adequacy of the evaluations to ensure that technical specification operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the technical specifications and UFSAR to the licensee's evaluations, to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations. Additionally, the inspectors also reviewed a sampling of corrective action documents to verify that the licensee was identifying and correcting any deficiencies associated with operability evaluations. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of five operability evaluations inspection samples as defined in Inspection Procedure 71111.15-05.

b. Findings

Section 4OA7 describes a licensee-identified violation associated with the Unit 1 main steam isolation valve 1D.

Introduction. The inspectors reviewed a self-revealing noncited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for an inadequate maintenance procedure that failed to describe the steps for correctly restoring auxiliary process cabinet D1. On September 21, 2009, instrumentation and controls technicians failed to reset the processor during restoration of auxiliary process cabinet D1, which degraded the cold overpressure mitigation system.

Description. On September 21, 2009, instrumentation and controls technicians performed maintenance on the qualified display processing system auxiliary process cabinet D1 per requirements of Work Authorization 356484, Procedure 0PMP07-AM-0041, "QDPS APC-D1 Removal from Service," Revision 5, and preventative maintenance Work Order, IC-2-92000315, Revision 13. The auxiliary process cabinet was taken offline, the nonvolatile random access memory was

refreshed, and the time and date were updated. The technicians performing the maintenance were not aware of the requirement to depress the processor's reset button to restore the output signals to the correct values if the time and date had been changed by greater than 12 hours or if the processor had been powered off. This information is known from past experience obtained through discussions with the vendor and from vendor technical manuals, which were not incorporated into station procedures. As a result, the output signals of all four temperature instruments to the channel A cold overpressure mitigation system were set to zero.

On September 26, 2009, with Unit 2 in Mode 4 and heating up, operators received the train A cold overpressure mitigation system alert alarm at 7:08 p.m. Operations personnel entered the off-normal procedure, verified that the actual plant conditions did not warrant the alarm or any overpressure mitigation, and isolated the pressurizer train A power operated relief valve. The cold overpressure mitigation system compares the temperature outputs with the current reactor system pressure and automatically actuates to mitigate an overpressure condition. However, with the temperature instrument outputs failed to zero, the alarm came in at 485 psig in the reactor coolant system, instead of at 710 psig for the actual temperature of 250°F. As the plant continued to heat up, at 8:03 p.m., the control room received the pressurizer train A power operated relief valve open command alarm, however, operators had already isolated the valve which prevented the rapid depressurization of the reactor coolant system.

The inspectors reviewed the licensee's apparent cause evaluation, procedures, and interviewed licensee personnel. The inspectors determined that the procedures used to perform the maintenance were inadequate. Specifically, the station Procedure, OPMP07-AM-0041, and the Work Instructions, IC-2-92000315, used to perform this maintenance failed to provide detailed instructions about how to correctly restore the auxiliary process cabinet.

In addition, the inspectors noted that a similar event in the same auxiliary process cabinet occurred in 2008, however, the licensee's investigation failed to identify: (1) that skill of the craft was used to perform the restoration; (2) that procedures for restoring the auxiliary process cabinet did not contain the vendor recommendations; and (3) that the failure of the temperature output signals could have been caused by the cabinet being powered off. Instead, the licensee's conclusion in 2008 was a random electronic failure of the digital to analog circuit board. After evaluating the facts of the 2009 event, the licensee concluded that there was a high possibility that the 2008 event was also due to a failure to correctly restore the auxiliary process cabinet.

Analysis. The inspectors determined that an inadequate maintenance procedure for restoring auxiliary process cabinet D1 was a performance deficiency. The finding was more than minor because it affected the procedure quality attribute of the Initiating Events Cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations because it caused the operators to change the plant configuration by isolating one of two pressurizer power operated relief valves to prevent an initiating event. Using Inspection Manual Chapter 0609.04, "Phase 1 - Initial Screening and Characterization

of Findings,” this finding screened to a Phase 2 analysis because it was a primary system loss-of-coolant accident initiator contributor that assuming worst case degradation would have resulted in exceeding the technical specification limit for reactor coolant system leakage. The Phase 2 analysis identified that the most significant contribution to risk was a potential failure of the pressurizer power operated relief valve to open. Since the potential failure of the pressurizer power operated relief valve to open did not exist for greater than 3 days and the redundant power operated relief valve was unaffected, the finding was determined to be of very low safety significance. In addition, this finding had crosscutting aspects associated with problem identification and resolution because the licensee did not incorporate operating experience, including the vendor recommendations for restoration of auxiliary process cabinets, into plant procedures to support plant safety [P.2(b)].

Enforcement. Title 10 CFR Part 50, Appendix B, Criteria V, “Instructions, Procedures, and Drawings,” requires, in part, that activities affecting quality shall be prescribed by documented procedures of a type appropriate to the circumstances and shall include appropriate acceptance criteria. Contrary to this, on September 21, 2009, the licensee failed to prescribe adequate procedures for restoring auxiliary process cabinet D1. Specifically, Procedure 0PMP07-AM0041 was not appropriate to the circumstances because it did not contain instructions for the user to reset the system when performing maintenance on the qualified display processing system. Since this violation is of very low safety significance and was documented in the licensee’s corrective action program as Condition Report 09-14961, it is being treated as a noncited violation consistent with Section VI.A.1 of the NRC Enforcement Policy: NCV 05000499/2009005-01, “Inadequate Maintenance Procedure Degrades Cold Overpressure Mitigation System.”

## **1R18 Plant Modifications (71111.18)**

### Temporary Modifications

#### a. Inspection Scope

To verify that the safety functions of important safety systems were not degraded, on December 22, 2009, the inspectors reviewed a temporary modification identified as the Unit 1 replacement reactor vessel head control rod drive mechanism coil stack assembly modification.

The inspectors reviewed the temporary modification and the associated safety-evaluation screening against the system design bases documentation, including the UFSAR and the technical specifications, and verified that the modification did not adversely affect the system operability/availability. The inspectors also verified that the installation and restoration were consistent with the modification documents and that configuration control was adequate. Additionally, the inspectors verified that the temporary modification was identified on control room drawings, appropriate tags were placed on the affected equipment, and licensee personnel evaluated the combined effects on mitigating systems and the integrity of radiological barriers.

These activities constitute completion of one sample for temporary plant modifications as defined in Inspection Procedure 71111.18-05.

b. Findings

No findings of significance were identified.

**1R19 Postmaintenance Testing (71111.19)**

a. Inspection Scope

The inspectors reviewed the following postmaintenance activities to verify that procedures and test activities were adequate to ensure system operability and functional capability:

- October 21, 2009, Unit 1, residual heat removal pump 1C suction motor operated valve gasket replacement and bolt hole repairs
- October 22, 2009, Unit 2, essential chiller 22A following design change implementation of time delay to purge unit and compressor equalizing solenoid
- October 25, 2009, Unit 1, train A, low head safety injection pump cold leg isolation motor operated valve 31A gasket and motor replacement
- November 12, 2009, Unit 1, engineered safety features transformer 1B replacement
- December 9, 2009, Unit 1, main steam isolation valve 1D stem to pilot poppet valve replacement
- December 30, 2009, Unit 2, essential cooling water train 2C return vent valve to the component cooling water heat exchanger removal, base metal weld repair, and new half coupling installation

The inspectors selected these activities based upon the structure, system, or component's ability to affect risk. The inspectors evaluated these activities for the following (as applicable):

- The effect of testing on the plant had been adequately addressed; testing was adequate for the maintenance performed
- Acceptance criteria were clear and demonstrated operational readiness; test instrumentation was appropriate

The inspectors evaluated the activities against the technical specifications, the UFSAR, 10 CFR Part 50 requirements, licensee procedures, and various NRC generic communications to ensure that the test results adequately ensured that the equipment met the licensing basis and design requirements. In addition, the inspectors reviewed corrective action documents associated with postmaintenance tests to determine

whether the licensee was identifying problems and entering them in the corrective action program and that the problems were being corrected commensurate with their importance to safety. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of six postmaintenance testing inspection samples as defined in Inspection Procedure 71111.19-05.

b. Findings

No findings of significance were identified.

**1R20 Refueling and Other Outage Activities (71111.20)**

a. Inspection Scope

The inspectors reviewed the outage safety plan and contingency plans for the Unit 1 Refueling Outage 1RE15, conducted from September 29 through November 18, 2009, to confirm that licensee personnel had appropriately considered risk, industry experience, and previous site-specific problems in developing and implementing a plan that assured maintenance of defense-in-depth. During the refueling outage, the inspectors observed portions of the shutdown and cooldown processes and monitored licensee controls over the outage activities listed below.

- Configuration management, including maintenance of defense-in-depth, is commensurate with the outage safety plan for key safety functions and compliance with the applicable technical specifications when taking equipment out of service.
- Clearance activities, including confirmation that tags were properly hung and equipment appropriately configured to safely support the work or testing.
- Installation and configuration of reactor coolant pressure, level, and temperature instruments to provide accurate indication, accounting for instrument error.
- Status and configuration of electrical systems to ensure that technical specifications and outage safety-plan requirements were met, and controls over switchyard activities.
- Monitoring of decay heat removal processes, systems, and components.
- Verification that outage work was not impacting the ability of the operations personnel to operate the spent fuel pool cooling system.
- Reactor water inventory controls, including flow paths, configurations, and alternative means for inventory addition, and controls to prevent inventory loss.
- Controls over activities that could affect reactivity.

- Maintenance of secondary containment as required by the technical specifications.
- Refueling activities, including fuel handling and sipping to detect fuel assembly leakage.
- Start up and ascension to full power operation, tracking of start up prerequisites, walkdown of the drywell (primary containment) to verify that debris had not been left which could block emergency core cooling system suction strainers, and reactor physics testing.
- Licensee identification and resolution of problems related to refueling outage activities.
- Additionally, the inspectors performed Inspection Procedure 71007 for the Unit 1 reactor vessel head replacement as described in Section 4OA5.
- The inspectors also completed a smart sample using Operating Experience Smart Sample OpESS FY2007-03, Revision 2, "Crane and heavy lift inspection, supplemental guidance for IP-71111.20," for control of heavy loads including the reactor vessel head replacement activities.

Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one refueling outage and other outage inspection sample as defined in Inspection Procedure 71111.20-05.

b. Findings

No findings of significance were identified.

**1R22 Surveillance Testing (71111.22)**

a. Inspection Scope

The inspectors reviewed the UFSAR, procedure requirements, and technical specifications to ensure that the six surveillance activities listed below demonstrated that the systems, structures, and/or components tested were capable of performing their intended safety functions. The inspectors either witnessed or reviewed test data to verify that the significant surveillance test attributes were adequate to address the following:

- Preconditioning
- Evaluation of testing impact on the plant
- Acceptance criteria
- Test equipment

- Procedures
- Jumper/lifted lead controls
- Test data
- Testing frequency and method demonstrated technical specification operability
- Test equipment removal
- Restoration of plant systems
- Fulfillment of ASME Code requirements
- Updating of performance indicator data
- Engineering evaluations, root causes, and bases for returning tested systems, structures, and components not meeting the test acceptance criteria were correct
- Reference setting data
- Annunciators and alarms setpoints

The inspectors also verified that licensee personnel identified and implemented any needed corrective actions associated with the surveillance testing.

- November 9, 2009, Unit 1, reactor containment building 10-year integrated leakage rate test (containment isolation valve)
- November 19, 2009, Unit 2, turbine driven auxiliary feedwater pump 24 inservice test
- November 30, 2009, Unit 1, reactor coolant system leakage detection test following start up from Refueling Outage 1RE15
- December 10, 2009, Unit 1, turbine driven auxiliary feedwater pump 14 inservice test
- December 17, 2009, Unit 1, reactor coolant pump 1D flywheel 10-year ultrasonic examination
- December 31, 2009, Unit 1, standby diesel generator 13, 5-year inspection

Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of six surveillance testing inspection samples as defined in Inspection Procedure 71111.22-05.

b. Findings

No findings of significance were identified.

**Cornerstone: Emergency Preparedness**

**1EP2 Alert Notification System Testing (71114.02)**

a. Inspection Scope

The inspectors discussed with licensee staff the operability and testing of offsite emergency warning siren systems, tone alert radio systems, and backup alerting methods, to determine the adequacy of licensee methods for testing the alert and notification system in accordance with 10 CFR Part 50, Appendix E. The licensee's alert and notification system testing program was compared with criteria in NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1; FEMA Report REP-10, "Guide for the Evaluation of Alert and Notification Systems for Nuclear Power Plants," and the licensee's current FEMA-approved alert and notification system design report. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one sample as defined in Inspection Procedure 71114.02-05.

b. Findings

No findings of significance were identified.

**1EP3 Emergency Response Organization Augmentation Testing (71114.03)**

a. Inspection Scope

The inspectors reviewed documents and procedures, and discussed with licensee staff the operability and testing of primary and backup systems for augmenting the on-shift emergency response staff, to determine the adequacy of licensee methods for staffing emergency response facilities in accordance with the licensee's emergency plan and the requirements of 10 CFR Part 50, Appendix E. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one sample as defined in Inspection Procedure 71114.03-05.

b. Findings

No findings of significance were identified.

## 1EP4 Emergency Action Level and Emergency Plan Changes (71114.04)

### a. Inspection Scope

The inspectors performed onsite and in office reviews of the South Texas Project Electric Generating Station Emergency Plan, Revisions 20-8 and 20-9. These revisions:

- Relocated the emergency operations facility from the licensee's owner controlled area to a renovated facility located outside the emergency planning zone in Bay City, Texas, approximately 11 miles from the licensee's site
- Removed references to radiation protection factors, filtered ventilation systems, and the detection of airborne radioactivity from the description of the emergency operations facility, consistent with the design requirements of an emergency response facility located outside the emergency planning zone
- Removed references to the emergency operations facility from descriptions of onsite telecommunications capabilities, non-Class 1E electrical buses, and alternate access control points
- Deleted the alternate emergency operations facility
- Clarified how the duties of the onsite communicator position will be performed during hostile action events, and
- Made minor editorial and title corrections

These revisions were compared to their previous revisions, to the criteria of NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1, and to the standards in 10 CFR 50.47(b) to determine if the revisions adequately implemented the requirements of 10 CFR 50.54(q). The inspectors performed a walkdown of the new licensee emergency operations facility located in Bay City, Texas, on December 10, 2009, interviewed licensee emergency preparedness department staff, information technology staff, and telecommunication department staff, and compared the as-built facility to the requirements of NUREG-0696, "Functional Criteria for Emergency Response Facilities," NUREG-0737, Supplement 1, "Clarification of TMI Action Plan Requirements," NUREG-0814, "Methodology for Evaluation of Emergency Response Facilities," and Inspection Procedure 82412, "Emergency Response Facilities Evaluation," Revision B, January 6, 1988. These reviews were not documented in safety evaluation reports and did not constitute approval of licensee-generated changes; therefore, these revisions are subject to future inspection. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of two samples as defined in Inspection Procedure 71114.04-05.

b. Findings

No findings of significance were identified.

**1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies (71114.05)**

a. Inspection Scope

The inspectors reviewed the licensee's corrective action program requirements in Procedure OPGP03-ZX-0002, "Corrective Action Program," Revision 37. The inspectors reviewed summaries of 224 corrective action program documents assigned to the emergency preparedness department and emergency response organization between December 2007 and November 2009, and selected 18 for detailed review against the program requirements. The inspectors evaluated the licensee's response to corrective action requests to determine the licensee's ability to identify, evaluate, and correct problems in accordance with the licensee program requirements, planning standard 10 CFR 50.47(b)(14), and 10 CFR Part 50, Appendix E. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one sample as defined in Inspection Procedure 71114.05-05.

b. Findings

No findings of significance were identified.

**2. RADIATION SAFETY**

**Cornerstone: Occupational and Public Radiation Safety**

**2OS1 Access Control to Radiologically Significant Areas (71121.01)**

a. Inspection Scope

This area was inspected to assess licensee personnel's performance in implementing physical and administrative controls for airborne radioactivity areas, radiation areas, high radiation areas, and worker adherence to these controls. The inspectors used the requirements in 10 CFR Part 20, the technical specifications, and the licensee's procedures required by technical specifications as criteria for determining compliance. During the inspection, the inspectors interviewed the radiation protection manager, radiation protection supervisors, and radiation workers. The inspectors also reviewed activities associated with the reactor head replacement to fulfill the inspection requirements of Inspection Procedure 71007, "Reactor Vessel Head Replacement Inspection." The inspectors performed independent radiation dose rate measurements and reviewed the following items:

- Performance indicator events and associated documentation packages reported by the licensee in the Occupational Radiation Safety Cornerstone

- Controls (surveys, posting, and barricades) of radiation, high radiation, or airborne radioactivity areas
- Radiation work permits, procedures, engineering controls, and air sampler locations
- Barrier integrity and performance of engineering controls in airborne radioactivity areas
- Self-assessments, audits, licensee event reports, and special reports related to the access control program since the last inspection
- Corrective action documents related to access controls
- Radiation work permit briefings and worker instructions
- Adequacy of radiological controls, such as required surveys, radiation protection job coverage, and contamination control during job performance
- Posting and locking of entrances to all accessible high dose rate - high radiation areas and very high radiation areas
- Radiation worker and radiation protection technician performance with respect to radiation protection work requirements

Either because the conditions did not exist or an event had not occurred, no opportunities were available to review the following items:

- Adequacy of the licensee's internal dose assessment for any actual internal exposure greater than 50 millirem committed effective dose equivalent

Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of 14 of the required 21 samples as defined in Inspection Procedure 71121.01-05.

b. Findings

No findings of significance were identified.

**2OS2 ALARA Planning and Controls (71121.02)**

a. Inspection Scope

The inspectors assessed licensee personnel's performance with respect to maintaining individual and collective radiation exposures as low as is reasonably achievable. The inspectors used the requirements in 10 CFR Part 20 and the licensee's procedures required by technical specifications as criteria for determining compliance. The inspectors also reviewed activities associated with the reactor head replacement to fulfill

the inspection requirements of Inspection Procedure 71007, "Reactor Vessel Head Replacement Inspection." The inspectors interviewed licensee personnel and reviewed the following:

- Five outage or on-line maintenance work activities scheduled during this inspection period and associated work activity exposure estimates which were likely to result in the highest personnel collective exposures
- Site-specific ALARA procedures
- Interfaces between operations, radiation protection, maintenance, maintenance planning, scheduling and engineering groups
- Integration of ALARA requirements into work procedure and radiation work permit (or radiation exposure permit) documents
- Dose rate reduction activities in work planning
- Use of engineering controls to achieve dose reductions and dose reduction benefits afforded by shielding
- Workers' use of the low dose waiting areas
- First-line job supervisors' contribution to ensuring work activities are conducted in a dose efficient manner
- Radiation worker and radiation protection technician performance during work activities in radiation areas, airborne radioactivity areas, or high radiation areas
- Declared pregnant workers during the current assessment period, monitoring controls, and the exposure results
- Self-assessments, audits, and special reports related to the ALARA program since the last inspection
- Corrective action documents related to the ALARA program and follow-up activities, such as initial problem identification, characterization, and tracking

Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of 6 of the required 15 samples and 6 of the optional samples as defined in Inspection Procedure 71121.02-05.

b. Findings

No findings of significance were identified.

#### 4. OTHER ACTIVITIES

##### 40A1 Performance Indicator Verification (71151)

###### .1 Data Submission Issue

###### a. Inspection Scope

The inspectors performed a review of the data submitted by the licensee for the third quarter 2009 performance indicators for any obvious inconsistencies prior to its public release in accordance with Inspection Manual Chapter 0608, "Performance Indicator Program."

This review was performed as part of the inspectors' normal plant status activities and, as such, did not constitute a separate inspection sample.

###### b. Findings

No findings of significance were identified.

###### .2 Mitigating Systems Performance Index - Emergency ac Power System (MS06)

###### a. Inspection Scope

The inspectors sampled licensee submittals for the mitigating systems performance index - emergency ac power system performance indicator for Units 1 and 2 for the period from the fourth quarter 2008 through the third quarter 2009. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors reviewed the licensee's operator narrative logs, mitigating systems performance index derivation reports, issue reports, event reports, and NRC integrated inspection reports for the period of October 2008 through September 2009 to validate the accuracy of the submittals. The inspectors reviewed the mitigating systems performance index component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of one mitigating systems performance index emergency ac power system sample per unit as defined in Inspection Procedure 71151-05.

###### b. Findings

No findings of significance were identified.

.3 Mitigating Systems Performance Index - High Pressure Injection Systems (MS07)

a. Inspection Scope

The inspectors sampled licensee submittals for the mitigating systems performance index - high pressure injection systems performance indicator for Units 1 and 2 for the period from the fourth quarter 2008 through the third quarter 2009. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors reviewed the licensee's operator narrative logs, issue reports, mitigating systems performance index derivation reports, event reports, and NRC integrated inspection reports for the period of October 2008 through September 2009 to validate the accuracy of the submittals. The inspectors reviewed the mitigating systems performance index component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of one mitigating systems performance index high pressure injection system sample per unit as defined in Inspection Procedure 71151-05.

b. Findings

No findings of significance were identified.

.4 Mitigating Systems Performance Index - Heat Removal System (MS08)

a. Inspection Scope

The inspectors sampled licensee submittals for the mitigating systems performance index - heat removal system performance indicator for Units 1 and 2 for the period from the fourth quarter 2008 through the third quarter 2009. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports, mitigating systems performance index derivation reports, and NRC integrated inspection reports for the period of October 2008 through September 2009 to validate the accuracy of the submittals. The inspectors reviewed the mitigating systems performance index component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of one mitigating systems performance index heat removal system sample per unit as defined in Inspection Procedure 71151-05.

b. Findings

No findings of significance were identified.

.5 Mitigating Systems Performance Index - Residual Heat Removal System (MS09)

a. Inspection Scope

The inspectors sampled licensee submittals for the mitigating systems performance index - residual heat removal system performance indicator for Units 1 and 2 for the period from the fourth quarter 2008 through the third quarter 2009. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors reviewed the licensee's operator narrative logs, issue reports, mitigating systems performance index derivation reports, event reports and NRC integrated inspection reports for the period of October 2008 through September 2009 to validate the accuracy of the submittals. The inspectors reviewed the mitigating systems performance index component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of one mitigating systems performance index residual heat removal system sample per unit as defined in Inspection Procedure 71151-05.

b. Findings

No findings of significance were identified.

.6 Mitigating Systems Performance Index - Cooling Water Systems (MS10)

a. Inspection Scope

The inspectors sampled licensee submittals for the mitigating systems performance index - cooling water systems performance indicator for Units 1 and 2 for the period from the fourth quarter 2008 through the third quarter 2009. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors reviewed the licensee's operator narrative logs, issue reports, mitigating systems performance index derivation reports, event reports, and NRC integrated inspection reports for the period of October 2008 through September 2009 to validate the accuracy of the submittals. The inspectors

reviewed the mitigating systems performance index component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of one mitigating systems performance index cooling water system sample per unit as defined in Inspection Procedure 71151-05.

b. Findings

No findings of significance were identified.

.7 Drill/Exercise Performance (EP01)

a. Inspection Scope

The inspectors sampled licensee submittals for the drill/exercise performance indicator for the period July 2008 through September 2009. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, was used. The inspectors reviewed the licensee's records associated with the performance indicator to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the NEI guidance. Specifically, the inspectors reviewed licensee records and processes including procedural guidance on assessing opportunities for the performance indicator; assessments of performance indicator opportunities during predesignated control room simulator training sessions, performance during the 2008 biennial exercise, and performance during other drills. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of the drill/exercise performance sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings of significance were identified.

.8 Emergency Response Organization Drill Participation (EP02)

a. Inspection Scope

The inspectors sampled licensee submittals for the Emergency Response Organization Drill Participation performance indicator for the period July 2008 through September 2009. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline,"

Revision 6, was used. The inspector reviewed the licensee's records associated with the performance indicator to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the NEI guidance. Specifically, the inspectors reviewed licensee records and processes including procedural guidance on assessing opportunities for the performance indicator, rosters of personnel assigned to key emergency response organization positions, and exercise participation records. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of the emergency response organization drill participation sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings of significance were identified.

.9 Alert and Notification System (EP03)

a. Inspection Scope

The inspectors sampled licensee submittals for the alert and notification system performance indicator for the period July 2008 through September 2009. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, was used. The inspectors reviewed the licensee's records associated with the performance indicator to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the NEI guidance. Specifically, the inspector reviewed licensee records and processes including procedural guidance on assessing opportunities for the performance indicator and the results of periodic alert notification system operability tests. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of the alert and notification system sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings of significance were identified.

.10 Occupational Exposure Control Effectiveness (OR01)

a. Inspection Scope

The inspectors sampled licensee submittals for the Occupational Radiological Occurrences performance indicator for the period from the second quarter to the third quarter 2009. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, was used. The inspectors reviewed the licensee's assessment of the performance indicator for occupational radiation safety to determine if indicator related

data was adequately assessed and reported. To assess the adequacy of the licensee's performance indicator data collection and analyses, the inspectors discussed with radiation protection staff, the scope and breadth of its data review, and the results of those reviews. The inspectors independently reviewed electronic dosimetry dose rate and accumulated dose alarm and dose reports and the dose assignments for any intakes that occurred during the time period reviewed to determine if there were potentially unrecognized occurrences. The inspectors also conducted walkdowns of numerous locked high and very high radiation area entrances to determine the adequacy of the controls in place for these areas.

These activities constitute completion of the occupational radiological occurrences sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings of significance were identified.

.11 Radiological Effluent Technical Specifications/Offsite Dose Calculation Manual Radiological Effluent Occurrences (PR01)

a. Inspection Scope

The inspectors sampled licensee submittals for the Radiological Effluent Technical Specifications/Offsite Dose Calculation Manual Radiological Effluent Occurrences performance indicator for the period from the second quarter to the third quarter 2009. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, was used. The inspectors reviewed the licensee's issue report database and selected individual reports generated since this indicator was last reviewed to identify any potential occurrences such as unmonitored, uncontrolled, or improperly calculated effluent releases that may have impacted offsite dose.

These activities constitute completion of the radiological effluent technical specifications/offsite dose calculation manual radiological effluent occurrences sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings of significance were identified.

## 40A2 Identification and Resolution of Problems (71152)

### Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness, Public Radiation Safety, Occupational Radiation Safety, and Physical Protection

#### .1 Routine Review of Identification and Resolution of Problems

##### a. Inspection Scope

As part of the various baseline inspection procedures discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that they were being entered into the licensee's corrective action program at an appropriate threshold, that adequate attention was being given to timely corrective actions, and that adverse trends were identified and addressed. The inspectors reviewed attributes that included: the complete and accurate identification of the problem; the timely correction, commensurate with the safety significance; the evaluation and disposition of performance issues, generic implications, common causes, contributing factors, root causes, extent of condition reviews, and previous occurrences reviews; and the classification, prioritization, focus, and timeliness of corrective actions. Minor issues entered into the licensee's corrective action program because of the inspectors' observations are included in the attached list of documents reviewed.

These routine reviews for the identification and resolution of problems did not constitute any additional inspection samples. Instead, by procedure, they were considered an integral part of the inspections performed during the quarter and documented in Section 1 of this report.

##### b. Findings

No findings of significance were identified.

#### .2 Daily Corrective Action Program Reviews

##### a. Inspection Scope

In order to assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the licensee's corrective action program. The inspectors accomplished this through review of the station's daily corrective action documents.

The inspectors performed these daily reviews as part of their daily plant status monitoring activities and, as such, did not constitute any separate inspection samples.

##### b. Findings

No findings of significance were identified.

.3 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a review of the licensee's corrective action program and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors focused their review on repetitive equipment issues, but also considered the results of daily corrective action item screening discussed in Section 4OA2.2, above, licensee trending efforts, and licensee human performance results. The inspectors nominally considered the 6-month period of July through December 2009, although some examples expanded beyond those dates where the scope of the trend warranted.

The inspectors also included issues documented outside the normal corrective action program in major equipment problem lists, repetitive and/or rework maintenance lists, departmental problem/challenges lists, system health reports, quality assurance audit/surveillance reports, self-assessment reports, and maintenance rule assessments. The inspectors compared and contrasted their results with the results contained in the licensee's corrective action program trending reports. Corrective actions associated with a sample of the issues identified in the licensee's trending reports were reviewed for adequacy. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one single semi-annual trend inspection sample as defined in Inspection Procedure 71152-05.

b. Findings

No findings of significance were identified.

.4 Selected Issue Follow-up Inspection

a. Inspection Scope

During a review of items entered in the licensee's corrective action program, the inspectors recognized several corrective action item documents identifying various concerns about the Units 1 and 2 essential chillers. Items included temporary modifications for trending of certain system parameters, chiller idle times to ensure operability is maintained, maintenance rule failures, long term system health, and funding of enhancements (such as the digital control system upgrade). Throughout the inspection period of October through December 2009, the inspectors reviewed these items to ensure that the licensee had appropriately evaluated the UFSAR, technical specifications, Maintenance Rule, performance indicators, and Technical Guidance 9900, "Operability Determinations & Functionality Assessments for Resolution of Degraded or Nonconforming Conditions Adverse to Quality or Safety," dated April 16, 2008. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one in-depth problem identification and resolution sample as defined in Inspection Procedure 71152-05.

b. Findings

No findings of significance were identified.

**40A3 Follow-up of Events and Notices of Enforcement Discretion (71153)**

.1 (Closed) LER 05000498/2009-002-00, “Main Steam Isolation Valve Blocked from Closing”

On September 16, 2009, construction of a wooden deck work platform around main steam isolation valve 1D was completed to support planned maintenance during the fall 2009 outage. On September 17, 2009, with Unit 1 at 100 percent power, a reactor operator performing routine rounds of the isolation valve cubicles identified that the newly built wooden deck work platform may prevent the valve from fully closing. Engineering and operations personnel confirmed that the wooden deck work platform would interfere with full closure of the valve, and the licensee subsequently removed the platform. This event was documented in the licensee’s corrective action program as Condition Report 09-14248.

The inspectors reviewed the licensee’s event report, root cause investigation report, interviewed personnel, and walked down the isolation valve cubicles to confirm the licensee had implemented the necessary corrective actions. The root cause of the event was that procedure OPGP03-ZM-0028, “Erection and Use of Temporary Scaffolding,” Revision 13, was inadequate for installing the temporary wooden platform around the main steam isolation valve. The procedure failed to identify the potential limitations and precautions for installing the platform around equipment important to plant operations. In addition, the licensee’s process and procedures did not require consultation with engineering or operations to identify and document limitations for constructing nonstandard scaffolding platforms around safety-related equipment. The licensee has since implemented corrective actions to address the causes of the violation. The inspectors determined that a violation of Technical Specification 3.7.1.5 had occurred because the main steam isolation valve was inoperable for longer than its technical specification allowed outage time of 4 hours without taking actions to manage the risk or shut-down the plant. The enforcement aspects of this violation are discussed in Section 40A7. This licensee event report is closed.

.2 (Closed) LER 05000499/2008-002-01, “Loss of Residual Heat Removal and Valid Actuation of Safety Systems”

The inspectors reviewed Revision 1 of the licensee event report for the valid actuation of safety systems that resulted in the loss of the running residual heat removal pumps. The licensee revised the report to include the loss of a function and, therefore, make it also reportable per a safety system functional failure; no new information is provided. As a result, this licensee event report is closed to Revision 0, which has already been

reviewed, dispositioned, and closed in NRC Inspection Report 05000498/2009002 and 05000499/2009002 Sections 1R13 and 4OA3. This licensee event report is closed.

#### **4OA5 Other Activities**

##### **.1 Quarterly Resident Inspector Observations of Security Personnel and Activities**

###### **a. Inspection Scope**

During this inspection period, the inspectors performed observations of security force personnel and activities to ensure that the activities were consistent with South Texas Project Electric Generating Station security procedures and regulatory requirements relating to nuclear plant security. These observations took place during both normal and off-normal plant working hours.

These quarterly resident inspector observations of security force personnel and activities did not constitute any additional inspection samples. Rather, they were considered an integral part of the inspectors' normal plant status review and inspection activities.

###### **b. Findings**

No findings of significance were identified.

##### **.2 Reactor Vessel Head Replacement Inspection (71007)**

###### **Design and Planning Inspections**

###### **a. Inspection Scope**

The inspectors used the guidance in Inspection Procedure 71007 to perform the following reactor vessel head design and planning inspection activities.

###### **Engineering and Technical Support**

Inspections were conducted by resident and regional office-based specialist inspectors to review engineering and technical support activities performed prior to, and during, the reactor vessel head replacement outage. This review verified that selected design changes and modifications to structures, systems, and components described in the UFSAR for transporting the new and old reactor vessel heads were reviewed in accordance with 10 CFR 50.59. Additionally, key design aspects and modifications associated with the reactor vessel head replacement were also reviewed. Finally, the inspectors determined if the licensee had confirmed that the existing reactor vessel head conformed to design requirements and that there were no fabrication deviations from design requirements. The results of the inspection are documented in Section 1R17 and Section 4OA5 of NRC Inspection Report 05000498/2009002 and 05000499/2009002.

### Lifting and Rigging

The inspectors reviewed engineering design, modification, and analysis associated with reactor vessel head lifting and rigging activities. This included: (1) crane and rigging equipment, (2) reactor vessel head component drop analysis, (3) safe load paths, and (4) load lay-down areas.

### Radiation Protection

The review of radiation protection program controls, planning, and preparation in: (1) ALARA planning, (2) dose estimates and tracking, (3) exposure and contamination controls, (4) radioactive material management, (5) radiological work plans and controls, (6) emergency contingencies, and (7) project staffing and training plans. This review was performed as part of the baseline inspections conducted during the 1RE15 outage which are documented in Section 2OS1 and 2OS2 of this report.

### Security Considerations and Adverse Impact to Other Unit

The inspectors observed security controls and reviewed security plans to verify that any potential adverse impacts on Unit 2 (the operating unit) caused by outage activities were minimized. The inspectors made frequent observations of security actions to verify that the licensee had implemented the appropriate controls for affected vital and protected area barriers during the reactor head replacement activities.

#### b. Findings

No findings of significance were identified.

### Reactor Vessel Head Fabrication Inspections at Licensee Facility

#### a. Inspection Scope

The inspectors used the guidance in Inspection Procedure 71007 to perform the following reactor vessel head fabrication inspection activities.

#### Heat Treatment

The inspectors verified that the material heat treatment used to enhance the mechanical properties of the reactor vessel head material carbon, low alloy, and high alloy chromium steels is conducted per ASME Code and approved vendor procedures consistent with the applicable ASME Code, Section III requirements. Also, inspections were performed to verify that adequate heat treatment procedures were available to assure that the following requirements were met: (1) furnace atmosphere, (2) furnace temperature distribution and calibration of measuring and recording devices, (3) thermocouple installation, (4) heating and cooling rates, (5) quenching methods, and (6) record and documentation requirements.

### Non-Destructive Examination (NDE)

Inspections were conducted to ensure the manufacturing control plan included provisions for monitoring non-destructive examination to ascertain that the non-destructive examination was performed in accordance with applicable code, material specification, and contract requirements.

### Welding

The inspectors reviewed the documentation for the weld overlay welding operations that established a layer of stainless steel cladding on the inside of the reactor vessel head to determine if it was accomplished per design. The inspectors also selected a sample of dome-to-flange and control rod drive mechanism flange-to-nozzle welds and reviewed the following items: (1) certified mill test reports of the dome, flange, weld material rods, and control rod drive mechanism nozzles; (2) certified mill test reports for the welding material for the reactor vessel head cladding; (3) cladding weld records, weld rod material control requisitions, traceability of weld material rods, weld procedure qualification, welder qualifications, and nonconformance reports; (4) control rod drive mechanism nozzle cladding welding inspection records, weld rod material control requisitions, traceability of weld material rods, weld procedure qualification, welder qualifications, and nonconformance reports; (5) control rod drive mechanism to nozzle welding and welds inspection records, weld rod material control requisitions, traceability of weld material rods, weld procedure qualification, welder qualifications, and nonconformance reports; and (6) non-destructive examination procedures, non-destructive examination records of the welds, non-destructive examination personnel qualifications, and certification of the non-destructive examination solvents.

### Procedures

Inspections were completed to ensure that repair procedures had been established and that these procedures were consistent with applicable ASME Code, material specification, and contract requirements by verifying: (1) repair welding was conducted in accordance with procedures qualified to Section IX of the ASME Code, (2) all welders had been qualified in accordance with Section IX of the ASME Code, (3) records of the repair were maintained, and (4) that requirements had been established for the preparation of certified material test reports and that the records of all required examinations and tests were traceable to the procedures to which they were performed.

### Code Reconciliation

The inspectors reviewed the required documentation, supplemental examinations, analysis, and ASME Code documentation reconciliation to ensure that the original ASME Code N-Stamp remains valid, and that the replacement head complies with appropriate NRC rules and industry requirements. The inspectors also ensured that the design specification was reconciled and a design report was prepared for the reconciliation of the replacement head, verifying that they were certified by professional engineers competent in ASME Code requirements.

### Quality Assurance Program

Inspections were conducted to ensure that machining was carried out under a controlled system of operation, a drawing/document control system was in use in the manufacturing process, and that part identification and traceability was maintained throughout processing and was consistent with the manufacturer's quality assurance program. In addition, the inspectors ensured that only the specified drawing and document revisions were available on the shop floor and were being used for fabrication, machining, and inspection.

### Compliance Inspection

The inspectors verified that the original ASME Code, Section III, data packages for the replacement reactor vessel head were supplemented by documents included in the ASME Code Section XI, (preservice inspection) data packages; examined selected manufacturing and inspection records of the finished machined reactor vessel head; and verified compliance with applicable documentation requirements.

#### b. Findings

No findings of significance were identified.

### Reactor Vessel Head Removal and Replacement Inspections

#### a. Inspection Scope

The inspectors used the guidance in Inspection Procedure 71007 to perform the following reactor vessel head removal and replacement inspection activities:

#### Lifting and Rigging

The inspectors reviewed preparations and procedures for rigging and heavy lifting including crane and rigging inspections, testing, equipment modifications, lay-down area preparations, and training for the following activities:

- Area preparation for the outside systems
- Lattice boom crawler crane assembly, disassembly, and operation
- Hydraulic Gantry Lift System
- Outside bridge and trolley transfer system
- Elevated Cantilevered Handling Device installation and use
- Reactor vessel head lift rig and polar crane
- Downender/Upender Fixture
- Old reactor vessel head removal
- New reactor vessel head placement
- Transport of old reactor vessel head to storage location

### Major Structural Modifications

The inspectors observed that there were no major structural modifications that were made to facilitate reactor vessel head replacement.

### Containment Access and Integrity

The inspectors observed there were no modifications to the existing containment access structure or integrity to allow for the reactor vessel head to be removed and installed. The new and old reactor vessel head were moved in and out of containment using the existing equipment hatch.

### Outage Operating Conditions

The inspectors reviewed and observed the establishment of operating conditions including: (1) defueling; (2) reactor coolant system draindown; (3) system isolation; (4) safety tagging; (5) radiation protection controls; (6) controls for excluding foreign materials in the reactor vessel; (7) verification of the suitability of reinstalled (reused) components for use; and (8) the installation, use, and removal of temporary services. Section 1R20 of this report documents additional activities that were performed during the outage.

### Storage of Removed Reactor Vessel Head

The inspectors reviewed the radiological safety plans and observed the transport, storage, and radiological surveys of the old reactor vessel head to its onsite storage location.

b. Findings

No findings of significance were identified.

### Post Installation Verification and Testing Inspections

a. Inspection Scope

The inspectors used the guidance in Inspection Procedure 71007 to perform the following post installation verification and testing inspection activities. Selective inspections were performed of the following areas: (1) containment testing, (2) licensee's post installation inspections and verifications program and its implementation, (3) reactor coolant system leakage testing and review of test results, (4) procedures required for equipment performance testing to confirm the design and to establish baseline measurements, and (5) preservice inspection of new welds.

b. Findings

No findings of significance were identified.

## **40A6 Meetings**

### Exit Meeting Summary

On August 6, 2009, the inspectors presented the preliminary results of the biennial operator licensing onsite inspection to licensee staff, who acknowledged the insights provided. The inspectors confirmed that proprietary information was returned to licensee staff prior to leaving the site. The final results of the inspection were provided via telephonic exit by Mr. S. Garchow to Ms. R. Savage, Senior Licensing Specialist, on November 19, 2009.

On October 8, 2009, the inspectors presented the inspection results of the radiation safety inspection to Mr. D. Rencurrel, Senior Vice President, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On October 22, 2009, the inspectors presented the inservice inspection results to Mr. G. Powell, Vice President, Engineering, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On December 10, 2009, the inspectors presented the onsite emergency preparedness inspection results to Mr. G. Powell, Vice President, Engineering, and other members of the licensee's staff. The licensee acknowledged the issues presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On January 7, 2010, the inspectors presented the inspection results to Mr. K. Richards, Senior Vice President and Assistant to the Chief Executive Officer, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

## **40A7 Licensee-Identified Violations**

The following violation of very low safety significance (Green) was identified by the licensee and is a violations of NRC requirements which met the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as noncited violation.

Technical Specification 3.7.1.5 requires, in part, that each main steam isolation valve be operable in Modes 1, 2, and 3. If one main steam isolation valve is inoperable but open, power operation may continue provided that operability is restored within 4 hours. Contrary to the above, on September 17, 2009, the licensee identified that a wooden deck platform was built around main steam isolation valve 1D that would have prevented the valve from fully closing. The violation was processed through the power operations significance determination process and warranted a Phase 2 analysis because it resulted in the loss of safety function of one train of main steam isolation valves for

greater than the technical specification allowed outage time. The Phase 2 analysis determined that the violation had very low safety significance because the exposure time was less than 3 days. This finding is documented in the licensee's corrective action program as Condition Report 09-14248.

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### **Licensee Personnel**

R. Aguilera, General Supervisor, Radiation Protection  
J. Ashcraft, Manager, Health Physics  
C. Bowman, General Manager Oversight  
J. Calvert, Manager, Training  
J. Cook, Supervisor, Project Engineering  
R. Dunn Jr., Supervisor, Configuration Control and Analysis  
J. Enoch, Supervisor, Emergency Planning  
T. Frawley, Manager, Operations  
R. Gangluff, Manager, Chemistry, Environmental and Health Physics  
E. Halpin, President and Chief Executive Officer  
W. Harrison, Manager, Licensing  
J. Heil, Testing Programs Engineer  
G. Hildebrant, Manager, Plant Protection  
K. House, Manager, Design Engineering  
T. Hurley, Operations Training Supervisor – Requalification Program  
G. Janak, Manager, Operations Division, Unit 1  
B. Jenewein, Manager, Systems Engineering  
J. Lovejoy, Assistant Maintenance Manager  
N. Mayer, Manager, Outage and Projects  
A. McGalliard, Manager, Performance Improvement  
R. McNiel, Manager, Maintenance Engineering  
J. Mertink, Manager, Maintenance  
J. Milliff, Manager, Operations Division, Unit 2  
J. Paul, Engineer, Licensing Consultant  
L. Peter, Plant General Manager  
J. Pierce, Manager, Operations Training  
G. Powell, Vice President, Engineering  
M. Reddix, Manager, Security  
D. Rencurrel, Senior Vice President, Units 1 and 2  
M. Ruvalcaba, Testing and Programs Manager  
R. Savage, Engineer, Licensing Staff Specialist  
M. Schaefer, Manager, I&C Maintenance  
K. Silverthorne, Welding Supervisor  
L. Spiess, Testing Programs Engineer  
J. Stauber, Testing Programs Engineer  
K. Taplett, Senior Engineer, Licensing Staff  
D. Towler, Manager, Quality  
D. Whiddon, Supervisor, Quality  
J. Williams, Testing Programs Engineer  
D. Zink, Acting Supervisor, Plant Engineering

## LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

### Opened and Closed

05000499/2009005-01    NCV    Inadequate Maintenance Procedure Degrades Cold Overpressure Mitigation System (Section 1R15)

### Closed

05000498/2009-002-00    LER    Main Steam Isolation Valve Blocked from Closing (Section 4OA3)

05000499/2008-002-01    LER    Loss of Residual Heat Removal and Valid Actuation of Safety Systems (Section 4OA3)

## LIST OF DOCUMENTS REVIEWED

### Section 1R01: Adverse Weather Protection

#### CONDITION REPORTS

09-4124	09-12473	09-16434
09-6011	09-15377	09-16488

#### PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
OPGP03-ZV-0001	Severe Weather Plan	15
OPGP03-ZV-0002	Hurricane Plan	4
OPGP03-ZV-0004	Freezing Weather Plan	2
OPOP01-ZO-0004	Extreme Cold Weather Guidelines	28
OPOP04-ZO-0002	Natural or Destructive Phenomena Guidelines	41

#### WORK AUTHORIZATION NUMBERS

353386

### Section 1R04: Equipment Alignment

#### CONDITION REPORTS

09-8921	09-9390	09-11195
09-9218	09-10995	09-17153

DRAWINGS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
5V119V10001	HVAC Essential Chilled Water System	31
5R209F05018 #1	Component Cooling Water System	18

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
0POP02-CC-0001	Component Cooling Water	36/37
0POP02-CH-0001	Essential Chilled Water System	39
0POP02-EW-0001	Essential Cooling Water Operations	50

**Section 1R05: Fire Protection**

FIRE PREPLANS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
0DGB36-FP-0500	Fire Preplan for Diesel Generator Building, Train C	3
0DGB37-FP-0501	Fire Preplan for Diesel Generator Building, Train B	3
0DGB38-FP-0502	Fire Preplan for Diesel Generator Building, Train A	3
0EAB02-FP-0006	Fire Preplan Electrical Auxiliary Building, Electrical Penetration Area Train A	2
0EAB03-FP-0031	Fire Preplan Electrical Auxiliary Building, Electrical Penetration Area Train B	4
0EAB04-FP-0046	Fire Preplan Electrical Auxiliary Building, Electrical Penetration Area Train C	3
0FHB35-FP-0305	Fire Preplan Fuel Handling Building Train C SI/CSS Cubicle	2
0FHB35-FP-0306	Fire Preplan Fuel Handling Building Train B SI/CSS Cubicle	2
0FHB35-FP-0307	Fire Preplan Fuel Handling Building Train A SI/CSS Cubicle	2

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
OPGP03-ZF-0018	Fire Protection System Functionality Requirements	14
OPGP03-ZF-0019	Control of Transient Fire Loads and Use of Combustible and Flammable Liquids and Gases	7

**Section 1R06: Flood Protection Measures**

CALCULATIONS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
NC-9703	Flooding Analysis MAB	2

CONDITION REPORTS

09-9862	09-20151	09-20265
09-12759	09-20263	

WORK AUTHORIZATION NUMBERS

348025	393695
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**Section 1R08: Inservice Inspection Activities**

CONDITION REPORTS

08-17491	09-14379	09-15263
09-00574	09-14382	09-15264
09-09926	09-15155	09-15273
09-14374	09-15260	09-15309
09-14375	09-15261	09-15548
09-14378	09-15262	09-17069

MISCELLANEOUS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION/ DATE</u>
N/A	STPEGS Units 1 and 2 Inservice Inspection Plan	5
N/A	Results of EPRI-Assisted Portions of the Self Assessment of the NDE Testing Programs for South Texas Project	February 18, 2009

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION/ DATE</u>
RR-ENG-2-3	South Texas Project, Units 1 and 2 - Second 10-Year Interval Inservice Inspection Program Plan - Relief Request (TAC NOS. MA5870 and MA5871)	October 15, 1999
RR-ENG-2-6	South Texas Project, Units 1 and 2 - Second 10-Year Interval Inservice Inspection Program Plan - Relief Request (TAC NOS. MA5874 and MA5875)	February 7, 2000
RR-ENG-2-16	South Texas Project, Units 1 and 2 - Request for Relief from ASME Code Requirements for the Second 10-Year Interval Inservice Inspection Program Based on Risk-Informed Alternative Approach (TAC NOS. MA7789 and MA7790)	September 11, 2000
RR-ENG-2-23	Approval of Relief Request for Application of Risk-Informed Inservice Inspection Program for American Society of Mechanical Engineers Boiler and Pressure Vessel Code Class 1 and 2 Piping for South Texas Project, Units 1 and 2 (TAC NOS. MB1277 and MB1278)	March 5, 2002

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
0PEP10-ZA-0001	Nondestructive Examination Written Practice	6
0PEP10-ZA-0004	General Ultrasonic Examination	4
0PEP10-ZA-0009	Recording Data from Direct Visual, Liquid Penetrant and Magnetic Particle Examinations	1
0PEP10-ZA-0012	Color Contrast Solvent Removable Liquid Penetrant Examination for ASME XI	2
0PEP10-ZA-0023	Visual Examination of Component Supports for ASME Section XI Inservice Inspection	4
0PEP10-ZA-0024	ASME XI Examination for VT-1 and VT-3	1
0PEP10-ZA-0054	ASME Section XI VE Visual Examinations	0
0PGP03-ZE-0027	ASME Section XI Repair, Replacement, and Post Maintenance Pressure Testing	4
0PGP03-ZE-0033	RCS Pressure Boundary Inspection for Boric Acid Leaks	10

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
OPGP03-ZE-0133	Boric Acid Corrosion Control Program	2
OPGP03-ZX-0003	Station Self Assessment Program	0
OPGP04-ZA-0002	Condition Report Engineering Evaluation	11
OPGP04-ZE-0304	Inservice Inspection Program for Welds and Component Supports	7
OPSP11-RC-0015	ASME Section XI Inservice Inspection	14
PDI-ISI-254	Remote Inservice Inspection of Reactor Vessel Shell Welds	7
UTI-PDI-UT-1	PDI Generic Procedure for the Ultrasonic Examination of Ferritic Pipe Welds	0
UTI-PDI-UT-2	PDI Generic Procedure for The Ultrasonic Examination of Austenitic Pipe Welds	2
UTI-PDI-UT-8	PDI Generic Procedure for the Ultrasonic Examination of Weld Overlaid Similar and Dissimilar Metal Welds	1
UTI-016	Manual Ultrasonic Examination of Vessel Nozzle Inner Radius Sections	2
UTI-024	Manual Ultrasonic Examination of Ferritic Pressure Vessel Welds (Greater than 2 to 12 Inches in Thickness)	5
WDI-STD-133	Paragon Eddy Current Procedure for the Inspection of Reactor Vessel Bottom Mounted Instrumentation Tube Penetrations	5
WDI-STD-134	Paragon Ultrasonic Procedure for Inspection of Reactor Pressure Vessel Bottom Mounted Instrumentation Tube Penetrations	5

**Section 1R11: Licensed Operator Requalification Program**

JOB PERFORMANCE MEASURES (JPM) REVIEWED

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
JPM NO: 024.02	Reset Mode I Sequencer Logic	8
JPM NO: 008.02	Energize LHSI Cold Leg Injection Valves	9

LICENSEE EVENT REPORTS

<u>NUMBER</u>	<u>TITLE</u>
2007-001	Auxiliary Feedwater Pump Inoperable Longer Than Allowed By Technical Specifications
2007-002	Entry into TS 3.0.3 for Greater than 1 Hour due to Inoperable Degraded Voltage Relays
2007-003	Incorrect Count Rate Board Installed in Extended Range Nuclear Instrumentation Channel
2008-001	Incorrectly Stored Fuel Assembly in U2 Spent Fuel Pool
2008-002	Valid Actuation of Safety Systems
2008-003	Inoperable Component Cooling Water Train

OPERATIONS TRAINING POLICIES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
LOR-GL-0004	LOR Two-Year Training Plan Guidelines	7

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION/ DATE</u>
LOR095.02-1	Dilution to Criticality and Generator Synch Just In Time Training	October 21, 2009
LOR-GL-0001	LOR Training Program Guidelines	14
LOR-GL-0002	LOR Annual and Biennial Evaluation Guidelines	13
OPGP03-ZA-0119	Management Oversight of Training Programs	8
OPGP03-ZA-0128	Medical Examinations	7
OPGP03-ZT-0132	Licensed Operator Requalification	7
OPOP01-ZA-0014	Licensed Operator License Maintenance	22

SCENARIOS

TITLE

LOR094 Exam 1, Licensed Operator Requalification 2009 Annual Performance Test,  
Scenario # Exam 1

LOR094 Exam 8, Licensed Operator Requalification 2009 Annual Performance Test,  
Scenario # Exam 8

SIMULATOR DISCREPANCY REPORTS (August 1, 2007 – August 1, 2009)

TITLE

51 Open Discrepancy Reports  
10 Closed Discrepancy Reports

SIMULATOR TESTING AND MAINTENANCE DOCUMENTS

TITLE

STP Simulator Core Reload Acceptance Test (Cycle 15)  
Simulator DR and DCP Report, 8/1/07-8/1/09

**Section 1R12: Maintenance Effectiveness**

CONDITION REPORTS

05-2519	09-3795	09-10957
07-8287	09-5475	09-11314
08-8692	09-5760	09-14037
08-9459	09-6267	09-14249
08-16862	09-6609	09-14564
09-1239	09-8917	09-14979
09-2634	09-9204	09-15306

MISCELLANEOUS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION/ DATE</u>
N/A	System Health Report Essential Cooling Water (EW)	Third Quarter 2007 through Third Quarter 2009
N/A	System Health Report Reactor Coolant System (RC)	Third Quarter 2007 through Third Quarter 2009

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION/ DATE</u>
N/A	System Health Report Component Cooling Water (CC)	Fourth Quarter 2007 through Third Quarter 2009
09YU0001	2009 ECP Sediment Calculation	0
MRBD TAB 14	Maintenance Rule System Scoping Basis Report	N/A

**Section 1R13: Maintenance Risk Assessment and Emergent Work Controls**

CONDITION REPORTS

09-17531                      09-20681                      09-20951

MISCELLANEOUS

<u>TITLE</u>	<u>DATE</u>
1RE15 Shutdown Risk Assessment Report	September 23, 2009

**Section 1R15: Operability Evaluations**

CONDITION REPORTS

07-7813                      09-10502                      09-15684  
08-15146                      09-13122                      09-19260  
08-17780                      09-14961

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
OPGP03-ZE-0022	Inservice Testing Program for Pumps	20
OPGP04-ZA-0002	Condition Report Engineering Evaluation	12
OPGP03-ZM-0016	Installed Plant Instrumentation Calibration Verification Program	23
OPMP07-AM-0041	QDPS APC-D1 Removal From Service	5
IC-2-92000315	QDPS APC D1 ZLP680 Refresh NVRAM	13



<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
0PMP05-ZE-0202	Insulation Resistance Testing – Low Voltage Motors	15
0PMP05-ZE-0407	Limitorque Operator Maintenance Type SMB/SB-1 Actuator	10
0PMP05-ZE-0410	Installation of Quick Stem Sensor (QSS)	2
0POP02-RH-0001	Residual Heat Removal System Operation	50
0PSP03-MS-0002	Main Steam System Cold Shutdown Valve Operability Test	14
0PSP03-SP-0024	Steam Line Isolation Actuation and Response Time Test	9

WORK AUTHORIZATION NUMBERS

339644	362142	372719
342960	362143	377477
347029	362144	384033
351427	362145	388708
354516	362146	391114

**Section 1R20: Refueling and Other Outage Activities**

CONDITION REPORTS

07-1080	08-1035	09-15840
07-11727	08-2257	09-15877
07-13482	09-15665	09-16574
08-631	09-15738	09-18420
08-860		

MISCELLANEOUS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
N/A	1RE15 Shutdown Risk Assessment Report	September 23, 2009

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
0PGP03-ZA-0069	Control of Heavy Loads	22
0PMP04-RX-0019	Rapid Refueling Mechanical Support	36

**Section 1R22: Surveillance Testing**

CONDITION REPORTS

09-261	09-10667	09-20368
09-1443	09-20040	09-20840

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
0PEP10-ZA-0004	General Ultrasonic Examination	4
0PMP04-DG-0019	Standby Diesel Generator Fuel Injection Pump and Nozzle Assembly Maintenance	21
0PMP04-DG-0023	Standby Diesel Generator Governor Oil Change and Overspeed Trip Test	10
0POP02-DG-0003	Emergency Diesel Generator 13(23)	47
0PSP03-AF-0007	Auxiliary Feedwater Pump 14(24) Inservice Test	34
0PSP03-RC-0006	Reactor Coolant Inventory	21
0PSP04-DG-0002	Standby Diesel Generator 5 Year Inspection	15
0PSP04-DG-0002	Standby Diesel Generator 5 Year Inspection	16
0PSP11-IL-0007	Reactor Containment Building Integrated Leakage Rate Test	7
UTI-003	Manual Ultrasonic Examination of Reactor Coolant Pump Flywheels from the Access Holes	2

WORK AUTHORIZATION NUMBERS

159979	375022	375025
299616	375023	375026
349560	375024	

**Section 1EP2: Alert Notification System Testing**

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION/ DATE</u>
0PGP05-ZV-0007	Prompt Notification System	8

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION/ DATE</u>
0PGP05-ZV-0013	Alert Radio Maintenance and Distribution	0
0PGP05-ZV-0016	Prompt Notification System Implementing Procedure	6, 7
Procedure 23	Activation of the Public Warning System (Matagorda County)	May 28, 2008

**Section 1EP3: Emergency Response Organization Augmentation Testing**

MISCELLANEOUS

<u>TITLE</u>	<u>REVISION/ DATE</u>
Emergency Notification and Response System Operation and Maintenance	1
Emergency Notification and Response System Semi-Annual Test	February 12, 2008
Emergency Notification and Response System Semi-Annual Test	August 26, 2008
Emergency Notification and Response System Semi-Annual Test	February 24, 2009
Emergency Notification and Response System Semi-Annual Test	August 25, 2009

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
0ERP01-ZV-IN03	Emergency Response Organization Notification	13
0PGP05-ZV-0014	Emergency Response Activities	7, 8
0PGP05-ZV-0016	Prompt Notification System Implementing Procedure	6, 7
0PGP05-ZV-0021	Prompt Notification System Changes	0

**Section 1EP4: Emergency Action Level and Emergency Plan Changes**

MISCELLANEOUS

<u>TITLE</u>	<u>DATE</u>
50.54Q Review for STPEGS Emergency Plan, Revision 20-6	June 11, 2008
50.54Q Review for STPEGS Emergency Plan, Revision 20-7	October 20, 2008
50.54Q Review for STPEGS Emergency Plan, Revision 20-8	November 25, 2009

<u>TITLE</u>	<u>DATE</u>
50.54Q Review for STPEGS Emergency Plan, Revision 20-9	December 2, 2009
Design Change Package for the Bay City, Texas, Emergency Operations Facility	December 2, 2009

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
OPGP05-ZV-0010	Emergency Plan Revision	12

**Section 1EP5: Correction of Emergency Preparedness Weaknesses and Deficiencies**

CONDITION REPORTS

08-2344	08-13575	09-8832
08-3474	08-14542	09-9273
08-8325	08-18946	09-11124
08-8333	08-19621	09-14557
08-8552	09-222	09-16764
08-8883	09-613	09-20088
08-12086	09-3049	09-20331
08-12678	09-8506	09-20694

MISCELLANEOUS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION/ DATE</u>
STP-707	Corrective Action Program Policy Statement	1
Audit 08-03	Corrective Action Program Policy Statement	March 5, 2008
Audit 09-01	Internal Audits	March 18, 2009
Report 09-01	Emergency Medical Response Plan	N/A
MN-08-0-40145	Emergency Preparedness Training Program	August 14, 2008
MN-08-0-40200	Emergency Response Exercises and Drills	August 13, 2008
MN-08-9-40215	Emergency Response Activities Schedule	August 20, 2008
MN-08-0-40218	Emergency Response Activities	August 14, 2008
MN-08-0-40537	Corrective Action Program	August 26, 2008

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION/ DATE</u>
MN-08-0-40556	Emergency Preparedness	August 26, 2008
MN-08-0-40825	Emergency Preparedness	August 28, 2008
MN-08-0-40871	Quality Independent Oversight Report for November 2008 through April 2009	September 2, 2008
MN-08-0-41966	Quality Monitoring Report, Emergency Preparedness	October 1, 2008
MN-08-0-42864	Quality Monitoring Report, Emergency Preparedness	October 16, 2008
MN-08-0-44015	Quality Monitoring Report, Emergency Preparedness	November 13, 2008
MN-08-0-44753	Quality Monitoring Report, Emergency Preparedness	December 12, 2008
MN-08-0-44839	Quality Monitoring Report, Emergency Preparedness	January 21, 2009
MN-08-0-44998	Quality Monitoring Report, Emergency Preparedness	December 11, 2008
MN-08-0-45039	Quality Monitoring Report, Emergency Preparedness	December 10, 2008
MN-09-0-46365	Quality Monitoring Report, Emergency Preparedness	January 29, 2009
MN-09-0-48793	Quality Monitoring Report, Emergency Preparedness	April 2, 2009
MN-09-0-49232	Quality Monitoring Report, Emergency Preparedness	April 16, 2009
MN-09-0-50352	Quality Monitoring Report, Emergency Preparedness	May 12, 2009
MN-09-0-50553	Quality Monitoring Report, Emergency Preparedness	May 21, 2009
MN-09-0-51160	Quality Monitoring Report, Emergency Preparedness	June 4, 2009
MN-09-0-51587	Quality Monitoring Report, Emergency Preparedness	June 21, 2009
MN-09-0-52887	Quality Monitoring Report, Emergency Preparedness	August 27, 2009
MN-09-0-53241	Quality Monitoring Report, Emergency Preparedness	August 12, 2009
MN-09-0-54461	Quality Monitoring Report, Emergency Preparedness	September 17, 2009
MN-09-0-55155	Quality Monitoring Report, Emergency Preparedness	October 4, 2009
MN-09-0-55453	Quality Monitoring Report, Emergency Preparedness	October 10, 2009
MN-09-0-55800	Quality Monitoring Report, Emergency Preparedness	October 14, 2009

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION/ DATE</u>
N/A	Drill Evaluation Report: Red Team	January 23, 2007
N/A	Drill Evaluation Report: Red Team	May 6, 2008
N/A	Drill Evaluation Report: Red Team	June 18, 2008
N/A	Drill Evaluation Report: Red Team	July 23, 2008
N/A	Drill Evaluation Report: White Team	August 13, 2008
N/A	Drill Evaluation Report: Health Physics Drill	November 6, 2008
N/A	Drill Evaluation Report: Environmental Monitoring	December 1, 2008
N/A	Drill Evaluation Report: Blue Team	December 4, 2008
N/A	Drill Evaluation Report: Blue Team	May 5, 2009
N/A	Drill Evaluation Report: White Team	June 17, 2009
EPT003.01	Lesson Plan: Emergency Support Database of Critique Comments for Emergency Preparedness Training, May through November 2009	11

#### PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
0PQP01-ZA-0001	Internal Audits	12
0PGP03-ZA-0106	Emergency Medical Response Plan	6
0PGP03-ZT-0139	Emergency Preparedness Training Program	14
0PGP05-ZV-0001	Emergency Response Exercises and Drills	9
0PGP05-ZV-0002	Emergency Response Activities Schedule	10
0PGP05-ZV-0014	Emergency Response Activities	8
0PGP03-ZX-0002	Condition Reporting Process	37

#### **Section 20S1: Access Controls to Radiologically Significant Areas**

#### CONDITION REPORTS

09-9942	09-12731	09-15059
09-10131	09-13589	

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
OPGP03-ZR-0050	Radiation Protection Program	10
OPGP03-ZR-0051	Radiological Access Controls/Standards	25
OPRP04-ZR-0013	Radiological Survey Program	24
OPRP04-ZR-0015	Radiological Posting and Warning Devices	25

RADIATION WORK PERMITS

2009-1-0092                      2009-1-102                      2009-1-0146

**Section 2OS2: ALARA Planning and Controls**

CONDITION REPORTS

09-2896                      09-5329                      09-8691  
09-5299

MISCELLANEOUS

<u>NUMBER</u>	<u>TITLE</u>
09-3450-4	1RE15 ALARA Review Package Letdown Heat Exchanger
09-3450-5	1RE15 ALARA Review Package Incore Instrumentation Room

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
OPRP07-ZR-0010	Radiation Work Permits/Radiological Work ALARA Reviews	24

RADIATION WORK PERMITS

2009-1-0091                      2009-1-0092                      2009-1-0146

**Section 4OA1: Performance Indicator Verification**

CONDITION REPORTS

07-9342                      09-7692                      09-10540  
08-16598                      09-7904                      09-10616  
08-18315                      09-10421                      09-14002  
09-3427

MISCELLANEOUS

<u>TITLE</u>	<u>REVISION</u>
Mitigating Systems Performance Index Bases Document	7
South Texas Project Electric Generating Station Emergency Plan	20-6 through 20-9
Matagorda County Emergency Plan	11

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
0ERP01-ZV-IN01	Emergency Classification	7, 8
0ERP01-ZV-IN02	Notifications to Offsite Agencies	22
0ERP01-ZV-IN07	Offsite Protective Action Recommendations	11
0PGP05-ZN-0007	Preparation and Submittal of NRC Performance Indicators	5
0PGP05-ZV-0013	Performance Indicator Tracking Guide (Emergency Preparedness)	5

**Section 40A2: Identification and Resolution of Problems**

CONDITION REPORTS

08-13702	09-15579	09-19496
09-10502	09-15583	09-19808
09-12039	09-17494	09-19824
09-12808	09-17503	09-19828
09-15199	09-17506	09-20019
09-15317	09-18999	09-20681

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
VTD-Y018-0014	Installation, Operation & Maintenance Instructions for York Model OTK5C1-IMCS Open Turbopak Centrifugal Liquid Chilling Units	5

**Section 4OA3: Event Follow-Up**

CONDITION REPORTS

09-14248

**Section 4OA5: Other Activities**

CONDITION REPORTS

07-1640-133	09-14980	09-17453
07-1640-154	09-15025	09-17879
09-3224-1	09-15686	09-17893
09-13471	09-16386	09-18169
09-13999		

DESIGN CHANGE PACKAGES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION/ DATE</u>
07-1640-1	Reactor Vessel Head, CRDM, CET Column, and RVWLIS Housing Replacement	September 24, 2008
07-1640-12	Relocation of Four CRDM Assemblies and Associated Guide Tubes in the Reactor Vessel Upper Internals Package	September 25, 2008
0801404	DRPI Cables Replacement	6
0801478	Core Exit Thermocouples Replacement	7
08001547	Amended Appendix D (Thermocouple Error Analysis) of South Texas Project 1 & 2, Design Basis Document, Emergency Operating Procedure Setpoints, document number 5Z529ZB01024	0

DRAWINGS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
L5-01EM102	Replacement Reactor Vessel Head Closure Head Project - Closure Head General Assembly 2/2	1
L5-01EM103	Replacement Reactor Vessel Head Closure Head Project - Closure Head Welding 1/3	4

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
L5-01EM104	Replacement Reactor Vessel Head Closure Head Project - Closure Head Welding 2/3	2
L5-01EM108	Replacement Reactor Vessel Head Closure Head Project - Closure Head Penetration Position 2/2	1
L5-01EM113	Replacement Reactor Vessel Head Closure Head Project - Closure Head Welding 3/3	2
L5-01EM114	Replacement Reactor Vessel Head Closure Head Project - Closure Head Machining 4/4	3
L5-01EM119	Replacement Reactor Vessel Head Closure Head Project - Closure head and Nozzle Assembly	2
L5-03BR013	Control Rod Drive Mechanism Pressure Housing Welding Drawing for RVWLIS	1
L5-03BR202	Control Rod Drive Mechanism One Piece Latch Housing	7
10003E28	Internals Disconnect Device Seal Tooling	1
D-WEST-860-017	CET Cabling Schematic	0
E-WEST-869-016	CET Wiring Diagram	0

MISCELLANEOUS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION/DATE</u>
CC09969	Design Calculation: Qualification of the Concrete Foundation for the Old Reactor Vessel Head Interim Storage Facility	0
0105-0100340WN	Vendor Technical Information for External Doc. No. L5-01EM505, Rev. 1, Design Report, Reactor Vessel Closure Head for South Texas Project Nuclear Operating Company	A
0105-0100347WN	Vendor Technical Information for External Doc. No. CN-MRCDA-08-32, Rev. 0 IDD Crank Handle Nut Evaluation for South Texas Project Nuclear Operating Company	A

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION/ DATE</u>
0043-0100023WN	Vendor Technical Information for External Doc. No. CN-RIDA-07-121, Rev. 1 RRVH Thermal Sleeve Analysis for Seismic and LOCA Loads for South Texas Project Nuclear Operating Company	A
0043-0100029WN	Vendor Technical Information for External Doc. No. CN-RIDA-01-124, Rev 0 RRVH Upper Head Region CFD Analysis for South Texas Project Nuclear Operating Company	A
0043-0100232WN	Vendor Technical Information for External Doc. No. DAR-MRCDA-07-11, Rev 0 Core Exit Thermocouple Nozzle Assembly (CETNA) Design Report for South Texas Nuclear Operating Company	A
0105-0100344WN	Vendor Technical Information for External Doc. No. 5-01EM518, Rev 0 Analysis Model for Head Penetration for South Texas Project Nuclear Operating Company	A
0105-0100341WN	Vendor Technical Information for External Doc. No. 419A68, Rev 4 Unit 1 Replacement Reactor Vessel Closure Head (RRVCH) for South Texas Project Nuclear Operating Company	A
0105-0100330WN	Vendor Technical Information for External Doc. No. 5-3BF612, Rev 1 ASME Code XI Reconciliation for South Texas Project Nuclear Operating Company	A
DAR-ME-08-1	Qualification Summary Report for the Core Exit Thermocouple Cable and Connector Upgrade at SouthTexas Project Units 1 and 2	0
DP-ME-08-1	Technical manual for the Core Exit Thermocouple Cable and Connector Upgrade at South Texas Project (STP) Units 1 and 2	0
0105-0100280WN	Vendor Technical Information for External Doc. No. 420A51, Rev. 2, Internals Disconnect Device (IDD) Assembly for South Texas Project Nuclear Operating Company	A
0105-0100279WN	Vendor Technical Information for External Doc. No. 420A58, Rev. 00, Dome and Flange Insulation for RRVH For South Texas Project Nuclear Operating Company	A

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION/ DATE</u>
0115-0100058WN	Vendor Technical Information for External Doc. No. KCS-20060135, Rev. 0, Replacement Thermal Sleeve Design For CRDM and RVLIS for South Texas Project Nuclear Operating Company	A
0185-0101018WN	Vendor Technical Information for External Doc. No. RVHP-TD-06-26, Rev. 3, Reactor Vessel Integrated Head Package CRDM & DRPI Disconnect Plates and Work Platforms Modification – Functional Specification for South Texas Project Nuclear Operating Company	N/A
0185-0101015WN	Vendor Technical Information for External Doc. No. 420A34, Rev. 3, RPV IHP CRDM and DRPI Disconnect Plates and Work Platforms Modification for South Texas Project Nuclear Operating Company	A
0043-0100021WN	Vendor Technical Information for External Doc. No. CN-RIDA-08-6, Rev. 0, Thermal Sleeve Wear Analysis for South Texas Project Nuclear Operating Company	A
0115-0100102WN	Vendor Technical Information for External Doc. No. DAR-ME-07-8, Rev. 00, Technical Evaluation Report for STP CRDM Dry Stepping Up to 1000 Steps for South Texas Nuclear Operating Company	A
0115-0100101WN	Vendor Technical Information for External Doc. No. 419A79, Rev. 2, Control Rod Drive Mechanism (CRDM) Model L-106RL for 14 ft Length Core and Rapid Refueling for South Texas Nuclear Operating Company	A
0115-0100097WN	Vendor Technical Information for External Doc. No. L5-03BR601, Rev. 1, CRDM Design Report (including RVWLIS) for South Texas Nuclear Operating Company	A
0105-0100346WN	Vendor Technical Information for External Doc. No. CN-MRCDA-08-34, Rev. 1, IDD Stress Analysis and ASME Code Evaluation for South Texas Nuclear Operating Company	A
0105-0100362WN	Vendor Technical Information for External Doc. No. LTR-RIDA-08-74, Water Volume Displacement Due to Reactor Vessel Head Design Change for South Texas Nuclear Operating Company	A

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION/ DATE</u>
NR-1130	Certified Material Test Report for Nickel Alloy Filler Metal for GTAW	April 24, 2008
NR-1129	Certified Material Test Report for Nickel Alloy Filler Metal for GTAW	April 24, 2008
L5-01EM407	Vent Pipe Material Purchase Specification	1
UGW-69-030009	ASME Code Job List of Qualified NDE Personnel	32
SBB-STP-317	Welding Procedure Specification	1
SBB-STP-301	Qualified Welding Procedure List	9
STP- RRVCH- SR-015	Magnetic Particle Examination Surveillance Report	April 17, 2007
WES-2007-15	Westinghouse Quality Program Audit Plan	August 9, 2007
L5-01EM702	Material List	1

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
0PDP01-ZE-0001	Design Verification Process	3
0PGP04-ZE-0309	Design Change Package	22
6382PQA	Ultrasonic Examination for Forging Materials	A
UGS-L5-070025	Hydrostatic Test Procedure	1
UGS-L5-070018	PT Procedure (Solvent Removable)	1

**Section 40A7: Licensee-Identified Violations**

CONDITION REPORTS

09-14248

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION/ DATE</u>
0PGP03-ZM-0028	Erection and Use of Temporary Scaffolding	13
0PGP04-ZA-0002	Condition Report Engineering Evaluation	11