



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

May 9, 2005

James J. Sheppard, President and
Chief Executive Officer
STP Nuclear Operating Company
P.O. Box 289
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**SUBJECT: SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION - NRC
INTEGRATED INSPECTION REPORT 05000498/2005002 AND
05000499/2005002**

Dear Mr. Sheppard:

On April 7, 2005, the US Nuclear Regulatory Commission (NRC) completed an inspection at your South Texas Project Electric Generating Station, Units 1 and 2, facility. The enclosed integrated report documents the inspection findings which were discussed on April 14, 2005, with you and members of your staff.

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

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

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be made available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

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

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

Enclosure:
NRC Inspection Report 05000498/2005002 and 05000499/2005002
w/Attachment: Supplemental Information

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ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Dockets: 50-498, 50-499

Licenses: NPF-76
NPF-80

Report No: 05000498/2005002
05000499/2005002

Licensee: STP Nuclear Operating Company

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

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

Dates: January 1 through April 7, 2005

Inspectors: J. Taylor, Senior Resident Inspector
G. Guerra, Resident Inspector
T. Brown, Project Engineer
J. Keeton, Consultant Inspector
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M. E. Murphy, Senior Operations Engineer
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Approved By: W. D. Johnson, Chief
Project Branch A
Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000498/2005002, 05000499/2005002; 01/01/05 - 04/07/05; South Texas Project Electric Generating Station; Units 1 & 2; Integrated Resident Report, Access Control to Radiologically Significant Areas, Problem Identification and Resolution.

The report covered a three month period of inspection completed by the resident inspectors and project engineers and announced inspections by regional inspectors. Four Green noncited violations were identified. The significance of issues is indicated by their color (Green, White, Yellow, or Red) and was determined by the Significance Determination Process in Inspection Manual Chapter 0609. Findings for which the significance determination process does not apply are indicated by the severity level of the applicable violation. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

- Green. A self-revealing noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI was reviewed for several failures of the licensee's problem identification and resolution program to identify and evaluate, and promptly correct a degraded bearing condition and lube water flow problems on Essential Cooling Water Pump 1B. The licensee identified abnormal essential cooling water pump lube water flow conditions and suspected pump bearing damage, conditions adverse to quality, but the licensee's corrective measures were not prompt to evaluate the impact on continued operation. In some cases the licensee did not initiate a condition report.

The failure to document and evaluate adverse conditions in the Corrective Action Program is a performance deficiency because the licensee is expected to follow quality related procedures. This issue was greater than minor because it affected the equipment performance attribute of the Mitigating Systems Cornerstone. The finding had very low safety significance (Green) because the affected equipment remained functional. This issue involved problem identification and resolution crosscutting aspects associated with identifying and evaluating conditions adverse to quality (Section 4OA2.1).

- Green. A self-revealing noncited violation of Technical Specification 3.7.14 was reviewed for Essential Chiller 22C being inoperable for longer than the allowed seven days without required actions being performed. The licensee reported the event on Licensee Event Report 0500499/2005-002.

The failure to maintain Essential Chiller 22C operable in accordance with Technical Specification 3.7.14 is a performance deficiency. The finding was determined to be greater than minor because it affected the equipment performance attribute of the Reactor Safety Mitigating Systems Cornerstone. Additionally, the finding was associated with the operability, availability, and reliability of the essential chiller. During a Phase 1 screening of the Significance Determination Process, the finding was

determined to require a Phase 2 evaluation because it represented actual loss of safety function of a single train for greater than its Technical Specification Allowed Outage Time. After processing through Phase 2, the violation was determined to be of very low safety significance (Green) because the other two trains were operable (Section 40A2.2).

Cornerstone: Occupational Radiation Safety

- Green. The inspector identified two examples of a noncited violation of 10 CFR 20.1902(a) for the failure to conspicuously post radiation areas. Specifically, on March 16, 2005, the inspector observed a radiation area in mechanical auxiliary building Room 49 of Unit 1 that was not conspicuously posted. After the inspector identified the first occurrence, the licensee performed a walkdown of the mechanical auxiliary building and identified an additional inconspicuous posting in Room 79B of Unit 1.

The finding was greater than minor because it is associated with the Occupational Radiation Safety Program and Process attribute and affects the cornerstone objective. The failure to conspicuously post radiation areas could increase personnel dose and does not inform the worker of potential radiological hazards. The finding was determined to be of very low safety significance because it did not involve: (1) ALARA planning and controls, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose. Additionally, this finding had crosscutting aspects associated with human performance because personnel did not ensure the radiological postings remained conspicuous which directly contributed to the finding. These findings were placed into the licensee's corrective action program as Condition Reports 2005-3750 and 2005-3802 (Section 2OS1).

- Green. The inspector reviewed a self-revealing, noncited violation of Technical Specification 6.12.2. A reactor operator failed to obtain an appropriate radiological briefing and a radiation protection technician failed to provide continuous surveillance in a high radiation area with dose rates greater than 1000 millirem per hour. Specifically, on March 17, 2005, a reactor operator entered the Unit 1 reactor containment building Room 307 and received a dose rate alarm. The reactor operator did not obtain dose rates for work near the regenerative heat exchanger and the radiation protection technician accompanying the operator did not enter the room to provide continuous surveillance. General area dose rates in the room were as high as 3000 millirem per hour.

The finding was greater than minor because it is associated with the Occupational Radiation Safety Program and Process attribute and affects the cornerstone objective. The failure to obtain an appropriate radiological briefing and provide continuous surveillance in a high radiation area greater than 1000 millirem per hour could increase personnel dose. The finding was determined to be of very low safety significance because it did not involve: (1) ALARA planning and controls, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose. Additionally, this finding had crosscutting aspects associated with human performance because the reactor operator did not obtain an appropriate radiological briefing and the

radiation protection technician did not provide continuous surveillance. This finding was placed into the licensee's corrective action program as Condition Report 2005-3779 (Section 2OS1).

B. Licensee-Identified Violations

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

REPORT DETAILS

Summary of Plant Status

On March 8, Unit 1 commenced reducing reactor power and subsequently shut down for scheduled outage 1RE12. The unit had operated at essentially 100 percent power up to that date during the inspection period.

On February 9, Unit 2 **reduced reactor power and shut down** to mode 5 to repair a reactor coolant system leak as required by Technical Specification 3.4.6.2. After repairs were made, the Unit returned to 100 percent power on February 17 and remained there for the rest of the period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R04 Equipment Alignment (71111.04)

.1 Partial System Walkdown

a. Inspection Scope

The inspectors conducted five partial walkdowns of the following risk-significant systems to verify that they were in their proper standby alignment as defined by system operating procedures and system drawings. During the walkdowns, inspectors examined system components for material conditions that could degrade system performance. In addition, the inspectors evaluated the effectiveness of the licensee's problem identification and resolution program in resolving issues which could increase event initiation frequency or impact mitigating system availability.

- On January 10, the inspectors verified the condition of the Unit 1 Train A essential cooling water system. This walkdown was performed while the Train B essential cooling water system was out of service for emergent maintenance. The inspectors compared system equipment and control board lineups to Plant Operating Procedure OPOP02-EW-0001, "Essential Cooling Water Operations," Revision 33.
- On January 19, the inspectors verified the condition of the Unit 1 engineered safety features gaseous radiation monitors for the containment building, fuel handling building, and the control room. The walkdown was performed with the system engineer to access the circuit panels and to verify the proper equipment lineup. The inspectors also examined component condition.
- On February 3, the inspectors verified the condition of the Unit 1 component cooling water system. The inspectors compared system equipment and control board lineups to Plant Operating Procedure OPOP02-CC-0001, "Component Cooling Water," Revision 26.
- On March 2, the inspectors verified the condition of the Unit 1, Train B 4160 volt safety bus with the system engineer. The inspectors compared system

equipment and control board lineups to Plant Operating Procedure 0POP02-AE-0001, Revision 14 and discussed the fourth quarter 2004 system health report and outage activities scheduled.

- On March 24, the inspectors verified the condition of the Unit 1 spent fuel pool (SFP) cooling system. SFP Cooling Pump 1A had been restored to normal from a temporary power modification. The inspectors compared system equipment and control board lineups to Plant Operating Procedure 0POP02-FC-0001, "Spent Fuel Pool Cooling and Cleanup System," Revision 44.

b. Findings

No findings of significance were identified.

2. Semi-Annual System Walkdown

a. Inspection Scope

The inspectors completed a detailed system walkdown of the accessible portions of the Unit 2 Emergency Diesel Generator 21 on March 29. The inspectors verified that the system was in a proper standby alignment and that components were in good condition. The system walkdown included checking the control board, valve, and electrical lineups. The inspectors referenced Plant Operating Procedure 0POP02-DG-0001, "Emergency Diesel Generator 11(21)," Revision 38, applicable piping and instrumentation drawings, and the Updated Final Safety Analysis Report information on this system. The inspectors discovered a missing handle on Valve 2-LU-3073, "L.O. FILTER HI DP IND SWITCH 2-LU-PDISH-5488 LT TEST VALVE." The licensee was informed and entered the discrepancy into their corrective action program.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

a. Inspection Scope

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

- (Unit1) Essential Cooling Water Rooms 100-103, on January 10 (Fire Zones Z53-55)
- (Unit 1 and 2) Plant Computer and Relay Room Halon Storage Rooms and Technical Support Center Halon Storage Rooms, on January 14 and 18(Fire Zones Z037, Z082)
- (Unit1) Component Cooling Water Rooms 106 , 067F, 017 on February 3 (Fire Zones Z142 and Z139)
- (Unit 1) Relay Cabinet Area Room 202, on March 10 (Fire Zone Z032)
- (Unit 2) Relay Cabinet Area Room 202, on March 10 (Fire Zone Z032)
- (Unit1) Spent Fuel Pool Pump Rooms, on March 24(Fire Zones Z311, Z319, Z320)
- (Unit 2) Diesel Generator Building, Train A and Train C, on March 30 (Fire Zones Z502, Z508, Z511, Z500, Z506, Z509)

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

During the week of March 28 the inspectors verified that the licensee's flooding mitigation plans and equipment were consistent with the licensee's design requirements and risk-analysis assumptions in the Updated Final Safety Analysis Report. The inspection included a review of flood analysis documentation and calculations to determine areas susceptible to flooding from internal sources. A walkdown of the Unit 2 isolation valve cubicle building was completed. This building contained redundant trains of auxiliary feedwater, steam generator power operated relief valves, main steam isolation valves, and feedwater isolation valves. The inspectors assessed the adequacy of flood protection measures regarding a postulated flood and verified that the mitigating systems defined in the flood analysis were in place and functional.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance (71111.07A)

a. Inspection Scope

The inspectors reviewed test results of the Unit 1 essential cooling water heat exchangers, March 30-31, 2005. Review and assessment of the test results were performed against the performance criteria in Plant Engineering Procedure OPEP07-EW-0001, "Performance Test For Essential Cooling Water Heat Exchangers," Revision 6. Discussions were held with the system engineer and the results from the last performance were compared.

b. Findings

No findings of significance were identified.

1R08 Inservice Inspection Activities (71111.08P)

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

a. Inspection Scope

The inspection procedure requires review of two or three types of nondestructive examination activities, one to three welds on the reactor coolant system pressure boundary, if performed, and one or two examinations with recordable indications that have been accepted for continued service.

The inspector observed three nondestructive examinations including visual, surface and volumetric examinations as follows:

<u>System</u>	<u>Component/Weld Identification</u>	<u>Examination Method</u>
Essential Cooling Water	Essential Cooling Pump 2B Support (Floor mount)	Visual
Containment Spray	Containment Spray Pump 1A Upper Case to Lower Case Weld	Liquid Penetrant
Reactor Coolant	Pressurizer Safety Nozzle Inner Radius	Ultrasonic

During the review and observation of each examination, the inspectors verified that activities were performed in accordance with ASME Boiler and Pressure Vessel Code requirements and applicable procedures. No defects or reportable flaws were detected during the examinations. The qualifications of the two nondestructive examination technicians performing the inspections were verified to be current.

Records from one example of welding on the reactor coolant system pressure boundary were examined. A 4-inch chemical and volume control system letdown isolation motor-operated valve was repaired by seal welding the valve body to the valve bonnet. This was performed under licensee's Work Control Document CV-424506. Examination and testing of the welding repair conformed to ASME Code requirements.

The inspectors reviewed records from two nondestructive examinations with recordable indications which were accepted for continued service. The licensee's acceptance was found to be comply with applicable ASME code requirements. The activities reviewed are documented in the licensee's corrective action program in Condition Reports (CR) CR-04-5159 and CR-04-5328.

b. Findings

No findings of significance were identified.

.2 Pressurized Water Reactor Vessel Upper Head Penetration Inspection Activities.

a. Inspection scope.

If the licensee is performing visual examinations of the reactor vessel upper head penetrations, the inspector should observe portions of this examination or review the post examination videotape and examination procedures. In particular, the inspector should review licensee criteria for confirming visual examination quality and instructions resolving interference or masking issues.

Section 02.02 was not required. The requirements of Temporary Instruction 2515/150, "Reactor Pressure Vessel Head and Vessel Head Penetration Nozzles (NRC Order EA-03-009)," Revision 2, had been previously completed and no inspections were performed during this outage.

b. Findings

No findings of significance were identified.

.3 Boric Acid Corrosion Control Inspection Activities

a. Inspection scope.

The procedure requires review of a sample of boric acid corrosion control walkdown visual examinations through either direct observation or record review. Visual inspections should emphasize locations where boric acid leaks can cause degradation of safety significant components. In addition, if boric acid residue is detected, the inspector should review one to three engineering evaluations performed for boric acid residue found on reactor coolant system piping and components, and review one to three corrective actions performed for evidence of boric acid leaks identified.

The inspectors observed a visual examination of the lower reactor pressure vessel head penetration nozzles, which meets the requirement for a direct observation of a sample of visual examinations and that the component be safety significant. The examination was conducted by removing three insulation panels surrounding the lower head with 120 degree spacing so that all 58 penetration nozzles could be seen clearly with a 360 degree perspective. No boric acid residue was found at any nozzle/reactor pressure vessel interface. During the previous outage, 2 of the 58 bottom mounted instrument penetrations were found to be leaking and were repaired. No evidence of further leakage from the repaired nozzles was found.

Since there was no boron residue found on the lower head penetration nozzles, the inspector did not review any engineering evaluations or corrective actions associated with boric acid leaks.

The inspectors reviewed the results of the licensee's reactor pressure vessel upper head visual walkdowns.

b. Findings

No findings of significance were identified.

.4 Steam Generator Tube Inspection Activities

a. Inspection scope.

The inspection procedure requires detailed evaluation of steam generator tube inspection and testing activities, including in-situ pressure testing, eddy current examination, repair of steam generator tubes with flaws, and loose parts corrective actions.

Steam generator tube inspections were not performed during the period of this inspection, and thus inspection activities could not be performed.

b. Findings.

No findings of significance were identified.

.5 Identification and Resolution of Problems

a. Inspection scope.

The inspection procedure requires review of a sample of problems associated with inservice inspections and steam generator inspections documented by the licensee in the corrective action program for appropriateness of the corrective actions.

The inspectors reviewed five corrective action reports, listed in the attachment, which dealt with inservice inspection activities and found the corrective actions were appropriate. From this review, the inspector 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.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification (71111.11)

a. Inspection Scope

On February 2, the inspectors evaluated Crew 2D during licensed operator simulator requalification training. The inspectors observed a control room simulator scenario that included a **reactor trip, a reactor coolant pump shaft shear, and a steam generator tube rupture**. The inspectors evaluated the performance of Crew 2D for clarity and formality of communications, the correct use of procedures, performance of high risk operator actions, monitoring of critical safety functions, and the oversight and direction provided by the shift supervisor. The inspectors observed the operators' use of emergency action levels and protective action recommendations for accuracy and timeliness, reviewed the scenario sequence and objectives, observed the training critique, and discussed the crew's performance with training instructors. In addition, the inspectors attended the critique held by the operating crew to assess individual performance and training effectiveness.

b. Findings

No findings of significance were identified.

.1 Biennial Inspection

a. Inspection Scope

The inspectors reviewed the annual operating examination test results for 2004 conducted October 11 through November 18, 2004. Since this was the first half of the biennial requalification cycle, the licensee had not yet administered the written examination. These results were assessed to determine if they were consistent with NUREG 1021, "Operator Licensing Examination Standards for Power Reactors," Revision 8, Supplement 1, guidance and Manual Chapter 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process," requirements. This review included examination of test results, which included no crew failures out of 16 total crews and one job performance measure individual failure out of a total of 98 licensed operators. The individual who failed was remediated and re-examined prior to return to watch standing duty.

b. Findings

No findings of significance were identified.

1R12 Maintenance Implementation (71111.12)

a. Inspection Scope

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

- (Unit 1) Essential Cooling Water Pump 1B lowering trend in lube water flow

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

b. Findings

An unplanned pump overhaul was performed beginning January 4, 2005, due to a lowering trend in lube water flow. This resulted in the pump exceeding the maintenance rule unavailability performance criteria and (a)(1) unavailability goal. The system was already in the (a)(1) category. The licensee determined that no maintenance rule functional failure occurred because the pump was still functional. The licensee determined that although lube water flow had degraded that there was still sufficient flow for continued operation for a 30 day period, indicating that the pump would perform its design mission, at the time the pump was shut down for overhaul. Further information on this event can be found in Section 4OA2. No findings of significance were identified.

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

a. Inspection Scope

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

- (Unit 2) Evaluation of medium risk inspection of 480 Vac motor control center contactors for loose contact cover retainer clips on January 11 (CR 04-16741, Evaluation 1316 for Work Authorization Number (WAN) 289069)
- (Unit 1) Evaluation of medium risk work on moisture separator drip tank 11B pump motor bearing replacement on February 2 (CR 04-13311-11, Evaluation 1284 for WAN 285861)
- (Unit 2) Evaluation of medium risk work on replacing Steam Generator Feed Pump 23 power supply No.1 on February 24 (CR 05-2244, Evaluation 1347 for WAN 292841)
- (Unit 1) Evaluation of medium risk work to disable the valve position error feature for the high pressure governor valves of the steam generator feed pumps on March 2 (CR 05-1827, Evaluation 1348 for WAN 292844)
- (Unit 1) Evaluation of medium risk work to replace the motor of condensate Pump 13 on March 3 (CR 03-5387, Evaluation 1343 for WAN 260670)
- (Unit 2) Evaluation of medium risk work to open/close Breaker Y-600 to de-energize Skyline transmission line on March 24 (Evaluation 1355)

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Nonroutine Plant Evolutions (71111.14)

a. Inspection Scope

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

- (Unit 1) Fuel reshuffle in spent fuel pool in preparation for outage on January 11 and new fuel receipt on February 9.
- (Unit 2) Technical Specification shutdown to Mode 5 for reactor coolant system leak on Accumulator "A" vent line (RC-127) on February 9.
- (Unit 2) Restart from Mode 5 to 100% power on February 17.
- (Unit 1) Approach to and recovery from mid-loop operations for Steam Generator D primary inspection in Mode 5 on April 4-5.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors selected five operability evaluations conducted by licensee personnel during the report period involving risk-significant systems or components. The inspectors evaluated the technical adequacy of the licensee's operability determination, determined whether appropriate compensatory measures were implemented, and determined whether pre-existing plant conditions were considered, as applicable. Additionally, the inspectors evaluated the adequacy of the licensee's problem identification and resolution program as it applied to operability evaluations. Specific operability evaluations reviewed are listed below:

- (Unit 1) Essential Cooling Water Pump 1B degrading trend in lubrication water flow (CR 04-16775-2) on January 5
- (Units 2) Relay Room and 72' computer halon fire suppression systems actuation tubing incorrect connections (CR 05-818-3) on January 26.
- (Unit 2) Essential Cooling Water motor control center E2B2 degrading trend in Cable B2PMABC1LC and D insulation resistance (CR 05-1384-1) on February 7.
- (Unit 2) Mode 2 change without testing turbine driven auxiliary feedwater pump (CR 05-2324-1) on February 18.
- (Unit 1 and 2) standby diesel generator lack of surveillance test for emergency trip signal to the sequencer (CREE 05-2817) on March 3.

b. Findings

No findings of significance were identified.

1R16 Operator Workarounds (71111.16)

a. Inspection Scope

The inspectors reviewed licensee-identified operator workarounds and other existing equipment conditions with the potential to be workarounds to verify that they had been identified and assessed in accordance with STP's Operator Burden Program and to determine if the functional capability of the system or human reliability in responding to initiating events had been affected. The ability of operators to implement normal and emergency operating procedures with the existing equipment issues was specifically evaluated. The following item was reviewed:

- (Unit 1) Cumulative - Operator Burden Program list for Unit 1 Parts A and B on February 3 (CRs reviewed are listed in the Attachment)

b. Findings

No findings of significance were identified.

1R19 Postmaintenance Testing (71111.19)

a. Inspection Scope

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

- (Unit 1) Plant Surveillance Procedure 0PSP03-EW-0011, "Essential Cooling Water Pump 1B(2B) Reference Values Measurement," Revision 10, review of postmaintenance testing performed on January 10.
- (Unit 1) Plant Operating Procedure 0POP03-EH-0001, "Main Turbine Electro-Hydraulic Control System," Revision 22, Pump 12 run after pulsation damper bladder replaced on February 15.
- (Unit 2) Replacement of power supply No.1 for Steam Generator Feed Pump Turbine 23 on February 15.

b. Findings

No findings of significance were identified.

1R20 Refueling Outage (71111.20)

a. Inspection Scope

The inspectors reviewed the major work and weekly outage risk assessments on an ongoing basis to assess completeness, accuracy, and adequacy of risk management for Refueling Outage 1RE12 from March 8 to April 17. The inspectors also observed the unscheduled outage planning, shutdown, RCS leak repair and startup of Unit 2 from February 9 -17. The inspectors used Inspection Procedure 71111.20 to perform the following inspection activities.

Refueling

The inspectors observed refueling activities from the control room, radiation protection control center, and during containment tours to determine if these activities were conducted in accordance with the Technical Specifications and administrative procedures.

Maintaining Plant Conditions

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

Monitoring of Heatup and Startup Activities

The inspectors observed control room operations and reviewed control room logs to verify that the unit operational mode changes, including heatup and startup activities, were conducted in compliance with the applicable Technical Specifications and administrative procedures. Additionally, Plant Operating Procedure OPOP03-ZG-0005, "Reactor Startup to 100%," Revision 48, was reviewed.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors evaluated the adequacy of seven periodic tests of important nuclear plant equipment. This review included aspects such as preconditioning, the impacts of testing during plant operations, the adequacy of acceptance criteria, test frequency, procedure adherence, record keeping, the restoration of standby equipment, test equipment and the effectiveness of the licensee's problem identification and resolution program. The inspectors observed or reviewed the following tests:

- (Unit 1) Plant Surveillance Procedure 0PSP03-AF-0007, "Auxiliary Feedwater Pump 14 Inservice Test," Revision 30, on January 13 (WAN 266896)
- (Unit 1) Plant Surveillance Procedure 0PSP11-ZH-0009, "EAB and FHB HVAC In-Place Adsorber Leak Test," Revision 19, on January 24 (Wan 261535)

- (Unit 1) Plant Surveillance Procedure 0PSP03-CV-0002, "Centrifugal Charging Pump 1B(2B) Inservice Test," Revision 21, on February 6 (WAN 270945)
- (Unit 1) Plant Operational Procedure 0POP07-MS-0003, "Main Turbine Steam Inlet Valve Test," Revision 3, for stroking of throttle Valve No. 3, on February 15 (Wan 283607)
- (Unit 1) Plant Surveillance Procedure 0PSP03-PS-0001, "Primary Sampling System Valve Operability Test," Revision 11, on March 1 (WAN 270390)
- (Unit 2) Plant Surveillance Procedure 0PSP03-DG-0002, "Standby Diesel Generator 12(22) Operability Test," Revision 26, on March 1 (WAN 269093)
- (Unit 1) Plant Surveillance Procedures 0PSP06-DJ-0007, "125 Volt Class 1E Battery Combined Service and Performance Surveillance Test," Revision 2 and 0PSP06-DJ-0002, "125 Volt Class 1E Battery Quarterly Surveillance Test," Revision 14, on March 25 (WAN 266131)

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors reviewed the three temporary modification packages listed below. The inspectors assessed the following attributes to the extent practical: (1) the adequacy of the safety evaluation; (2) the consistency of the installation with the modification documentation; (3) the updating of drawings and procedures, as applicable; and (4) the adequacy of the post-installation testing. The inspectors held discussions with the assigned engineers and walked down the temporary modifications.

- T1-04-9119-49, Distribution Panel 48A temporary power source on January 18 (WAN 279646)
- T1-03-5910-22, removal of residual heat removal system low flow trip from Residual Heat Removal Pump1A control circuit on February 15 (WAN 290520)
- TL2-04-10519-6, Revision 1, Furmanite leak seal of CVCS normal charging valve on February 22 (WAN 284083)

b. Findings

No findings of significance were identified.

1EP2 Alert and Notification System Testing (71114.02)

a. Inspection Scope

The inspectors evaluated the results of the Emergency Planning Zone (EPZ) siren and radio test on February 23 and several subsequent days. Several residents of the Matagorda beach front community (outside the EPZ but evacuation requires transiting through the EPZ) had been interviewed. Results indicated that sirens were audible in the area. Some residents had not received test notification but were aware of the occasional tests performed. Some residents were unaware they could obtain Emergency Alert Radios from the Licensee and one resident's radio was obsolete. It was subsequently replaced by the licensee. The inspectors discussed with the licensee the possibility of posting a notice of testing on the Matagorda post office bulletin board, this is a major communication avenue for the area residents not served by postal delivery to residences. Backup notification of residents during an actual emergency is provided by local law enforcement agencies.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety [OS]

2OS1 Access Control To Radiologically Significant Areas (71121.01)

a. Inspection Scope

This area was inspected to assess the licensee's performance in implementing physical and administrative controls for airborne radioactivity areas, radiation areas, high radiation areas, and worker adherence to these controls. The inspector 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 inspector interviewed the radiation protection manager, radiation protection supervisors, and radiation workers. The inspector 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 three radiation, high radiation, or airborne radioactivity areas
- Radiation work permit, procedure, engineering controls, and air sampler locations

- Conformity of electronic personal dosimeter alarm set points with survey indications and plant policy; workers' knowledge of required actions when their electronic personnel dosimeter noticeably malfunctions or alarms.
- Barrier integrity and performance of engineering controls in two potential airborne radioactivity areas
- Adequacy of the licensee's internal dose assessment for any actual internal exposure greater than 50 millirem CEDE
- Physical and programmatic controls for highly activated or contaminated materials (non-fuel) stored within spent fuel and other storage pools.
- Self-assessments, observations, and audits related to the access control program since the last inspection
- Corrective action documents related to access controls
- Licensee actions in cases of repetitive deficiencies or significant individual deficiencies
- Radiation work permit briefings and worker instructions
- Adequacy of radiological controls such as, required surveys, radiation protection job coverage, and contamination controls during job performance
- Dosimetry placement in high radiation work areas with significant dose rate gradients
- Changes in licensee procedural controls of high dose rate - high radiation areas and very high radiation areas
- Controls for special areas that have the potential to become very high radiation areas during certain plant operations
- 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:
- Licensee event reports and special reports related to the access control program

The inspector completed 21 of the required 21 samples.

b. Findings

- .1 Introduction. The inspectors identified two examples of a noncited violation of 10 CFR 20.1902(a) for the failure to conspicuously post radiation areas. The violation had very low safety significance.

Description. The first example was identified on March 16, 2005, when the inspector observed a radiation area at the entrance to Room 49 in Unit 1 that was not conspicuously posted. The radiological posting was flipped up and over an air duct leading into the room. The posting was in a position such that it could not be read. The highest general area radiation reading in the area was 10 millirem per hour.

The second example was identified on March 17, 2005, when the licensee performed a walkdown of the mechanical auxiliary building for additional inconspicuous postings. Room 79B in Unit 1 was found to have a non-radiological sign obscuring the radiation area posting. Since the walkdown was initiated by the first finding, this occurrence is considered NRC identified.

Analysis. The failure to conspicuously post radiation areas is a performance deficiency. This finding was greater than minor because it is associated with the Occupational Radiation Safety Program and Process attribute and affects the cornerstone objective because the failure to conspicuously post a radiation area could increase personnel dose and does not inform the worker of potential radiological hazards. This occurrence involved workers' unplanned, unintended dose, or potential for such a dose that could have been significantly greater as a result of a single minor, reasonable alteration of the circumstances; therefore, this finding was evaluated with the Occupational Radiation Safety Significance Determination Process. The inspector determined that the finding was of very low safety significance because it did not involve: (1) ALARA planning and controls, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose.

Additionally, this finding had crosscutting aspects associated with human performance because personnel did not ensure the radiological postings remained conspicuous which directly contributed to the finding.

Enforcement. 10 CFR 20.1902(a) states, in part, that a radiation area shall be conspicuously posted with a sign or signs. However, personnel failed to ensure that the radiological postings remained conspicuous. These findings were documented in the licensee's corrective action program as Condition Reports 2005-3750 and 2005-3802. Because this violation was of very low safety significance and was entered into the licensee's corrective action program, it is being treated as a noncited violation, consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000498/200502-01, Failure to conspicuously post radiation areas.

- .2 Introduction. A self revealing noncited violation was reviewed for failure to comply with Technical Specification 6.12.2. A reactor operator failed to obtain an appropriate radiological briefing and a radiation protection technician failed to provide continuous surveillance in a high radiation area with dose rates greater than 1000 millirem per hour.

Description. On March 17, 2005, a reactor operator entered the Unit 1 Reactor Containment Building Room 307 to verify valve line-up and clearances and received a dose rate alarm. The reactor operator did not obtain dose rates for work near the regenerative heat exchanger and the radiation protection technician accompanying the operator did not enter the room to provide continuous surveillance. General area dose rates in the room were as high as 3000 millirem per hour.

Analysis. The finding was greater than minor because it is associated with the Occupational Radiation Safety Program and Process attribute and affects the Cornerstone objective. The failure to obtain an appropriate radiological briefing and continuous surveillance in a high radiation area greater than 1000 millirem per hour could increase personnel dose. The finding was determined to be of very low safety significance because it did not involve: (1) ALARA planning and controls, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose.

In addition, this finding had a crosscutting aspect with respect to human performance because the reactor operator did not obtain an appropriate radiological briefing and the radiation protection technician did not provide continuous surveillance.

Enforcement. Technical Specification 6.12.2 states, in part, that prior to entry into a high radiation area with radiation levels greater than 1000 millirem per hour but less than 500 rads per hour individuals shall be informed of the dose rate levels in the immediate work areas and a stay time for that area. In lieu of the stay time specification, direct or remote continuous surveillance may be made by individuals qualified in radiation protection procedures to provide positive exposure control over the activities being performed within the area. However, the reactor operator and radiation protection technician did not comply with Technical Specification 6.12.2. This finding was placed into the licensee's corrective action program as Condition Report 2005-3779. Because this violation was of very low safety significance and was entered into the licensee's corrective action program, it is being treated as a noncited violation, consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000498/200502-02, Failure to comply with Technical Specification 6.12.2.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

.1 Occupational Radiation Safety

a. Inspection Scope

The inspectors sampled licensee submittals for the performance indicators (PIs) listed below for the period from April 2004 through March 2005. To verify the accuracy of the PI data reported during that period, PI definitions and guidance contained in NEI 99-02, "Regulatory Assessment Indicator Guideline," Revision 2, were used to verify the basis in reporting for each data element.

- Occupational Exposure Control Effectiveness PI

Licensee records reviewed included corrective action documentation that identified occurrences of locked high radiation areas (as defined in the licensee's Technical Specifications), very high radiation areas (as defined in 10 CFR 20.1003), and unplanned personnel exposures (as defined in NEI 99-02). Additional records reviewed included ALARA records and whole body counts of selected individual exposures. The inspector interviewed licensee personnel that were accountable for collecting and evaluating the PI data. In addition, the inspector toured plant areas to verify that high radiation, locked high radiation, and very high radiation areas were properly controlled.

b. Findings

No findings of significance were identified.

.2 Public Radiation Safety Cornerstone

a. Inspection Scope

The inspectors sampled licensee submittals for the PIs listed below for the period from April 2004 through March 2005. To verify the accuracy of the PI data reported during that period, PI definitions and guidance contained in NEI 99-02, "Regulatory Assessment Indicator Guideline," Revision 2, were used to verify the basis in reporting for each data element.

- Radiological Effluent Technical Specification/Offsite Dose Calculation Manual
Radiological Effluent Occurrences

Licensee records reviewed included corrective action documentation that identified occurrences for liquid or gaseous effluent releases that exceeded PI thresholds and those reported to the NRC. The inspector interviewed licensee personnel that were accountable for collecting and evaluating the PI data.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

.1 Review of Essential Cooling Water (ECW) Pump 1B Lube Water Flow Problem

a. Inspection Scope

The inspectors evaluated the effectiveness of the licensee's problem identification and resolution processes regarding ECW Pump 1B lowering trend in lube water flow. The pump problems were documented by the licensee in several condition reports. The licensee's extent of condition assessment, operability assessment, and maintenance plan were reviewed and discussed with engineering and operations personnel. The inspectors evaluated the condition records against the requirements in the licensee's Corrective Action Program and 10 CFR Part 50, Appendix B.

b. Findings and Observations

Introduction. A Green self-revealing noncited violation was identified for several failures of the licensee's problem identification and resolution program to identify and evaluate, and promptly correct a degraded bearing condition and lube water flow problems on ECW Pump 1B.

Description. On January 4, 2005, ECW Pump 1B was declared inoperable due to bearing lube water flow approaching the limit for allowable operation. Degradation of the pump bearings was identified during post-maintenance testing after a rebuild in February 2003. However, the corrective action process did not formally evaluate the effect of this degraded condition until January 2005. Initially lube water flow was higher than normal due to increased bearing clearances from damage that occurred to the pump during the initial start after rebuild. As the middle bearing and shaft sleeve o-ring degraded, effluent inleakage caused lube flow to decrease. The degrading condition of ECW Pump 1B was not recognized, although there were several condition reports written for anomalous lube water flow alarms and indications; also, a decreasing trend of lube water flow had existed for over a month before action was taken to evaluate pump operability. The middle bearing had begun to disintegrate when the pump was started after the previous rebuild in February 2003 and the majority of it was gone at the time of this rebuild in January 2005. The licensee determined that the pump remained operable and even though lube water flow had degraded, there was still sufficient flow for continued operation for a 30 day period. This indicated that the pump would perform its design mission at the time the pump was shut down for overhaul. This evaluation was appropriate because a sufficient amount of cooling water was still being supplied to the bearings and would have continued. However, the pump was already missing its middle bearing and unfiltered lube water would have continued to degrade the pumps lower bearings if continued operation was allowed. The following examples were determined to be failures of the licensee's corrective action program.

Failure to initiate a condition report when lube water flow was found to be higher than expected at startup from rebuild. On March 1, 2003, during the initial pump run following an overhaul, high lube water flow was noticed. Because lube water flow was not part of the surveillance acceptance criteria the pump was declared operable. Although, this condition was discussed among operations and engineering personnel, no condition report was written.

Failure to evaluate condition of flow alarms. Between September 2003 and November 2004, several condition reports were written for lube water filter delta-pressure alarms and lube water low pressure alarms. These condition reports were not evaluated against the performance of the other trains. (CR 04-7528, 04-8513, 04-13458, 04-4069, 04-1265, 04-1042, 04-467, 03-18733, 03-13856)

Failure to evaluate impact of bearing damage. On March 27, 2004, operators questioned high lube water flow; however, engineering responded that bearing clearances were larger due to suspected damage on startup from improper assembly or lack of flow during startup after the last rebuild. The condition report was closed based on the fact that packing leakoff was normal. Although bearing damage was recognized, no action was taken to evaluate continued operation of the pump (CR 04-3504).

Failure to initiate a condition report when a degrading trend was identified. On December 18, 2004, an operator noticed that lube water flow was lower than typical. Review of logs indicated a decreasing trend since mid November from approximately 17 gpm to 9 gpm. No condition report was initiated. Several operations crews questioned engineering about the trend and engineering responded that they were looking into it. On December 30, 2004, CR 04-16775 was written to document the condition and a 5 gpm trigger was established for monitoring. On January 2, 2005, an operability review was requested on CR 04-16775. On January 4, 2005, the pump was declared inoperable and was shut down for overhaul.

Analysis. The failure to document and evaluate adverse conditions in the Corrective Action Program is a performance deficiency because the licensee is expected to follow quality related procedures. Traditional enforcement does not apply because the issue did not have any actual safety consequences or potential for impacting the NRC's regulatory function and was not the result of any willful violation of NRC requirements or South Texas Project procedures. This issue is greater than minor because it affected the equipment performance attribute of the Mitigating Systems Cornerstone objective of ensuring availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using the Phase 1 worksheets in Manual Chapter 0609, "Significance Determination Process," the inspectors determined that the finding had very low safety significance (Green) because the affected equipment remained functional. This issue involved problem identification and resolution crosscutting aspects associated with identifying and evaluating conditions adverse to quality.

Enforcement. 10 CFR Part 50, Appendix B, Criterion XVI (Corrective Actions), states, in part, that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected. Contrary to this requirement, the licensee identified abnormal essential cooling water pump lube water flow conditions and suspected pump bearing damage, but the licensee's corrective measures were not prompt to evaluate the impact on continued operation. In some cases the licensee did not initiate a condition report. Because the violation was of very low safety significance, and was entered into the licensee's corrective action program (Condition Report CR 04-16775 and 05-90), this violation is being treated as a NCV, consistent with Section VI.A of the NRC Enforcement Policy (NCV 05000498/2005002-03)

.2 Review of Essential Chiller 2C failure to start

a. Inspection Scope

The inspectors evaluated a human performance issue regarding Essential Chiller 22C being inoperable for longer than the allowed seven days without required Technical Specification actions being performed. The problem was documented by the licensee in Licensee Event Report (LER) 0500499/2005-002. The licensee's corrective actions, extent of condition assessment, and plans to prevent recurrence were reviewed and

discussed with operations personnel. The inspectors evaluated the condition record against the requirements in the licensee's Corrective Action Program and 10 CFR Part 50, Appendix B.

b. Findings and Observations

Introduction. A Green self-revealing NCV was identified for Essential Chiller 22C being inoperable for longer than the allowed seven days without required actions being performed. The licensee reported the event on LER 0500499/2005-002.

Description. On February 28, 2005, Essential Chiller 22C failed to run due to the pump becoming air bound. Air was introduced to the system due to removal of nitrogen overpressure from the system expansion tank approximately 10 days earlier during routine maintenance. The system was idle during the period and required frequent draining of the expansion tank to clear high level alarms. The frequent alarms and draining of the system were not recognized as abnormal conditions for the state of the system. This resulted in voids in the system. When nitrogen was restored to the expansion tank, tank level went below available indication and makeup water was added to restore level to normal but voids were not removed. The system was successfully started after extensive static venting

Analysis. The failure to maintain Essential Chiller 22C operable in accordance with Technical Specification 4.7.14 is a performance deficiency. The finding was determined to be greater than minor because it affected the equipment performance attribute of the reactor safety mitigating system cornerstone. Additionally, the finding was associated with the operability, availability and reliability of the essential chiller. During a Phase 1 screening using the Significance Determination Process, the finding was determined to require Phase 2 evaluation because it represented actual loss of the safety function of a single train for greater than its Technical Specification Allowed Outage Time. After processing through Phase 2, the violation was determined to be of very low safety significance (Green) because two other trains of equipment were operable. This issue involved problem identification and resolution crosscutting aspects associated with human performance.

Enforcement. Technical Specification 3.7.14 requires restoration of three loops of chillers to operable status within seven days or be in at least HOT STANDBY within the next six hours. Contrary to this requirement, the licensee did not complete actions required for approximately ten days. Because the violation was of very low safety significance and was entered into the licensee's corrective action program (Condition Report CR 05-2710), this violation is being treated as a NCV, consistent with Section VI.A of the NRC Enforcement Policy (NCV 05000499/2005002-04)

.3 Daily Condition Record Review

a. Inspection Scope

As required by Inspection Procedure 71152, "Identification and Resolution of Problems," and in order to help identify repetitive equipment failures or specific human performance issues for followup, the inspectors performed a daily screening of items entered into the licensee's corrective action program. This review was accomplished by reviewing hard

copy or electronic summaries of each condition record, attending various daily screening meetings, and by accessing the licensee's computerized corrective action program database.

b. Findings and Observations

No findings of significance were identified.

.4 Radiation Protection

Section 2OS1 evaluated the effectiveness of the licensee's problem identification and resolution processes regarding access controls to radiologically significant areas and radiation worker practices. The inspector reviewed selected corrective action documents for root cause/apparent cause analysis against the licensee's problem identification and resolution process. No findings of significance were identified.

4OA3 Event Followup (71153)

.1 (Closed) Licensee Event Report (LER) 05000498/2004001-00: Unit 1 Reactor Trip on High Steam Generator Levels Initiated by Failure of Inverter 1201.

On January 23, 2005, with Unit 1 at full power, Class1E 7.5 kV Inverter 1201 failed, resulting in a reactor trip when steam generator level could not be controlled. The licensee documented this deficiency in Condition Report 04-1238. No additional issues were identified by the inspectors. This LER is closed.

.2 (Closed) LER 0500498/2003001, Partial Loss of Offsite Power in Units 1 and 2 Resulting in Engineered Safety Feature Actuation .

On January 19, 2003, while placing the North Bus Shunt Reactor into service in the switchyard, the Unit 1 Standby Transformer received a lockout due to overcurrent on the shunt reactor neutral. The corrective actions implemented in response to this event were documented in accordance with the licensee's Corrective Action Program in Condition Report 03-925. No additional issues were identified by the inspectors. This LER is closed.

.3 (Closed) LER 05000498;499/2004004-00: Deviation from a Licensed Condition Under 10 CFR 50.54(x)

On April 6, 2004, with Unit 1 at full power and Unit 2 in Mode 5, the shift supervisor for Unit 1 directed over the public address system that all personnel seek shelter due to a tornado watch in effect for the area. Since the requirements of 10 CFR 73.55(e) and (h) were not met, at 11:51 a.m. (CDT), the Unit 1 shift supervisor invoked 10 CFR 50.54(x) for security personnel protection. The licensee exited 50.54(x) at 1:19 p.m.

After the weather subsided, the licensee took appropriate corrective actions by re-establishing their response positions, completing a search of the protected and vital areas, and completing testing and re-implementation of the Perimeter Intrusion Detection System.

The licensee documented this deficiency in Condition Report 04-4829. This LER is closed.

- .4 (Closed) Licensee Event Report 0500499/2005002, Essential Chiller 22C inoperable for longer than allowed by Technical Specifications.

On February 28, 2005, Essential Chiller 22C failed to run due to the pump becoming air bound. This event and its enforcement aspects are discussed in Section 4OA2.2. The inspectors reviewed the licensee's completed and planned corrective actions and no other findings were identified. This LER is closed.

4OA4 Crosscutting Aspects of Findings

Section 2OS1 and 4OA7 describe issues with crosscutting aspects associated with human performance which involved the failure of personnel to: (1) ensure radiological postings remained conspicuous, (2) obtain an appropriate radiological briefing, (3) provide continuous surveillance for an entry into a high radiation area with dose rates greater than 1000 millirem per hour, (4) survey an area after an evolution changed the radiological conditions, and (5) possess an alarming dosimeter when entering a high radiation area.

4OA5 Other

- .1 TI 2515/160, Pressurizer Penetration Nozzles and Steam Space Piping Connections in US PWRs - Bare Metal Visual Examination

a. Inspection Scope

TI 2515/160, Revision 1, requires a bare metal visual inspection of the Unit 1 pressurizer vessel penetration nozzles for evidence of primary coolant leakage by a qualified inspector using an adequate procedure.

b. Findings

The inspector performed a bare metal visual examination of the pressurizer vessel nozzles. The examination was conducted by using a flashlight and all five steam space nozzles could be seen clearly with a 360 degree perspective. The surge line penetration was only partially viewed, as insulation had already been restored after the licensee's inspection. Except for the surge line, access was unimpeded, lighting was adequate and no boric acid residue was found at any nozzle/pressurizer interface.

The licensee documented the results of the inspection in Plant Engineering Procedure OPEP10-ZA-0024, "ASME XI Examination for VT-1 and VT-3," Revision 1.

The licensee inspector was trained and certified to perform visual inspections (VT1). The examination procedure was reviewed and found to be adequate.

No volumetric examinations were required or conducted.

No findings of significance were identified.

.2 TI 2515/152, Reactor Vessel Lower Head Penetrations - Bare Metal Visual Examination

a. Inspection scope.

TI 2515/152, Revision 1, requires a bare metal visual inspection of the reactor pressure vessel lower head penetration nozzles for evidence of primary coolant leakage by a qualified inspector using an adequate procedure.

b. Findings

The inspectors observed a bare metal visual examination of the Unit 1 lower reactor pressure vessel (RPV) head penetration nozzles. The examination was conducted by removing three insulation panels with 120 degree spacing so that all 58 penetration nozzles could be seen clearly with a 360 degree perspective. Access was unimpeded, lighting was excellent and no boric acid residue was found at any nozzle/RPV interface.

During the previous outage, two of the 58 bottom mounted instrumentation penetrations were found to be leaking and were repaired. No evidence of further leakage from the repaired nozzles was found.

The licensee documented the results of the inspection in Plant General Procedure OPGP03-ZE-0033, "RCS Pressure Boundary Inspection for Boric Acid Leaks," Revision 8.

The licensee inspector was trained and certified to perform visual inspections (VT2). The examination procedure was reviewed and found to be adequate.

No volumetric examinations were required or conducted.

No findings of significance were identified.

4OA6 Meetings, Including Exit

The results of the inservice inspection were presented to Mr. Gary Parkey, Executive Vice President of Generation and General Plant Manager, and other members of licensee management on March 11, 2005.

The results of the radiological access inspection were presented to Mr. Gary Parkey and members of his staff on March 18, 2005.

The results of the resident inspection were presented to Mr. James J. Sheppard, President and Chief Executive Officer, and other members of licensee management on April 14, 2005.

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

Other Meetings

Mr. W. Johnson, Chief, Project Branch A, Division of Reactor Projects, visited the site and toured the Unit 1 containment building on March 16.

4OA7 Licensee Identified Violations

The following findings of very low safety significance were identified by the licensee and are violations of NRC requirements which meet the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as noncited violations.

- 10 CFR 20.1501(a) states, in part, that surveys shall be made or caused to be made to ensure compliance with other parts of the regulation, and are reasonable under the circumstances to evaluate the magnitude and extent of radiation levels, concentrations or quantities of radioactive material, and the potential radiological hazards. In addition, 10 CFR 20.1902(a) states, in part, that a radiation area shall be conspicuously posted. However, on September 20, 2004, a routine survey identified 6 millirem per hour at the radiation area boundary of the Unit 2 Fuel Handling Building cask wash-down portal access from the 30-foot elevation catwalk. The licensee determined that a survey was not conducted/documented for the area after fuel cleaning and tri-nuke filter loading which occurred approximately four weeks earlier. This issue is documented in the licensee's corrective action program as Condition Report 2004-12752. Using the Occupational Radiation Safety Significance Determination Process, the finding was determined to be of very low safety significance because it did not involve: (1) ALARA planning and controls, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose.

In addition, this finding had a crosscutting aspect with respect to human performance when poor communications between radiation protection personnel lead to the area not being surveyed after the fuel cleaning and tri-nuke filter loading evolution.

- Technical Specification 6.12.1 states, in part, that any individual permitted to enter a high radiation area, in which the dose rates are greater than 100 millirem per hour but less than 1000 millirem per hour at 30 centimeters from the source of radiation or any surface the radiation penetrates, shall be provided with a radiation monitoring device which continuously integrates the radiation dose rate and alarms when a preset integrated dose rate level is received. However, on April 16, 2004, an individual entered a high radiation area without his electronic alarming dosimeter to participate in work activities in the "C" reactor coolant pump cubicle. Radiation Protection found the alarming dosimeter in the dress out area and paged the worker to exit the Radiologically Controlled Area. This issue is documented in the licensee's corrective action program as Condition Report 2004-5601. Using the Occupational Radiation Safety Significance Determination Process, the finding was determined to be of very low safety significance because it did not involve: (1) ALARA planning and controls, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose.

In addition, this finding had crosscutting aspects associated with human performance when the individual entered a high radiation area without an alarming dosimeter.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

R. Aguilera, Radiological Manager, Radiological Engineering
M. Berg, Manager, Testing/Programs Engineer
W. Bullard, Manager, Health Physics
C. Campbell, Senior Radiation Protection Technician, ALARA
J. Conly, Licensing Engineer
J. Cook, Process Improvement Leadership Team
T. Frawley, Acting Manager, PI
S. Head, Manager, Licensing
T. Hurley, Supervisor, Operations Training
T. Jordan, Vice President, Engineering and Technical
J. Jump, Manager, Training
M. McBurnett, Manager, Quality and Licensing
W. Mookhoek, Senior Engineer, Quality and Licensing
J. Myers, ALARA Specialist, Health Physics
G. Parkey, Vice President, Generation
D. Rencurrel, Manager, Operations
R. Savage, Senior Staff Specialist
J. Sheppard, President and CEO
L. Spiess, Nondestructive Evaluation Technician, Level III
J. Stauber, Inservice Inspection Program Engineer
D. Swett, Radiological Manager, ALARA
K. Taplett, Engineer Licensing Staff Senior
S. Thomas, Process Improvement Leadership Team
D. Towler, Manager, Quality
T. Walker, Manager, Quality
J. Winters, SED

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Open

05000498/2005002-01	NCV	Failure to conspicuously post radiation areas. (Section 2OS1.1)
05000498/2005002-02	NCV	Failure to comply with Technical Specification 6.12.2. (Section 2OS1.2)
05000498/2005002-03	NCV	Failure to initiate a condition report when a degrading trend was identified. (Section 4OA2.1)

05000498/2005002-04	NCV	Essential Chiller 2C failure to start. (Section 4OA2.2)
<u>Closed</u>		
05000498/2005002-01	NCV	Failure to conspicuously post radiation areas. (Section 2OS1.1)
05000498/2005002-02	NCV	Failure to comply with Technical Specification 6.12.2. (Section 2OS1.2)
05000498/2005002-03	NCV	Failure to initiate a condition report when a degrading trend was identified. (Section 4OA2.1)
05000498/2005002-04	NCV	Essential Chiller 2C failure to start. (Section 4OA2.2)
05000498;498/2004-001	LER	Unit 1 reactor trip on high steam generator levels initiated by failure of inverter 1201. (Section 4OA3.1)
05000498;498/2003-001	LER	Partial loss of offsite power in Units 1 and 2 resulting in Engineered Safety Feature actuation evaluation. (Section 4OA3.2)
05000498;499/2004-004-00	LER	Deviation from a Licensed Condition under 10 CFR 50.54(x). (Section 4OA3.3)
05000499/2005-002-00	LER	Essential Chiller 22C inoperable for longer than allowed by technical specifications. (Section 4OA3.4)

LIST OF DOCUMENTS REVIEWED

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

Section 71111.16 Operator Burden Program

Condition Reports

02-15279	03-12392	04-1285	03-12277	04-3091	04-1312
03-18192	04-15548	03-13002	03-17320	04-2696	04-7500

Section 2OS2: Access Controls to Radiologically Significant Areas (71121.01)

Audits and Self-Assessments

Self Assessment as documented in Condition Record 03-16708
Self Assessment as documented in Condition Record 04-02448
Self Assessment as documented in Condition Record 04-14759
Radiation Protection Corrective Action Program and Human Performance Monitoring Reports
from July through December 2004

Condition Reports

04-05601, 04-05618, 04-05974, 04-06055, 04-09838, 04-10997, 04-11660, 04-12752, 04-13327,
04-13975, 04-15203, 05-00546, 05-01185, 05-03121, 05-03366, 05-03750, 05-03761, 05-03799,
05-03800, 05-03802, and 05-03779

Procedures

OPGP03-ZR-0051 Radiological Access and Work Controls, Revision 19
0PRP04-ZR-0013 Radiological Survey Program, Revision 16
0PRP04-ZR-0015 Radiological Posting and Warning Devices, Revision 18
0PRP07-ZR-0009 Performance of High Exposure Work, Revision 23
0PRP08-ZR-0014 Maintenance and Control of HEPA Vacuum Cleaners and Portable
Ventilation Units, Revision 12

Radiation Work Permits

2005-1-0033 Routine Reactor Operations Functions, Revision 0
2005-1-0044 Maintenance and PM Activities in RHR Train Rooms in Support of 1RE12,
Revision 0
2005-1-0045 1RE12 - Maintenance Activities in RCB Room 307 Regen Heat Exchanger Valve
Alley, Revision 0
2005-1-0060 Perform Snubber Inspections in Unit 1 RCA during 1RE12, Revision 0
2005-1-0076 1RE12 - Reactor Head Disassembly/Reassembly Mechanical Support - For Work
In and Around Reactor Cavity, Revision 0
2005-1-0077 1RE12 - Under Reactor Head Mechanical Support, Inspections, and Walkdowns,
Revision 0
2005-1-0078 1RE12 - O-ring Groove Inspections, Revision 0
2005-1-0107 Perform ISI's and FAC Testing in Unit 1 RCA during 1 RE12, Revision 0

2005-1-0110 1RE12 Perform RCP Seal Housing Bolting Inspections and Restretching of Bolting, Revision 0

Miscellaneous

Quality Monitoring Reports from April 2004 through February 2005

Procedures

OPEP10-ZA-0023, "Visual Examination of Component Supports for ASME XI Inservice Inspection," Revision 1.

OPEP10-ZA-0024, "ASME XI Examination for VT-1 and VT-3," Revision 1.

OPEP10-ZA-0012, "Color Contrast Solvent Removable Liquid Penetrant Examination for ASME XI PSI/ISI," Revision 2.

OPGP03-ZE-0033, "Reactor coolant system Pressure Boundary Inspection for Boric Acid Leaks," Revision 8.

OPEP10-ZA-0004, "General Ultrasonic Examination," Revision 2.

OPEP10-ZA-0002, "Qualification and Certification of Nondestructive Examination Personnel for the Ultrasonic Examination Method for the Inservice Inspection Program," Revision 1.

UTI-016, "Manual Ultrasonic Examination of Vessel Nozzle Inner Radius Sections," Revision 2.

Condition Reports

CR-04-4820

CR-04-5159

CR-04-5328

CR-04-5425

CR-05-3268

Personnel Certifications Reviewed

James C. Heil, South Texas Project
Laddie Lee O'Kelley, Sonic Systems International
James Williams, Sonic Systems International

LIST OF ACRONYMS

ALARA	As Low As is Reasonably Achieved
CFR	<i>Code of Federal Regulations</i>
CR	condition report
ECW	essential cooling water
EPZ	emergency planning zone
LER	licensee event report
NCV	noncited violation
PI	performance indicators
WAN	work authorization number