



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

August 12, 2008

Mr. Edward D. Halpin
Chief Nuclear Officer
STP Nuclear Operating Company
South Texas Project
P.O. Box 289
Wadsworth, TX 77483

SUBJECT: SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION - NRC
INTEGRATED INSPECTION REPORT 05000498/2008003 AND
05000499/2008003

Dear Mr. Halpin:

On June 28, 2008, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your South Texas Project Electric Generating Station, Units 1 and 2, facility. The enclosed integrated report documents the inspection findings, which were discussed on July 1, 2008, with you and other members of your staff.

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

Based on the results of this inspection, three findings of very low safety significance (Green), one NRC and two self-revealing, were identified, all of which were determined to be violations. Additionally, a licensee-identified violation, which was determined to be of very low safety significance, is listed in Section 4OA7 of 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 violations as noncited violations (NCVs) consistent with Section VI.A.1 of the NRC Enforcement Policy. If you contest these 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 DC 20555-0001; with copies to the Regional Administrator, U.S. Nuclear Regulatory Commission Region IV, 612 East Lamar Blvd., Suite 400, Arlington, Texas 76011-4125; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington DC 20555-0001; and the NRC Resident Inspector at the 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/

Claude E. Johnson, Chief
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Division of Reactor Projects

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

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NRC Inspection Report 05000498/2008003 and 05000499/2008003
w/Attachment: Supplemental Information

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SUNSI Review Completed: CEJ ADAMS: Yes No Initials: CEJ :
 Publicly Available Non-Publicly Available Sensitive Non-Sensitive
R:\REACTORS\STP\2008\STP2008-03.RP-JLD.doc ML 082250114

RIV:RI:DRP/A	RIV:SRI:DRP/A	SPE:DRP/A	C:DRS/PSB	C:DRS/EB1
BKTharakan	JLDixon	TRFarnholtz	MPShannon	RLBywater
/RA/ email	/RA/email	/RA/	/RA/	/RA/
08/12/2008	08/12/2008	07/15/2008	07/23/2008	07/24/2008
C:DRS/OB	C:DRS/EB2	C:DRP/A		
RELantz	NFO'Keefe	CEJohnson		
/RA/	/RA/	/RA/		
07/24/2008	07/25/2008	08/12/2008		

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

Dockets: 05000498, 05000499
Licenses: NPF-76, NPF-80
Report: 05000498/2008003 and 05000499/2008003
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: April 7 through June 28, 2008
Inspectors: L. Carson II, Senior Health Physicist
J. Dixon, Senior Resident Inspector
Z. Dunham, Senior Resident Inspector, Columbia
S. Graves, Reactor Inspector
M. Hayes, Reactor Engineer (NSPDP)
R. Kopriva, Senior Reactor Inspector
B. Tharakan, Resident Inspector
B. Tindell, Resident Inspector, Comanche Peak
Approved By: Claude E. Johnson, Chief, Project Branch A
Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000498/2008003, 05000499/2008003; 04/07/08 - 06/28/08; South Texas Project Electric Generating Station, Units 1 and 2; Integrated Resident and Regional Report; Postmaintenance Test, Refueling Outage Activities, Access Control To Radiological Areas.

This report covered a 3-month period of inspection by resident and regional inspectors. The inspection identified three Green findings. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using Inspection Manual Chapter 0609, "Significance Determination Process." Findings for which the significance determination process does not apply may be Green or be assigned a severity level after NRC management's review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Initiating Events

- Green. The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion V, for failure to follow Procedure 0PGP03-ZE-0133, "Boric Acid Corrosion Control Program," Revision 0 and Revision 1, which resulted in the licensee not re-evaluating changes to the material condition of plant equipment. On February 26, 2008, in preparation for Unit 1 Refueling Outage 1RE14, the inspectors identified boric acid deposits that appeared brown in color on spent fuel pool Valve 1-FC-0010B. Additional examples were identified by both the licensee and the inspectors where a changed condition was not re-evaluated. These examples point to multiple examples of the licensee failing to follow the established procedure for boric acid corrosion. The licensee entered this issue into their corrective action program as Condition Report 08-8059.

The finding is more than minor because if the failure to ensure that the original assumptions remain valid when the leakage type or color changes continued, then unevaluated degradation of safety-related components could continue and lead to a more significant safety concern. The finding is associated with the Initiating Events cornerstone attribute of human performance and it affects the cornerstone objective of limiting those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. This finding was determined to be of very low safety significance based on Inspection Manual Chapter 0609, Appendix A, Phase 1 worksheet of the Significance Determination Process because it did not result in exceeding the Technical Specification limit for reactor coolant system leakage or affect other mitigating systems resulting in a loss of safety function. In addition, this finding had human performance crosscutting aspects associated with resources, in that, station personnel had a high number of backlog items related to the boric acid corrosion control program resulting in personnel not following the timelines established by the procedure [H.2(a)] (Section 1R20).

Cornerstone: Mitigating Systems

- Green. The inspectors reviewed a self-revealing noncited violation of 10 CFR Part 50, Appendix B, Criterion V, for the failure to follow Work Order 452133, "Terminate Replacement Cables for MCC E1C3 in Accordance with Design Change Package 05-1437-4 during 1RE14," Revision 0 and Procedure OPGP03-ZM-0021, "Control of Configuration Changes," Revision 15. On March 31, 2008, electrical maintenance personnel failed to follow the procedures by not documenting the cable terminations, as a result, 2 of 3 cables were swapped and the Essential Cooling Water Pump 1C discharge isolation valve motor operator was damaged. Additionally, electrical maintenance personnel did not complete the work order when they did not perform the required postmaintenance test on the motor control center electrical terminations. Per the Control of Configuration Changes procedure, maintenance personnel should have documented the lifting/terminating of cable connections and per the work order complete the postmaintenance test which would have identified the swapped electrical connections. The licensee entered this issue into their corrective action program as Condition Report 08-5486.

The finding is more than minor because if left uncorrected, failure to properly document cable lifting/terminating and perform the postmaintenance test could lead to a more significant event as was evidenced by the damage caused to the Essential Cooling Water Pump 1C discharge isolation motor operated valve motor. This finding is associated with the Mitigating Systems cornerstone attribute of human performance and it affects the cornerstone attribute to ensure the availability of systems that respond to initiating events to prevent undesirable consequences. This finding was determined to be of very low safety significance based on Inspection Manual Chapter 0609, Appendix G, Phase 1 worksheet of the Shutdown Significance Determination Process because it did not screen as needing a quantitative assessment due to the licensee maintaining an adequate mitigation capability. In addition, this finding had human performance crosscutting aspects associated with work practices, in that, station personnel failed to follow the expectation regarding procedure compliance by failing to follow the work order and the procedure to ensure that the cables were correctly landed before performing subsequent surveillance tests [H.4(b)] (Section 1R19).

Cornerstone: Occupational Radiation Safety (OS)

- Green. The inspectors reviewed a self-revealing noncited violation of 10 CFR 20.1501 because radiation protection staff failed to perform an adequate survey to evaluate and determine the radiological hazards in the pressurizer cubicle on March 31, 2008. Consequently, a worker's electronic dosimeter unexpectedly alarmed at 277 millirem per hour after entering the pressurizer cubicle. A chemically induced crud burst occurred in the reactor primary coolant system, which affected the pressurizer radiological conditions. The licensee entered this issue into the corrective action program as Condition Report 08-5399.

The finding was greater than minor because it was associated with the Occupational Radiation Safety Cornerstone attribute (exposure control) of Program and Process and affected the cornerstone objective, in that failure to conduct a radiation survey had the potential to increase personnel dose. This occurrence involved a worker's unplanned and unintended exposure to radiation. Therefore, using the Occupational Radiation Safety Significance Determination Process, the finding was determined to be of very low safety significance because it was not an as low as is reasonably achievable finding, there was no overexposure or substantial potential for an overexposure, and the ability to assess dose was not compromised. The finding was self-revealing because the licensee was alerted to the elevated pressurizer cubicle dose rates by the alarming electronic dosimeter. Additionally, this finding has human performance crosscutting aspects associated with work practices, because the licensee failed to ensure interdepartmental communication and coordination during the crud burst between radiation protection, chemistry, and operations to assure timely radiation safety information was provided to workers [H.3(b)] (Section 2OS1).

B. Licensee-Identified Violations

A violation of very low safety significance which was identified by the licensee has been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. This violation and its corrective actions are listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

Unit 1 began the inspection period in Refueling Outage 1RE14. On April 25, 2008, Unit 1 achieved criticality, and on April 27, 2008, the licensee closed the main generator output breaker. On April 29, 2008, Unit 1 reached 100 percent rated thermal power and remained there throughout the remainder of the inspection period.

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

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

.1 Readiness for Seasonal Susceptibilities

a. Inspection Scope

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

- June 27, 2008, Units 1 and 2, auxiliary feedwater (AFW) Train D and Auxiliary Engineered Safety Feature Transformers

Documents reviewed by the inspectors included:

- Condition Reports (CRs) 05-3384, 05-8880, and 07-12053
- Procedure 0PGP03-ZV-0001, "Severe Weather Plan," Revision 14
- Procedure 0POP09-AN-22M1, "Annunciator Lampbox 22M01 Response Instructions," Revision 17

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

.2 Readiness of Offsite and Alternate ac Power Systems

a. Inspection Scope

On May 28, 2008, the inspectors completed a review of the licensee's summer readiness of offsite and alternate alternating current (ac) power systems. The inspectors: (1) reviewed plant procedures, the UFSAR, and TSs to ensure that operator actions defined in grid stability procedures maintained the readiness of essential systems; (2) verified that plant features, and procedures for operation and continued availability of offsite and alternate ac power systems are appropriate; and (3) reviewed the communications protocols between the transmission system operator and the licensee to verify that appropriate information is exchanged.

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

.1 Partial Walkdown

a. Inspection Scope

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

- June 10, 2008, Unit 1, essential chilled water Train A following compressor replacement and other maintenance activities
- June 19, 2008, Unit 1, AFW Train D, prior to hydrostatic pressure test

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed two samples.

b. Findings

No findings of significance were identified.

.2 Complete Walkdown

a. Inspection Scope

On May 1, 2008, the inspectors: (1) reviewed plant procedures, drawings, the UFSAR, TSs, and vendor manuals to determine the correct alignment of the Unit 2, turbine driven AFW Pump 24 system; (2) reviewed outstanding design issues, operator work arounds, and UFSAR documents to determine if open issues affected the functionality of the AFW system; and (3) verified that the licensee was identifying and resolving equipment alignment problems.

Documents reviewed by the inspectors included:

- CRs 07-14281, 07-2529, 07-18470, 07-11567

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R05 Fire Protection Annual/Quarterly (71111.05AQ)

.1 Quarterly Inspection

a. Inspection Scope

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

- April 29, 2008, Unit 1 and Unit 2, Technical Support Center (Fire Zone Z058)
- June 11, 2008, Unit 1, component cooling water pump and essential chiller Train A (Fire Zone Z128)
- June 25, 2008, Unit 1, essential cooling water (ECW) intake structure pump rooms Train A, B, and C (Fire Zones Z600, Z601, and Z602)

- June 26, 2008, Unit 2, isolation valve cubicle pump rooms, Train A, B, and C (Fire Zones Z401, Z402 and Z403)

Documents reviewed by the inspectors included:

- Applicable fire preplans
- Procedure 0PGP03-ZF-0019, "Control of Transient Fire Loads and Use of Combustible and Flammable Liquids and Gases," Revision 5
- Procedure 0PGP03-ZF-0001, "Fire Protection Program," Revision 18

The inspectors completed four samples.

b. Findings

No findings of significance were identified.

.2 Annual Fire Drill Inspection

a. Inspection Scope

On June 25, 2008, the inspectors observed a fire brigade drill to evaluate the readiness of licensee personnel to prevent and fight fires, including the following aspects: (1) the number of personnel assigned to the fire brigade, (2) use of protective clothing, (3) use of breathing apparatuses, (4) use of fire procedures and declarations of emergency action levels, (5) command of the fire brigade, (6) implementation of prefire strategies and briefs, (7) access routes to the fire and the timeliness of the fire brigade response, (8) establishment of communications, (9) effectiveness of radio communications, (10) placement and use of fire hoses, (11) entry into the fire area, (12) use of firefighting equipment, (13) searches for fire victims and fire propagation, (14) smoke removal, (15) use of prefire plans, (16) adherence to the drill scenario, (17) performance of the postdrill critique, and (18) restoration from the fire drill. The licensee simulated a fire in the Channel II battery room.

Documents reviewed by the inspectors included:

- Procedure 0PGP03-ZF-0001, "Fire Protection Program," Revision 18
- Procedure 0PGP03-ZF-0011, "STPEGS Fire Brigade," Revision 10

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06)

Semi-annual Internal Flooding

a. Inspection Scope

The inspectors: (1) reviewed the UFSAR, the flooding analysis, and plant procedures to assess susceptibilities involving internal flooding; (2) reviewed the UFSAR and CAP to determine if the licensee identified and corrected flooding problems; (3) inspected underground bunkers/manholes to verify the adequacy of (a) sump pumps, (b) level alarm circuits, (c) cable splices subject to submergence, and (d) drainage for bunkers/manholes; (4) verified that operator actions for coping with flooding can reasonably achieve the desired outcomes; and (5) walked down the below listed areas to verify the adequacy of: (a) equipment seals located below the floodline, (b) floor and wall penetration seals, (c) watertight door seals, (d) common drain lines and sumps, (e) sump pumps, level alarms and control circuits, and (f) temporary or removable flood barriers.

- June 27, 2008, Unit 1, essential chilled water and component cooling water pump rooms for Trains A, B, and C

Documents reviewed by the inspectors included:

- Calculation NC-9703, "Flooding Analysis: MAB," Revision 2
- Calculation NC-9712, "Facility Response Analysis for MAB Flooding and Spray Effects," Revision 2

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R08 Inservice Inspection Activities (71111.08)

.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 (NDE) activities and, if performed, one to three welds on the reactor coolant system (RCS) pressure boundary. Also review one or two examinations with recordable indications that have been accepted by the licensee for continued service.

The inspectors directly observed the following NDEs:

System	Identification	Exam Type	Result
Pressurizer Safety Nozzle	N3	Ultrasonic Test (UT)	Two (2) acceptable laminar indications were observed
Pressurizer Surge Line to Steam Generator (SG) "A" Hot Leg Weld	Bent pipe to BC 16-RC-1412-NSS-9	UT	Indication identified was previously recorded during the preservice inspection (PSI)
AFW Nozzle to Shell Weld, SG - A	RSG-1A-AF8	Magnetic Particle Test (MT) - Dry Particle	No relevant indications
Reactor Vessel Closure Studs	RPV-1-A, Stud 19A	MT - Wet Fluorescent	No relevant indications
Residual Heat Removal (RHR) Heat Exchanger to Support Skirt Weld	RHAHRS-1A-SK	Penetrant Test (PT)	Acceptable pinhole porosity indications were observed
Reactor Vessel Closure Studs	RPV-1-A, Stud 19A	Visual Test (VT)	No relevant indications
Containment Penetration	EP-02-HD-BLTG/ Header Bolting	VT	No relevant indications
Containment Penetration	EP-04-HD-BLTG/ Header Bolting	VT	No relevant indications
Reactor Pressure Vessel Upper Head	Control Rod Drive Mechanisms	Bare Metal Visual Remote, robotic camera	No relevant conditions or indications of leakage from the penetration annulus or boric acid wastage

The inspectors reviewed records for the following NDEs:

System	Identification	Exam Type	Result
Reactor Coolant Pump (RCP) 1A Flange	RCP-101A-FS-1 RCP-101A-FS-2 RCP-101A-FS-3 RCP-101A-FS-4 RCP-101A-FS-5 RCP-101A-FS-6 RCP-101A-FS-7 RCP-101A-FS-8 RCP-101A-FS-9 RCP-101A-FS-10 RCP-101A-FS-11 RCP-101A-FS-12 RCP-101A-FS-13 RCP-101A-FS-14 RCP-101A-FS-15	VT	No recordable indications

System	Identification	Exam Type	Result
	RCP-101A-FS-16 RCP-101A-FS-17 RCP-101A-FS-18 RCP-101A-FS-19 RCP-101A-FS-20 RCP-101A-FS-21 RCP-101A-FS-22 RCP-101A-FS-23 RCP-101A-FS-24		
Pressurizer Spray Nozzle	N2	PT	No recordable indications
Pressurizer Safety Valve Nozzle	N4A (Inservice Inspection [ISI] N4C)	PT	No recordable indications
2 Inch Valve	CV-0671	Radiographic Test	No recordable indications

During the review and observation of each examination, the inspectors verified that activities were performed in accordance with American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code requirements and applicable procedures. Indications were compared with previous examinations and dispositioned in accordance with ASME Code and approved procedures. The qualifications of all NDE technicians performing the inspections were verified to be current.

Three NDE examinations with relevant indications were accepted by the licensee for continued service.

System	Identification	Exam Type	Result
Pressurizer Safety Nozzle	N3	UT	Two (2) acceptable laminar indications were observed
Pressurizer Surge Line to SG "A" Hot Leg Weld	Bent pipe to BC 16-RC-1412-NSS-9	UT	Acceptable indication identified was previously recorded during the PSI
RHR Heat Exchanger to Support Skirt Weld	RHAHRS-1A-SK	PT	Acceptable pinhole porosity indications were observed

Three examples of welding on the RCS pressure boundary (weld overlay) were examined through direct observation and/or record review as follows:

System	Component/Weld Identification
Reactor Pressurizer	Pressurizer Spray Valve Nozzle N-2
Reactor Pressurizer	Pressurizer Safety Valve Nozzle N-3
Reactor Pressurizer	Pressurizer Safety Valve Nozzle N4A (ISI N4C)

Welding procedures and NDE of the welding repair conformed to ASME Code requirements and licensee requirements.

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 gas tungsten arc welding process (machine) process were identified, recorded in the procedure qualification record, and formed the bases for qualification of the welding procedure specifications.

The inspectors completed one sample under Section 02.01.

b. Findings

No findings of significance were identified.

.2 Vessel Upper Head Penetration (VUHP) Inspection Activities

a. Inspection Scope

The inspection procedure requires observation or review of the reactor head bare metal visual examinations, or review the post examination videotape and examination procedures. In particular, review licensee criteria for confirming visual examination quality and instructions resolving interference or masking issues. Also, if the licensee is performing non-visual NDE of the reactor vessel head, review a sample of these examinations.

Observation and review of the reactor head bare metal visual examinations:

Record Number	Identification	Exam Type	Result
RHVT2-2008-01	Forward Camera Tape F-1 Rear Camera Tape R-1	Bare Metal Visual Robotic camera	No relevant conditions or indications of leakage from the penetration annulus or boric acid wastage
RHVT2-2008-02	Forward Camera Tape F-2 Rear Camera Tape R-2	Bare Metal Visual Robotic camera	No relevant conditions or indications of leakage from the penetration annulus or boric acid wastage
RHVT2-2008-03	Forward Camera Tape F-3 Rear Camera Tape R-3	Bare Metal Visual Robotic camera	No relevant conditions or indications of leakage from the penetration annulus or boric acid wastage

Record Number	Identification	Exam Type	Result
RHVT2-2008-04	Video Probe P-1	Bare Metal Visual Remote camera	No relevant conditions or indications of leakage from the penetration annulus or boric acid wastage

The licensee was not required to perform any volumetric NDE of the reactor vessel upper head penetrations during this outage (1RE14) per the licensee's NDE inspection plan.

The inspectors completed one sample under Section 02.02.

b. Findings

No findings of significance were identified.

.3 Boric Acid Corrosion Control Inspection Activities

a. Inspection Scope

The inspectors reviewed the licensee's boric acid corrosion control program and inspection activities, and verified that visual inspections emphasized locations where boric acid leaks could cause degradation of safety significant components.

The inspectors reviewed five instances where boric acid deposits were found on RCS piping components:

Component Number	Description	CR
N1CVLV3119	Boric acid deposits on chemical and volume control system Auxiliary Spray Level Control Valve	08-5641-1
2R141TRC0054D	Pressurizer LT-0467 Lower Root Valve	08-4947-3
1R161XRH0061A	RHR Pump 1A Suction 2 nd Motor-Operated Valve	06-12195-5
1R161XRH0061B	RHR Pump 1B Suction 2 nd Motor-Operated Valve	06-7781-4
1R161XRH0061C	RHR Pump 1C Suction 2 nd Motor-Operated Valve	07-14144-4

The condition of all the components was appropriately entered into the licensee's CAP.

The inspectors completed one sample under Section 02.03.

b. Findings

See Section 1R20 for a NRC identified finding.

.4 SG Tube Inspection Activities

a. Inspection Scope

The Unit 1 SGs were not required to be inspected during this outage, 1RE14. However, due to the fact that the licensee had previously identified small bits of a feedwater heater stabilization cable in the secondary side of SG "D," a foreign objects retrieval and partial tube inspection was performed.

The SG contractor identified approximately 220 pieces of cable and/or other foreign material on the secondary side of SG "D" with the longest piece being approximately 5½ inches long. Most of the identified pieces of cable or foreign material were removed from SG "D." For the material that was irretrievable, a review and analysis was performed to support continued operation of the unit. The SG tubes were inspected using eddy current plus point NDE, from the SG tube sheet to approximately 6 inches above the first tube support plate. There were no indications identified.

The inspectors completed one sample under Section 02.04.

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 ISIs documented by the licensee in the CAP for appropriateness of the corrective actions.

The inspectors reviewed 16 CRs, which dealt with ISI activities and found the corrective actions were appropriate. Action requests 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 CAP and has procedures that direct a root cause evaluation when necessary. The licensee also has an effective program for applying industry operating experience.

The inspectors completed one sample under Section 02.05.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Regualification Program (71111.11)

a. Inspection Scope

On May 12, 2008, the inspectors observed simulator training of senior reactor operators and reactor operators to identify deficiencies and discrepancies in the training, to assess operator performance, and to assess the evaluator's critique. The training scenario involved a loss of normal letdown, resulted from a RCS primary sample line leak, followed by a component cooling water leak from the Train A pump discharge valve flange. The scenario ended with an excessive steam flow indication as a result of a faulted SG concurrent with a loss of coolant accident, from which the reactor protection system failed to actuate resulting in manual scram actions and the declaration of an Alert emergency classification.

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

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

- June 20, 2008, Units 1 and 2, Standby Diesel Generator (SDG) including failures of the emergency fuel oil solenoid valves

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

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

.1 Planned Risk

a. Inspection Scope

The inspectors reviewed two assessment activities listed below to verify:

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

- April 29, 2008, Unit 1, Refueling Outage 1RE14 activities
- Week of June 2, 2008, Unit 1, planned maintenance on Train A including ECW Pump A overhaul and motor replacement, essential chilled water Train A compressor replacement, and Train A SDG fuel oil storage tank inspection

Documents reviewed by the inspectors included:

- 1RE14 Shutdown Risk Assessment Report

The inspectors completed two samples.

b. Findings

No findings of significance were identified.

.2 Emergent Work Control

a. Inspection Scope

The inspectors: (1) verified that the licensee performed actions to minimize the probability of initiating events and maintained the functional capability of mitigating systems and barrier integrity systems; (2) verified that emergency work-related activities such as troubleshooting, work planning/scheduling, establishing plant conditions, aligning equipment, tagging, temporary modifications, and equipment restoration did not place the plant in an unacceptable configuration; and (3) reviewed the UFSAR to determine if the licensee identified and corrected risk assessment and emergency work control problems.

- Week of May 12, 2008, Units 1 and 2, planned maintenance on Unit 1 Train B (large train work week) and Unit 2 Train A with emergent conditions on Unit 1 inverter for Distribution Panel DP001 losing power and Unit 2 essential chilled water Pump 21 A failing to start

Documents reviewed by the inspectors included:

- Projected and Actual Risk Profiles for Unit 1 Week of 05/12/2008
- Projected and Actual Risk Profiles for Unit 2 Week of 05/12/2008
- CRs 08-8587 and 08-8530

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

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

- April 24, 2008, Units 1 and 2, pressurizer power operated relief valve (PORV) blocking relay testing per CR 08-5642
- May 9, 2008, Unit 1, Extended Range Nuclear Instrument NI-46 indicating higher than NI-45 per CR 08-5240
- May 29, 2008, Unit 2, low head safety injection Pump 2A pump shaft seal leakage per CR 08-6851
- June 23, 2008, Units 1 and 2, SG PORV 1A failing to stroke full closed and the need for manual actions to close the PORVs ensure all accident analysis scenarios are satisfied per CR 08-9595
- June 27, 2008, Units 1 and 2, reactor vessel water level connectors potentially not being torqued to vendor recommended specifications per CRs 08-7521 and 08-7201

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed five samples.

b. Findings

See Section 4OA7 for a licensee identified finding on the pressurizer PORV blocking relay testing.

1R18 Plant Modifications

a. Inspection Scope

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

- June 11, 2008, Unit 1, reactor vessel inner o-ring monitor tube drain hole plug per Design Change Package (DCP) 08-6364-5

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R19 Postmaintenance Testing (71111.19)

a. Inspection Scope

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

- April 2, 2008, Unit 1, Extended Range Nuclear Instrument NI-46 following troubleshooting, which resulted in replacement of multiple electrical components

- April 3, 2008, Unit 1, ECW Pump 1C discharge isolation motor operated valve motor replacement due to motor damage from over current
- May 16, 2008, Unit 1, inverter for Distribution Panel DP001 following loss of power to DP001 due to failed circuit boards in the inverter
- June 10, 2008, Unit 1, ECW Pump 1A following pump overhaul and motor replacement
- June 12, 2008, Unit 1, solid state protection system following troubleshooting the Logic P-12 test failure

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed five samples.

b. Findings

Introduction. The inspectors reviewed a self-revealing Green NCV of 10 CFR Part 50, Appendix B, Criterion V, for the failure to follow the work order (WO) package for the ECW 1C cable replacement DCP. Specifically, the instructions not followed were WO 452133, "Terminate Replacement Cables for MCC E1C3 in Accordance with DCP 05-1437-4 During 1RE14," Revision 0; and Procedure 0PGP03-ZM-0021, "Control of Configuration Changes," Revision 15.

Description. On March 31, 2008, electrical maintenance personnel were performing WO 452133 and landed six cables to Motor Control Center (MCC) E1C3 correctly as indicated on the Control of Configuration Changes form. Following shift turnover, the oncoming electrical maintenance personnel continued on with the WO, which required the cables to the MCC to be lifted from their terminals for resistance readings. The WO then directs the cables to be reconnected to their terminals per the Plant Data Management System (PDMS) termination cards. This step was not performed correctly and two of the three cables were swapped. Per the Control of Configuration Changes procedure, maintenance personnel should have used the documentation form in the procedure to document the electrical termination connections. Maintenance personnel did not use this form; instead they used the WO step which directs termination per the PDMS. At the end of the shift, maintenance personnel performed a self-check on the cable termination using the PDMS termination cards and the previous days control configuration form. Additionally, the cable termination work was close to shift turnover and rather than turning over and allowing the oncoming shift to finish the WO, the licensee elected to complete the remaining steps. Once the terminations were completed they asked for an independent verification per the quality inspection plan, which includes correct cable termination at the MCC. The quality inspectors did not identify the incorrect cable connections. On April 1, 2008, during a conversation between the electrical maintenance supervisor and the operations electrical manager, the operations electrical manager misunderstood the status of the WO and proceeded on with running a surveillance test on the ECW Pump 1C. Additionally, electrical maintenance personnel did not complete the work order when they did not perform the postmaintenance test on the motor control center electrical terminations which would

have identified the swapped electrical connections. When the pump was started, it sent an open signal to the pump discharge isolation valve to open; but due to the incorrectly terminated cables, the motor tried to further close the valve against its closed seat. The motor-operated valve tripped on over current and operations secured the pump. This less than precise communication and more importantly the failure to follow the WO resulted in damage to the motor operated valve's motor, which required the motor to be replaced, and the valve to be assessed to determine if it would require any repairs. The subsequent engineering evaluation resulted in no evaluated damage to the valve.

Analysis. The inspectors determined that the failure to follow the WO and the Control of Configuration Changes procedure, resulted in damage to ECW Pump 1C discharge isolation motor operated valve, was a performance deficiency. The finding is more than minor because if left uncorrected, failure to properly document cable lifting/terminating and perform the postmaintenance test could lead to a more significant event as was evidenced by the damage caused to the ECW Pump 1C discharge isolation motor operated valve motor. This finding is associated with the Mitigating Systems cornerstone attribute of human performance and it affects the cornerstone attribute to ensure the availability of systems that respond to initiating events to prevent undesirable consequences. This finding was determined to be of very low safety significance (Green) based on Inspection Manual Chapter 0609, Appendix G, Phase 1 worksheet of the Shutdown Significance Determination Process because it did not screen as needing a quantitative assessment due to the licensee maintaining an adequate mitigation capability. In addition, this finding had human performance crosscutting aspects associated with work practices, in that, station personnel failed to follow the expectation regarding procedural compliance by failing to follow the WO and the procedure to ensure that the cables were correctly landed before performing subsequent surveillance tests [H.4 (b)].

Enforcement. Title 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality shall be prescribed by documented instructions, procedures, and drawings, of a type appropriate to the circumstances, and shall be accomplished in accordance with these instructions, procedures, or drawings. The licensee implemented these requirements, in part, with WO 452133 and the Control of Configuration Changes procedure. The WO states, in part, "Terminate cables...in accordance with PDMS termination cards..." and the procedure states, in part, "All configuration changes involving lifted leads SHALL be documented..." Contrary to this, on March 31, 2008, the licensee failed to follow the prescribed guidance when maintenance personnel incorrectly landed two of three cables as a result of failing to document the placement of the cables as required by the procedure which resulted in damage to the ECP Pump 1C discharge isolation valve motor. Since this violation is of very low safety significance (Green) and it has been entered into the licensee's CAP as CR 08-5486, this violation is being treated as a NCV consistent with Section VI.A of the Enforcement Policy: NCV 05000498/2008003-01, "Failure to Follow Procedure Results in Motor Operated Valve Motor Damage."

1R20 Refueling and Other Outage Activities (71111.20)

a. Inspection Scope

The inspectors reviewed the following risk significant refueling items or outage activities associated with Unit 1 Refueling Outage 1RE14 to verify defense in depth commensurate with the outage risk control plan, compliance with the TSs, and adherence to commitments in response to Generic Letter (GL) 88-17, "Loss of Decay Heat Removal": (1) the risk control plan, (2) tagging/clearance activities, (3) RCS instrumentation, (4) electrical power, (5) decay heat removal, (6) spent fuel pool cooling, (7) inventory control, (8) reactivity control, (9) containment closure, (10) reduced inventory or midloop conditions, (11) refueling activities, (12) heatup activities, (13) restart activities, and (14) licensee identification and implementation of appropriate corrective actions associated with refueling and outage activities. The inspectors performed containment inspections which included observation of the containment sump for damage and debris, supports, braces, and snubbers for evidence of excessive stress, water hammer, or aging.

The inspectors completed one sample.

b. Findings

Introduction. The inspectors identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion V, for the failure to follow Procedure OPGP03-ZE-0133, "Boric Acid Corrosion Control Program," Revision 0 and Revision 1.

Description. On February 26, 2008, in preparation for Unit 1 Refueling Outage 1RE14, the inspectors identified boric acid deposits that appeared brown in color on the spent fuel pool cooling Pump 1B discharge isolation Valve 1-FC-0010B. The inspectors determined that the licensee had not re-evaluated the condition. The licensee's evaluation only discussed white, dry, boron residue. Upon further investigation, the inspectors identified that the pictures the licensee had taken of the valve in May 2007, identified the change in color, yet no re-evaluation was performed to ensure that the original assumptions remained valid. The licensee's Boric Acid Corrosion Control Procedure states that for a leak with excessive deposits, non-white in color, or active (wet), an evaluation is required. The original screening that was performed for Valve 1-FC-0010B was performed in January 2006, and only identified white deposits. As part of the inspectors observations the licensee performed a quality monitor of various boric acid evaluations and identified another example of a changed condition that did not have a re-evaluation performed to ensure the original assumptions remained valid.

The licensee identified that on the Unit 1 RHR Valve 1-RH-0061A the initial evaluation documented dry boric acid, but in the pictures taken for the periodic monitoring in May 2007, indications of wetting are clearly present with no documentation of a re-evaluation. The inspectors identified a similar condition on Unit 1 RHR Valve 1-RH-0061B where the leakage condition changed from dry to wet and the licensee did not re-evaluate the condition until after the third monitoring of the valve identified the change. Per the licensee's pictures, the change from dry to wet occurred in June 2007, but the licensee did not document the change until March 2008. Another example was identified on the Unit 2 RHR Pump 2C connection to the suction line. The

original evaluation performed in December 2006 identified fresh brown deposits, yet the evaluation closed the condition to rework without the need for additional monitoring even though the rework was not scheduled until September 2008. The maximum length that is called out in the boric acid procedure under the monitoring leakage section is 18 months for dry, white deposits. The condition will have existed for roughly 22 months with no additional observation.

These examples point to multiple examples of the licensee failing to follow the established procedure for boric acid corrosion. They indicate a weakness in the identification of changed conditions, as well as, implementing appropriate monitoring intervals to ensure that the original assumptions remain valid until the condition is repaired. The licensee's subsequent evaluation of these examples determined that the affected components would not have failed, and were not significantly degraded as they were composed of primarily corrosion resistant stainless steel material, before the item was next scheduled for monitoring or rework.

Analysis. The inspectors determined that the failure to follow the Boric Acid Corrosion Control Program procedure resulted in the licensee failing to perform a re-evaluation to ensure that the original assumptions were still valid when the leakage type or color changed, was a performance deficiency. The finding is more than minor because if the failure to ensure that the original assumptions remain valid when the leakage type or color changes continued, then unevaluated degradation of safety-related components could continue and lead to a more significant safety concern. The finding is associated with the Initiating Events cornerstone attribute of human performance and it affects the cornerstone objective of limiting those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. This finding was determined to be of very low safety significance (Green) based on Inspection Manual Chapter 0609, Appendix A, Phase 1 worksheet of the Significance Determination Process because it did not result in exceeding the TS limit for RCS leakage or affect other mitigating systems resulting in a loss of safety function. In addition, this finding had human performance crosscutting aspects associated with resources, in that, station personnel had a high number of backlog items resulting in personnel not following the timelines established by the procedure [H.2(a)].

Enforcement. Title 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality shall be prescribed by documented instructions, procedures, and drawings, of a type appropriate to the circumstances, and shall be accomplished in accordance with these instructions, procedures, or drawings. The licensee implements these requirements, in part, with Procedure OPGPO3-2E-0133, "Boric Acid Corrosion Control Program," which is used to document the screening, evaluation, disposition, and monitoring of the leakage. The procedure states, in part, "Monitoring is performed periodically to assess the leak rate, type of leakage...Periodic inspections ensure that the original assumptions and prescribed actions are still valid." Contrary to this, on multiple occasions, the licensee failed to follow the boric acid corrosion control program requirements, in that, the licensee failed to properly evaluate and/or document boric acid leaks that had changed in leakage type, or changed in color. Since this violation is of very low safety significance (Green) and it has been entered into the licensee's CAP as CR 08-8059, this violation is being treated as a NCV consistent with Section VI.A of the Enforcement Policy: NCV 05000498; 05000499/2008003-02, "Failure to Evaluate and/or Document Multiple Boric Acid Leaks with Changed Conditions."

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

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

- April 4, 2008, Unit 1, pressurizer liquid sample inside and outside containment isolation valves following Refueling Outage 1RE14
- May 16, 2008, Unit 1, RCS leak rate determination from startup after Refueling Outage 1RE14 on April 25, 2008
- June 5, 2008, Unit 1, SG PORV 1A stroke time surveillance test
- June 17, 2008, Unit 1, low head safety injection Pump 1C inservice test

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed four samples.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

For the one listed drill and simulator-based training evolution contributing to drill/exercise performance, emergency response organization, and PIs, the inspectors: (1) observed the training evolution to identify any weaknesses and deficiencies in classification, notification, and protective action requirements development activities; (2) compared the identified weaknesses and deficiencies against licensee identified findings to determine whether the licensee is properly identifying failures; and (3) determined whether licensee performance is in accordance with the guidance of the Nuclear Energy Institute

(NEI) 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5 acceptance criteria.

- June 18, 2008, Unit 1, simulator, technical support center, and emergency operations facility; the training scenario started as a failure of the unit auxiliary and standby transformers which results in a loss of offsite power; one of the SDG output breakers fails to close due to a breaker failure, which results in the declaration of an Alert due to having only a single 4160 Vac engineered safety feature bus for greater than 15 minutes; the only running SDG then suffers a mechanical failure, resulting in the declaration of a Site Area Emergency for loss of all three 4160 Vac engineered safety feature busses; a General Emergency is then declared when the scenario progresses to 10 percent cladding failure with a concurrent low head safety injection pump seal that begins to leak resulting in a loss of fuel cladding and RCS and potential loss of containment

Documents reviewed by the inspectors included:

- Red Team Dress Rehearsal Scenario Manual, June 18, 2008

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

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, high radiation areas, and worker adherence to these controls. The inspectors used the requirements in 10 CFR Part 20, the TSs, and the licensee's procedures required by TSs as criteria for determining compliance. During the inspection, the inspectors interviewed the radiation protection manager, radiation protection supervisors, and radiation workers. The inspectors performed independent radiation dose rate measurements and reviewed the following items:

- PI events and associated documentation packages reported by the licensee in the Occupational Radiation Safety Cornerstone
- Controls (surveys, posting, and barricades) of radiation, high radiation, and airborne radioactivity areas
- Radiation work permits (RWPs), procedures, 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 three airborne radioactivity areas
- Adequacy of the licensee's internal dose assessment for any actual internal exposure greater than 50 millirem Committed Effective Dose Equivalent
- Physical and programmatic controls for highly activated or contaminated materials (non-fuel) stored within spent fuel and other storage pools
- 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
- Licensee actions in cases of repetitive deficiencies or significant individual deficiencies
- RWP briefings and worker instructions
- Adequacy of radiological controls such as, required surveys, radiation protection job coverage, and contamination controls during job performance
- 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 area 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

The inspectors completed 21 of the required 21 samples.

b. Findings

Introduction. The inspectors reviewed a Green self-revealing NCV of 10 CFR 20.1501(a). Specifically, on March 31, 2008, the radiation protection staff failed to perform a survey to evaluate and determine the radiological hazards in the pressurizer cubicle during a primary coolant system crud burst, before allowing a worker into the area. The violation had very low safety significance.

Description. On March 31, 2008, radiation protection allowed a worker in the pressurizer cubicle during a chemically induced crud burst from the primary coolant system cleanup. Radiation protection had briefed the worker based on radiation surveys from March 30, 2008, which did not account for radiological conditions around the pressurizer being affected by the crud burst. On March 30, 2008, the dose rates around the pressurizer cubicle work location measured approximately 70-100 millirem per hour general area. However, on March 31, 2008, the worker's electronic dosimeter, that had a setpoint of 250 millirem per hour, alarmed when he received an unexpected peak dose rate of 277 millirem per hour. Radiation Protection investigated the cause of the alarm and found that radiation levels had changed around the pressurizer cubicle measuring about 180-200 millirem per hour general area. The radiological conditions had changed due to an unanticipated crud burst that affected the pressurizer. The licensee's investigation determined that subsequent to 2006, the primary coolant system configuration was changed to include the pressurizer in recirculation during the chemically induced crud. However, radiation protection had not evaluated the hazard and need for using updated radiation surveys when allowing workers in the pressurizer cubicle. Long term corrective actions were still being evaluated at the time of this inspection.

Analysis. The failure to perform an adequate survey is a performance deficiency. The finding was greater than minor because it was associated with the Occupational Radiation Safety Cornerstone attribute (exposure control) of program and process and affected the cornerstone objective, in that, failure to conduct a radiation survey had the potential to increase personnel dose. This occurrence involved a worker's unplanned and unintended exposure to radiation. Therefore, using the Occupational Radiation Safety Significance Determination Process, the finding was determined to be of very low safety significance (Green) because it was not an ALARA finding, there was no overexposure or substantial potential for an overexposure, and the ability to assess dose was not compromised. The finding was self-revealing because the licensee was alerted to the unexpected dose rates in the pressurizer cubicle by an alarming electronic dosimeter. Additionally, this finding had human performance crosscutting aspects associated with work practices, because the licensee failed to ensure interdepartmental communication and coordination during the crud burst between radiation protection, chemistry, and operations to assure timely radiation safety information was provided to workers [H.3(b)].

Enforcement. Title 10 CFR 20.1501(a) requires that each licensee make or cause to be made surveys that may be necessary for the licensee to comply with the regulations in 10 CFR Part 20 and that are reasonable under the circumstances to evaluate the magnitude and extent of radiation levels, concentrations or quantities of radioactive materials, and the potential radiological hazards that could be present. Pursuant to 10 CFR 20.1003, a "survey" means an evaluation of the radiological conditions and potential hazards incident to the production, use, transfer, release, disposal, or presence of radioactive material or other sources of radiation. 10 CFR 20.1201(a) states, in part, that the licensee shall control the occupational dose to individual adults to specified limits.

Contrary to the above, on March 31, 2008, the licensee failed to make necessary surveys of the pressurizer cubicle to evaluate potential radiological hazards to control an individual's occupational dose. Consequently, an individual received unintended and unexpected radiation exposure because the magnitude and extent of radiation levels

and potential radiological hazards were not evaluated during a primary coolant system crud burst. Because this failure to perform radiological surveys is of very low safety significance and has been entered into the licensee's CAP as CR 08-5399, this violation is being treated as a NCV, consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000498/2008003-03, "Failure to Conduct Adequate Radiation Surveys in the Pressurizer Cubicle."

2OS2 As Low as is Reasonably Achievable (ALARA) Planning and Controls (71121.02)

a. Inspection Scope

The inspectors assessed licensee performance with respect to maintaining individual and collective radiation exposures ALARA. The inspectors used the requirements in 10 CFR Part 20 and the licensee's procedures required by TSs as criteria for determining compliance. The inspectors interviewed licensee personnel and reviewed:

- ALARA work activity evaluations, exposure estimates, and exposure mitigation requirements
- Method for adjusting exposure estimates, or re-planning work, when unexpected changes in scope or emergent work were encountered
- Exposure tracking system
- Use of engineering controls to achieve dose reductions and dose reduction benefits afforded by shielding
- Radiation worker and radiation protection technician performance during work activities in radiation areas, airborne radioactivity areas, or high radiation areas
- Workers' use of the low dose waiting areas
- Source-term control strategy or justifications for not pursuing such exposure reduction initiatives
- Specific sources identified by the licensee for exposure reduction actions and priorities established for these actions, and results achieved against since the last refueling cycle

The inspectors completed four of the required fifteen samples and four of the optional samples.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

.1 Cornerstone: Initiating Events

a. Inspection Scope

The inspectors sampled licensee submittals for the three PIs listed below for the period from April 2007 through March 2008 for Units 1 and 2. The definitions and guidance of NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, were used to verify the licensee's basis for reporting each data element in order to verify the accuracy of PI data reported during the assessment period. The inspectors reviewed licensee event reports, monthly operating reports, and operating logs as part of the assessment. Licensee PI data were also reviewed against the requirements of Procedures OPGP05-ZN-0007, "Preparation and Submittal of NRC Performance Indicators," Revision 3, and OPGP05-ZV-0013, "Performance Indicator Tracking Guide," Revision 3.

- Unplanned scrams per 7,000 critical hours
- Unplanned scrams with complications
- Unplanned transients per 7,000 critical hours

The inspectors completed three samples per unit.

b. Findings

No findings of significance were identified.

.2 Cornerstone: Occupational Radiation Safety

a. Inspection Scope

The inspectors reviewed licensee documents from November 30, 2007 through March 31, 2008. The review included corrective action documentation that identified occurrences in locked high radiation areas (as defined in the licensee's TSs), 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 inspectors interviewed licensee personnel that were accountable for collecting and evaluating the PI data. In addition, the inspectors toured plant areas to verify that high radiation, locked high radiation, and very high radiation areas were properly controlled. PI definitions and guidance contained in NEI 99-02 were used to verify the basis in reporting for each data element.

b. Findings

No findings of significance were identified.

- Occupational Exposure Control Effectiveness

.3 The inspectors completed the required sample (1) in this cornerstone.
Cornerstone: Public Radiation Safety

a. Inspection Scope

The inspectors reviewed licensee documents from November 30, 2007 through March 31, 2008. 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 inspectors interviewed licensee personnel that were accountable for collecting and evaluating the PI data. PI definitions and guidance contained in NEI 99-02 were used to verify the basis in reporting for each data element.

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

The inspectors completed the required sample (one) in this cornerstone.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

.1 Routine Review of Identification and Resolution of Problems

The inspectors performed a daily screening of items entered into the licensee's CAP. This assessment was accomplished by reviewing WOs, CRs, and attending corrective action review and work control meetings. The inspectors: (1) verified that equipment, human performance, and program issues were being identified by the licensee at an appropriate threshold and that the issues were entered into the CAP; (2) verified that corrective actions were commensurate with the significance of the issue; and (3) identified conditions that might warrant additional followup through other baseline inspection procedures.

.2 Selected Issue Followup Inspection

a. Inspection Scope

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

- June 28, 2008, Units 1 and 2, work process controls and equipment clearance order usage to support maintenance

Documents reviewed by the inspectors are listed in the attachment.

b. Findings

No findings of significance were identified.

.3 Semiannual Trend Review

a. Inspection Scope

The inspectors completed a semi-annual trend review of repetitive or closely related issues that were documented in trend reports, health reports, QA audits, corrective action documents, etc., to identify trends that might indicate the existence of more safety significant issues. The inspectors review consisted of the 6-month period of January through June 2008. When warranted, some of the samples expanded beyond those dates to fully assess the issue. The inspectors compared and contrasted their results with the results contained in the licensee's trend reports. Corrective actions associated with a sample of their issues identified in the licensee's trend report were reviewed for adequacy.

When evaluating the effectiveness of the licensee's corrective actions for these issues, the following attributes were considered:

- Complete and accurate identification of the problem in a timely manner commensurate with its significance and ease of discovery
- Evaluation and disposition of operability and reportability issues
- Consideration of extent of condition, generic implications, common cause, and previous occurrences
- Classification and prioritization of the resolution of the problem commensurate with its safety significance
- Identification of root and contributing causes of the problem for significant conditions adverse to quality
- Identification of corrective actions which are appropriately focused to correct the problem
- Completion of corrective actions in a timely manner commensurate with the safety significance of the issue

Documents reviewed by the inspectors are listed in the attachment.

b. Findings

No findings of significance were identified. However, the inspectors did make the following observation which was shared with licensee management. The licensee has captured each of the events in their CAP under different CRs.

- While reviewing events related to the Unit 1 Refueling Outage 1RE14, a potential declining trend in the work control process revealed itself, in that, the licensee was creatively using the work control process, particularly the equipment clearance order process and the reliance on individual knowledge, to promote/track work. This may indicate that the outage work control process may lack adequate guidance documents, rigor, and that some methods being used are inappropriate for the task.

.4 Occupational Radiation Safety Review

a. Inspection Scope

The inspectors evaluated the effectiveness of the licensee's problem identification and resolution process with respect to the following inspection areas:

- Access Control to Radiologically Significant Areas (Section 2OS1)
- ALARA Planning and Controls (Section 2OS2)

b. Findings

No findings of significance were identified.

4OA5 Other Activities

.1 (Closed) Temporary Instruction (TI) 2515/166, "Pressurized Water Reactor Containment Sump Blockage," South Texas Project Nuclear Operating Company Units 1 and 2

a. Inspection Scope

TI 2515/166 was continued at South Texas Project, Units 1 and 2, during April 2008. The objective of this TI is to support the NRC's review of the licensee's activities in response to NRC GL 2004-02, "Potential Impact of Debris Blockage on Emergency Sump Recirculation at Pressurized Water Reactors." South Texas Project has submitted and been granted an extension for their final response to GL 2004-02. The extension, as documented in a letter from Nuclear Reactor Regulation (NRR) dated July 2, 2008, expires on December 12, 2008. Final closure of GL 2004-02 for South Texas Project is not expected until completion of final testing of sump modifications and finalization of the design basis. South Texas Project Nuclear Operating Company (STPNOC) will submit a letter by December 12, 2008, verifying completion of all GL 2004-02 corrective actions and confirming compliance with the regulatory requirements listed in GL 2004-02. Based on commitments included in the licensee's submittal, "Supplemental to Request for Extension for Final Response to GL 2004-02 and Implementation of Revised Design Basis for ECCS Sump," dated December 13, 2007, and reaffirmed in "Supplement 3 to

the Response to GL 2004-02," dated February 29, 2008, the inspection phase of TI 2515/166 for Units 1 and 2 is complete.

Verify the implementation of the plant modifications and procedure changes committed to by the licensee in their GL 2004-02 responses.

- (1) STPNOC has completed the following actions on Units 1 and 2:
 - (a) The original design emergency core cooling system (ECCS) strainers for both South Texas Project units have been replaced with new design strainers. The new design increases the surface area of each strainer from 150.4 sq. ft. to 1818.5 sq. ft. The diameter of the screen perforations has been reduced from 0.25" to 0.095," reducing the potential for downstream debris effects.
 - (b) Surveillance procedure (0PSP04-XC-0001) for inspection of the new design strainers has been revised. The procedure requires a visual inspection of the entire exterior and the interior of the strainers, which includes a visual inspection of the sump, vortex suppressor, and strainer core tubes.
 - (c) The procedure for DCPs (0PGP04-ZE-0309) has been enhanced with additional controls related to managing potential debris sources such as insulation, post-loss-of-coolant accident recirculation flow paths, and qualified coatings, addition of aluminum or zinc, and effect of post-loss-of-coolant accident debris on downstream components.
 - (d) Three-dimensional computational fluid dynamics analysis for debris transport was performed to define the debris loading on the sump strainers, and to verify that debris interceptors are not required.
 - (e) Additional measures implemented include refilling the refueling water storage tank after verification of proper swap over to cold leg recirculation, provision of guidance in emergency operating procedures for restoration of recirculation or for alternate cooling methods if flow blockage occurs, and operator training on indications of and response to strainer clogging.
- (2) The following actions are pending for Units 1 and 2:
 - (a) Additional strainer head loss testing for chemical effects.
 - (b) Validation of available net positive suction head margin for the new strainers under different conditions.
 - (c) Additional actions are required prior to the vendor completing a final test report that meets the requirements of the procurement specifications, including those of 10 CFR Part 50, Appendix B, for control of purchased services and procurement document control.
 - (d) Additional actions are required to complete formal verification of design inputs, assumptions and conclusions of calculations and evaluations conducted in response to issues identified in GL 2004-02, including possible revision of the downstream effects analyses.

(e) Possible revision of downstream effects analyses could possibly be needed.

Following completion of the testing and 10 CFR Part 50, Appendix B, activities described above and the associated changes to the South Texas Project licensing basis, STPNOC will submit a letter by June 30, 2008, verifying completion of all GL 2004-02 corrective actions and confirming compliance with the regulatory requirements listed in GL 2004-02.

.2 TI 2515-172, "Reactor Coolant System Dissimilar Metal Butt Welds"

TI 2515/172, "Reactor Coolant System Dissimilar Metal Butt Welds" was performed at South Texas Project Unit 1 during 1RE14 in April, 2008.

a. Inspection Scope

(1) ISI program

STPNOC has prepared an Alloy 600 Management Program incorporating requirements of Materials Reliability Program (MRP)-139. Dissimilar metal butt weld (DMBW) inspections are scheduled consistent with the requirements of Tables 6-1 and 6-2 of MRP-139. In support of the Alloy 600 Management Program, the licensee maintains a tracking database for their DMBWs, which includes the weld location, NDE method of inspection, schedule for inspection, and status relative to their 10-year ISI plan.

STPNOC requested and was granted an extension to the scheduling requirements of MRP-139 for Unit 1 DMBWs.

Five welds on the Unit 1 Pressurizer were categorized as "H" in accordance with MRP-139, Section 6.8. All five welds are currently being mitigated by full structural weld overlays and will be re-categorized as "B" welds for future inspections. No category "I" welds exist.

The inspectors' review determined that the hot leg and cold leg DMBWs are appropriately categorized in accordance with MRP-139 requirements.

The licensee's MRP-139 ISI Program will receive additional inspection effort in the future to examine the licensee's progress.

(2) Licensee's Implementation of the MRP-139 Baseline Inspections

(a) MRP-139 baseline inspections:

- (i) The inspectors observed performance and reviewed records of structural weld overlays and NDE activities associated with the South Texas Project Units 1 and 2 Pressurizer structural weld overlay mitigation effort. The baseline inspections of the pressurizer DMBWs for Unit 1 were completed during the Spring 2008 refueling outage. The baseline inspections of the Pressurizer DMBWs for Unit 2 were completed during the Spring 2007 refueling outage.

- (ii) At present, the licensee is not planning any deviations from the baseline inspection requirements of MRP-139, and all other applicable DMBWs are scheduled in accordance with MRP-139 guidelines and NRC approved schedules.

(3) Volumetric Examinations

- (a) There have been no inspections of unmitigated DMBWs performed, prior to this outage, which meet the requirements of the MRP-139 guidelines (i.e., personnel, procedures, and equipment qualified in accordance with ASME Code, Section XI, Supplement VIII [Performance Demonstration Initiative] requirements). Previous inspections of unmitigated DMBWs were performed prior to Performance Demonstration Initiative requirements.
- (b) Inspectors directly observed and reviewed records of NDE performed on Unit 1 pressurizer weld overlays.

Weld overlays were performed and inspected in conformance NRC approved relief request RR-ENG-2-43, "Application of Weld Overlays in Pressurizer Nozzle Safe End Welds," dated April 2, 2007, and relief request RR-ENG-2-48, "Relief Request from ASME Code Case N-638-1 Requirements Regarding the Start Time for the 48-Hour Hold Period Before NDE of Weld Overlay Repair," dated January 10, 2008.

Inspection coverage met requirements of MRP-139.

- (c) The certification records of ultrasonic examination personnel used in the examination of the mitigated pressurizer DMBWs were reviewed. All personnel records showed that they were qualified under the Electric Power Research Institute Performance Demonstration Initiative.
- (d) Deficiencies were identified during the NDE, and correctly dispositioned.

(4) Weld Overlays

- (a) The inspectors observed structural weld overlay welding and reviewed records pertaining to the pressurizer nozzles and determined that welding was performed in accordance with ASME Code Section IX requirements.
- (b) Weld overlays on the Unit 1 Pressurizer Spray (PRZ-1-N2-SE), Safeties (PRZ-1-N3-SE, PRZ-1-4B-SE, PRZ-1-4C-SE) and Relief (PRZ-1-N4A-SE) nozzles were performed and inspected in conformance with NRC approved relief request RR-ENG-2-43, "Application of Weld Overlays in Pressurizer Nozzle Safe End Welds," dated April 2, 2007, and relief request RR-ENG-2-48, "Relief Request from ASME Code Case N-638-1 Requirements Regarding the Start Time for the 48-Hour Hold Period Before NDE of Weld Overlay Repair," dated January 10, 2008.

Unit 1 Pressurizer surge line nozzle (PRZ-1-N1-SE) DMBW was mitigated by full structural weld overlay during the Fall 2006 outage (1RE13).

- (c) The qualification records of welders were reviewed and all qualifications were current. The filler material purchase order, certified material test reports, and receiving inspection report were all reviewed. Chemical composition of 52M filler material (ERNiCrFe-7A) was compared to ASME Code Case 2142-2, "F-Number Grouping for Ni-Cr-Fe Filler Metals," Table 1, "Chemical Requirements."
- (d) Deficiencies identified during weld overlays were correctly identified and dispositioned.

(5) Mechanical Stress Improvement

No mechanical stress improvement processes used during this outage.

b. Findings

No findings of significance were identified.

.3 Quarterly Resident Inspector Observations of Security Personnel and Activities

a. Inspection Scope

During the inspection period, the inspectors performed the following observations of security force personnel and activities to ensure that the activities were consistent with licensee's 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 inspector's normal plant status review and inspection activities.

b. Findings

No findings of insignificance were identified.

4OA6 Meetings, Including Exit

On April 11, 2008, the inspectors presented the occupational radiation safety inspection results to Mr. E. Halpin, Chief Nuclear Officer, and other members of the licensee's staff who acknowledged the findings. The inspectors confirmed that proprietary information was not provided or examined during this inspection.

On April 18, 2008, the inspectors presented the results of the ISI inspection to Mr. D. Rencurrel, Site Vice President, and other members of the licensee's management staff. Licensee's management acknowledged the inspection findings. The inspectors returned proprietary material examined during the inspection.

On July 1, 2008, the inspectors presented the inspection results of the integrated inspection report to Mr. E. Halpin, Chief Nuclear Officer, and other members of the

licensee's management staff. The licensee acknowledged the findings presented. The inspectors noted that while proprietary information was reviewed, none would be included in this report.

4OA7 Licensee-Identified Violations

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

- Title 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," provides, in part, that procedures shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished. Contrary to this requirement, on April 17, 2007, the licensee failed to verify the blocking relay for the Unit 2 pressurizer PORVs were closed upon system restoration. This would have prevented the PORVs from opening in an over-pressurization event. Upon discovery, the licensee measured the resistance across the relay contacts and verified the contacts were closed. This was identified in the licensee's CAP as CR 08-5642. This finding is of very low safety significance because the pressurizer safety valves are of a large enough size to depressurize the RCS in the event of an overpressure condition.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

R. Aguilera, Supervisor, Radiation Protection
M. Berg, Manager, Engineering Projects
C. Bowman, General Manager Oversight
W. Bullard, Manager, Health Physics
K. Coates, Plant General Manager
D. Cobb, STP Employee Concerns Program (EAP) Manager
R. Dunn Jr., Supervisor, Configuration Control and Analysis
R. Engen, Manager, Maintenance Engineering
T. Frawley, Manager, Plant Protection
R. Gangluff, Manager, Chemistry, Environmental and Health Physics
C. Grantom, Manager, PRA
E. Halpin, Chief Nuclear Officer
S. Head, Manager, Licensing
G. Hildebrant, Manager, Operations, Unit 2
K. House, Manager, Design Engineering
G. Janak, Manager, Operations, Unit 1
B. Jenewein, Manager, Testing and Programs Engineering
N. Mayer, Supervisor, Outage
A. McGalliard, Manager, Performance Improvement
J. Mertink, Manager, Operations
H. Murray, Manager, Maintenance
M. Murray, Manager, Systems Engineering
R. Niemann, Site Authorized Nuclear Inspector
G. Powell, Vice President, Engineering
M. Reddix, Manager, Security
D. Rencurrel, Site Vice President
M. Ruvalcaba, Supervisor, Systems Engineering
J. Sepulveda, Supervisor, Radiation Protection
J. Sheppard, President and CEO
W. Sotos, Supervisor, Design Engineering
C. Stone, Unit 1 Supervisor, Health Physics
K. Taplett, Senior Engineer, Licensing Staff Specialist
D. Towler, Manager, Quality
C. Younger, Test Engineering Supervisor

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000498/2008003-01	NCV	Failure to Follow Procedure Results in Motor Operated Valve Motor Damage (Section 1R19)
05000498/2008003-02 05000499/2008003-02	NCV	Failure to evaluate and/or Document Multiple Boric Acid Leaks with Changed Conditions (Section 1R20)
05000498/2008003-03	NCV	Failure to Conduct Adequate Radiation Surveys in the Pressurizer Cubicle (Section 2OS1)

Closed

05000498	TI 2515/166	“Pressurized Water Reactor Containment Sump Blockage,” South Texas Project Nuclear Operating Company Unit 1 (Closed) (Section 4OA5)
05000499	TI 2515/166	“Pressurized Water Reactor Containment Sump Blockage,” South Texas Project Nuclear Operating Company Unit 2 (Closed) (Section 4OA5)

LIST OF DOCUMENTS REVIEWED

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

Section 1R01: Adverse Weather Protection

Procedures

ERCOT Operating Guides, Section 4: Emergency Operation

OPGP03-ZO-0045, “Center Point Energy Real Time Operations Emergency Operations Plan,” Revision 1

OPOP01-ZA-0021, “AC Electrical Notes and Precautions,” Revision 6

OPOP01-ZO-0002, “345 kV Switchyard Switching and Clearance Guidelines,” Revision 5

OPOP04-AE-0005, “Offsite Power System Degraded Voltage,” Revision 2

South Texas Project Electric Generating Station – Owners Communication Plan, July 11, 2007

Section 1R04: Equipment Alignment

Drawings

5V119V10001#1, "HVAC Essential Chilled Water System," Revision 31
3V119V10002#1, "HVAC Essential Chilled Water System," Revision 13
5R289F05038#1, "Essential Cooling Water System Train 1A," Revision 13

Procedures

OPOP02-AF-0001, "Auxiliary Feedwater," Revision 25
OPOP02-CH-0001, "Essential Chilled Water System", Revision 39

Section 1R08: Inservice Inspection Activities

CRs

03-5680	06-7781	08-4947	08-6364
05-12633	06-12195	08-5641	08-6366
05-3989	07-14144	08-5893	

Drawings

E 11073-101-002, "Closure head Penetrations Machining and Cladding," Revision 5
DR-4278B-8, "Top Dome Insulation Layout TH-1," Revision B

Miscellaneous

MT-2008-073, "Magnetic Particle Examination, Reactor Pressure Vessel Stud 19A,"
April 10, 2008

MT-2008-094, "Magnetic Particle Examination, Auxiliary Feedwater Nozzle to Shell Weld,
Steam Generator A," April 9, 2008

PT-2008-29, "Liquid Penetrant Examination of RHAHRS-1A-SK / RHR Heat Exchanger to
Support skirt weld," April 14, 2008

RT-2008-069, "Radiographic Examination Report," April 8, 2008

SG-SGDA-06-43 (Westinghouse Proprietary), "South Texas 1RE13 Steam Generator Condition
Monitoring Assessment and Operational Assessment," October 2006

STP-PT-001, "Liquid Penetrant Inspection Report for Pressurizer Nozzle N2 (Spray Nozzle)
Weld Overlay Repair," April 4, 2008

STP-PT-003, "Liquid Penetrant Inspection Report for Pressurizer Nozzle N4A (ISI N4C) Weld
Overlay Repair," April 4, 2008

UT-2008-119, "Ultrasonic Examination - 16-RC-1412-9 Bent Pipe to Branch Connection," April 12, 2008

NOC-AE-06002094, "South Texas Project Unit 1 Results of Reactor Head Penetration Inspection Pursuant to Revision 1 of Order EA-03-009," December 12, 2006

Procedures

OPEP10-ZA-0003, "Radiographic Examination," Revision 3

OPEP10-ZA-0004, "General Ultrasonic Examination," Revision 3

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

OPEP10-ZA-0018, "Dry Powder Magnetic Particle Examination for ASME XI PSI/ISI," Revision 1

OPEP10-ZA-0019, "Wet Fluorescent Magnetic Particle Examination For ASME Section XI PSI/ISI," Revision 1

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

OPEP10-ZA-0031, "Reactor Vessel Closure Head and Control Rod Drive Mechanism (CRDM) Penetration Visual VT-2 Examinations," Revision 3

OPGP03-ZE-0033, "RCS Pressure Boundary Inspection for Boric Acid Leaks," Revision 9

OPSP11-RC-0016, "Susceptibility Category Assessment for Reactor Pressure Vessel Head Inspections," Revision 0

QAP 9.21, "Welding Services, Inc.: Liquid Penetrant Inspection Procedure, Solvent Removable Visible Dye for Alloy 690 Weld Overlay," Revision 2

Section 1R12: Maintenance Effectiveness

CRs

04-5570	05-7914	06-4098	08-6696
04-5575	05-13690	07-8422	08-7774
04-5852	06-3916	07-11949	08-8870
04-8770	06-4097	08-447	08-9744
04-11992	06-16419	08-3477	08-10149
05-7911			

System Health Reports

SDGs (DG, JW, LU, DO, SD, DI, DX), second quarter 2006 through first quarter 2008

WOs

441046

Section 1R15: Operability Evaluations

CRs

04-4841	08-5240	08-9382	08-9595
07-9956	08-7716		

Procedures

0PGP03-ZA-0090, "Work Process Program," Revision 32

0PMP01-ZA-0041, "Troubleshoot and Rework Process," Revision 9

0PMP04-RX-0019, "Rapid Refueling Mechanical Support," Revision 35

0PMP07-DM-0003, "Rapid Refueling Rod Holdout Operation," Revision 23

0PMP07-ZI-0109, "Rapid Refueling Cable Disconnect and Reconnect," Revision 13

0POP03-ZG-0007, "Plant Cooldown," Revision 52

0PSP03-MS-0001, "Main Steam System Valve Operability Test," Revision 27

0PSP05-NI-0046, "Extended Range Neutron Flux Channel Calibration (N-0046)," Revision 7

0PSP05-NI-0046A, "Extended Range NI Full Power Alignment and Calibration (N-0046)," Revision 12

Work Authorization Numbers

333969	358332	359558	360514
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WOs

487878

Section 1R18: Plant Modifications

CRs

08-6364

Drawings

5R149F05001#1, "RCS Primary Coolant Loop," Revision 36

Procedures

0POP09-AN-05M2, "Annunciator Lampbox 5M02 Response Instructions," Revision 31

OPOP03-RC-0100, "RCS Vacuum Fill," Revision 31

WO

464775

Section 1R19: Postmaintenance Testing

CRs

05-1437	08-7427	08-9453	08-9489
08-5240	08-8587	08-9459	08-9494
08-5486	08-9372		

DCP

05-1437-4, "Install New 480V Power Cables to Class 1E E1C3 To Replace The Deteriorating Power Cables," Supplement 0 and Supplement 1

Procedures

OPGP03-ZM-0021, "Control of Configuration Changes," Revision 15

OPOP02-AE-0004, "120 Vac ESF Vital Distribution Power Supplies," Revision 26

OPSP03-EW-0008, "Essential Cooling Water Pump 1A(2A) Reference Values Measurement," Revision 14

OPSP03-SP-0005R, "SSPS Logic Train R Functional Test," Revision 25

Work Authorization Numbers

310476 357036

WOs

487878 488375 488525

Section 1R20: Refueling and Other Outage Activities

CRs

07-13482	08-631	08-1035	08-2257
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Miscellaneous

1RE14 Shutdown Risk Assessment Report

NS-CE-1101, Letter from C. Eicheldinger, Manager, Nuclear Safety Department, Westinghouse Electric Corporation to J. Stolz, Chief, Light Water Reactors, Branch 2, Division of Project

Management, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, "Consequences of Dropping the Upper Package During a Refueling," June 11, 1976

South Texas Project 1RE14 Outage Report, March 29, 2008 - April 27, 2008

ST-HL-AE-1129, Submittal of Revised Response to Generic Letter 81-07, "Control of Heavy Loads," October 19, 1984

VTD-W915-0005, "Crane Inspection Manual," Revision 0

WCAP-9198, "Reactor Vessel Head Drop Analyses," Revision 1

Preventive Maintenance

05000145	86013487	96001076	98000357
86013464	86013680	96000561	99000227
86013465	93001621	97000354	99000616
86013466	95003560	98000290	

Procedures

0PGP03-ZA-0069, "Control of Heavy Loads," Revision 21
0PGP04-ZA-0002, "Condition Report Engineering Evaluation," Revision 8
0PMP02-ZG-0003D, "Inspection for Multi-Hoist Cranes," Revision 0
0PMP04-JC-0002, "Polar Crane Inspection," Revision 17
0PMP04-RX-0019, "Rapid Refueling Mechanical Support," Revision 35

Work Authorization Numbers

310933	320948	322459	322682
315278	322020	322498	322709
315902	322047	322577	322710
315907	322456	322599	343132
315914	322457	322608	347543
318514	322458	322625	

Section 1R22: Surveillance Testing

CRs

08-5781	08-9382	08-9595
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Procedures

0PMP02-ZG-0011, "Alternate Valve Packing and Live-Load Valve Packing," Revision 22
0PMP08-ZI-0025, "Pneumatic/Spring Control Valve or Damper Calibration," Revision 26
0PSP03-MS-0001, "Main Steam System Valve Operability Test," Revision 27
0PSP03-PS-0001, "Primary Sampling System Valve Operability Test," Revision 14
0PSP03-RC-0006, "Reactor Coolant Inventory," Revision 18
0PSP03-SI-0003, "Low Head Safety Injection Pump 1C(2C) Inservice Test," Revision 13

WOs

471332

476958

Section 2OS1: Access Control To Radiologically Significant Areas (71121.02)

Section 2OS2: ALARA Planning and Controls (71121.02)

Audits and Self Assessments

Quality Monitoring Report (MN-08-1-33345)
Quality Monitoring Report (MN-08--033295)
Quality Monitoring Report (MN-07-0-32097)
Quality Monitoring Report (MN-07-0-30263)
Quality Monitoring Report (MN-07-0-30194)
Quality Audit Report 08-01, Radiological Controls, February 18-28, 2008
Self-Assessment; September 24-27, 2007

CRs

07-1256	07-15056	08-3572	08-5536
07-14630	07-15143	08-5400	08-5633
07-14907	08-2078	08-5440	08-5891

Procedures

0PGP03-ZR-0050, "Radiation Protection Program," Revision 8
0PGP03-ZR-0051, "Radiological Access and Work Controls," Revision 23
0PRP04-ZR-0004, "Release of Materials From Radiologically Controlled Areas," Revision 13
0PRP04-ZR-0010, "Radiation Work Permits/Radiological Work ALARA Reviews," Revision 22
0PRP04-ZR-0014, "Maintenance and Control of HEPA Vacuum Cleaners and Portable Ventilation Units," Revision 14
0PRP04-ZR-0015, "Radiological Posting and Warning Devices," Revision 22

RWPs

2008-1-0115	2008-1-0160	2008-1-0165	2008-1-0171
2008-1-0116	2008-1-0161	2008-1-0167	2008-1-0172
2008-1-0117	2008-1-0162	2008-1-0168	2008-1-0173
2008-1-0118	2008-1-0163	2008-1-0169	2008-1-0176
2008-1-0158	2008-1-0164		

Section 4OA2: Identification and Resolution of Problems

CRs

07-2529	08-2193	08-5847	08-7201
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07-15841
08-1594

08-5781

08-7124

08-9488

Procedures

OPGP03-ZO-0039, "Operations Configuration Management," Revision 24
OPGP03-ZO-ECO1B, "Equipment Clearance Order Field Operations," Revision 1
MG-0006, "Work Execution and Closeout Guideline," Revision 3
OPS-0001, "Operations Outage Guideline," Revision 0
WCG-0002, "Work Management Scheduling," Revision 17

Section 40A5: Other Activities

TI 2515/166, "PWR Containment Sump"

CRs

02-5326

07-5920

Drawings

3C269S1516, "Original Sump Design," Revision 4, April 30, 2007
SFS-STP-DD-00, "Sure-Flow Strainer General Arrangement," May 27, 2006
SFS-STP-DD-02, "Sure-Flow Strainer General Arrangement – Sump A," August 2, 2006
SFS-STP-DD-03, "Sure-Flow Strainer General Arrangement – Sump B," August 1, 2006
SFS-STP-DD-04, "Sure-Flow Strainer General Arrangement – Sump C," August 1, 2006

Miscellaneous

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LIST OF ACRONYMS

ac	alternating current
AFW	auxiliary feedwater
ALARA	as low as is reasonably achievable
ASME	American Society of Mechanical Engineers
CAP	corrective action program
CFR	Code of Federal Regulations
CRs	condition reports
DCP	design change package
DMBWs	dissimilar metal butt welds
ECCS	emergency core cooling system
ECW	essential cooling water
GL	generic letter
MCC	motor control center
MRP	Materials Reliability Program
MT	magnetic particle test
NCV	noncited violation
NDE	nondestructive examination
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
NRR	Nuclear Reactor Regulation
PDMS	plant data management system
PI	performance indicator
PORV	pressurizer power operated relief valve
PSI	preservice inspection
PT	penetrant test
RCP	reactor coolant pump
RCS	reactor coolant system
RHR	residual heat removal
RWPs	radiation work permits
SDG	standby diesel generator
SG	steam generator
SSC	structure, system, and component
STPNOC	South Texas Project Nuclear Operating Company
TI	temporary instructions
TSs	Technical Specifications
UFSAR	Updated Final Safety Analysis Report

UT	ultrasonic test
VT	visual test
VUHP	vessel upper head penetration
WO	work order