UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
1600 EAST LAMAR BLVD
ARLINGTON, TEXAS 76011-4511

February 13, 2012

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

Subject: SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION - NRC INTEGRATED INSPECTION REPORT 05000498/2011005 AND 05000499/2011005

Dear Mr. Halpin:

On December 31, 2011, 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 inspection report documents the inspection results which were discussed on January 5, 2012, with yourself and other members of your staff.

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

Two NRC identified and one self-revealing findings of very low safety significance (Green) were identified during this inspection.

All of these findings were determined to involve violations of NRC requirements. Further, two licensee-identified violations which were determined to be of very low safety significance are listed in this report. The NRC is treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2 of the Enforcement Policy.

If you contest these non-cited violations, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region IV; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at South Texas Project Electric Generating Station, Units 1 and 2, facility.

If you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region IV; and the NRC Resident Inspector at 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 available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's Agencywide Document Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Wayne C. Walker, Chief
Project Branch A
Division of Reactor Projects

Docket Nos.: 05000498, 05000499
License Nos.: NPF-76, NPF-80
Enclosure: Inspection Report 05000498/2011005 and 05000499/2011005
w/Attachment 1: Supplemental Information
w/Attachment 2: Documentation Request for Occupational Radiation Safety Inspection

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SUNSI Rev Compl.	☒ Yes ☐ No	ADAMS	☒ Yes ☐ No	Reviewer Initials	WW
Publicly Avail	☒ Yes ☐ No	Sensitive	☐ Yes ☒ No	Sens. Type Initials	WW

RI:DRP/PBA	SRI:DRP/PBA	SPE:DRP/PBA	C:DRS/PSB2	C:DRS/OB
BKTharakan	JLDixon	DLProulx	GEWerner	MSHaire
E-Walker	**E-Walker**	**/RA/**	**/RA/**	**SGarchow for**
2/8/12	2/13/12	1/27/12	2/10/12	2/1/12
C:DRS/PSB1	C:DRS/EB1	C:DRS/EB2	C:DRS/TSB	C:DRP/PBA
MCHay	TRFarnholtz	GBMiller	RDAlexander	WCWalker
PElkman for	**/RA/**	**/RA/**	**/RA/**	**/RA/**
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U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket:	05000498, 05000499
License:	NPF-76, NPF-80
Report:	05000498/2011005 and 05000499/2011005
Licensee:	STP Nuclear Operating Company
Facility:	South Texas Project Electric Generating Station, Units 1 and 2
Location:	FM521 - 8 miles west of Wadsworth Wadsworth, Texas 77483
Dates:	October 1 through December 31, 2011
Inspectors:	J. Dixon, Senior Resident Inspector B. Tharakan, CHP, Resident Inspector L. Carson II, Senior Health Physicist K. Clayton, Senior Operations Engineer J. Drake, Senior Reactor Inspector S. Garchow, Senior Operations Engineer N. Greene, PhD., Health Physicist J. Kramer, Senior Resident Inspector, Comanche Peak J. Watkins, Reactor Inspector
Accompanied By:	D. Bradley, Project Engineer
Approved By:	Wayne C. Walker, Chief, Project Branch A Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000498/2011005, 05000499/2011005; 10/01/2011 – 12/31/2011; South Texas Project Electric Generating Station, Units 1 and 2, Integrated Resident and Regional Report; Radiological Hazard; Occupational ALARA Planning; Identification and Resolution of Problems.

The report covered a 3-month period of inspection by resident inspectors and announced baseline inspections by regional based inspectors. Three Green non-cited violations of very low safety significance were identified. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using Inspection Manual Chapter 0609, "Significance Determination Process." The cross-cutting aspect is determined using Inspection Manual Chapter 0310, "Components Within the Cross-Cutting Areas." Findings for which the significance determination process does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

A. NRC-Identified Findings and Self-Revealing Findings

Cornerstone: Mitigating Systems

- Green. The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criteria III, "Design Control," for the failure to ensure that design standards were correctly translated into drawings, procedures, and instructions. Specifically, the design specifications of the Class 1E 4160 Vac buses were not maintained with the installation of a new transformer. The root cause investigation determined that the design change package that installed the new transformers on Units 1 and 2 in October 2009 and April 2010, respectively, was not modeled correctly. The licensee captured this event as Condition Report 11-10205 and implemented immediate compensatory measures of increased monitoring on the Class 1E 4160 Vac buses by implementing temporary logs to ensure that the Class 1E loads were within their technical specifications surveillance procedure acceptance criteria until the new design change package could be implemented on each unit.

  The finding was more than minor because it was associated with the Mitigating Systems Cornerstone attribute of Design Control and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inadequate design change package resulted in the licensee declaring the Unit 2 Class 1E 4160 Vac E2B bus inoperable because it was outside of the technical specification surveillance procedure acceptance criteria for longer than allowed by technical specifications. The inspectors performed the significance determination using NRC Inspection Manual Chapter 0609, Attachment 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," dated January 10, 2008, because it affected the Mitigating Systems Cornerstone while

the plant was at power. The finding was determined to be of very low safety significance because it was a design deficiency that did not result in a loss of functionality per Part 9900 Technical Guidance, "Operability Determinations & Functionality Assessments for Resolution of Degraded or Nonconforming Conditions Adverse to Quality or Safety," dated April 16, 2008. In addition, this finding had human performance cross-cutting aspects associated with work practices in that the licensee did not ensure supervisory and management oversight of work activities, including contractors, such that nuclear safety was supported [H.4(c)] (Section 4OA2).

Cornerstone: Occupational Radiation Safety

- Green. The inspectors reviewed a self-revealing non-cited violation of Technical Specification 6.8.1.a, for the failure to follow procedural and radiation work permit requirements. On April 22, 2011, work was performed in the Unit 1 reactor cavity and the health physics technician providing job coverage failed to verify dose and dose rate setpoints, and incorrectly assumed that removal of equipment measuring greater than 100 mrem per hour from the reactor cavity could proceed. Consequently, a contract radiation worker failed to comply with special instructions to not remove such equipment from the reactor cavity without the concurrence of a radiation protection supervisor or designee. As a result, the worker received two dose rate alarms. The licensee's corrective actions were to counsel the worker and technician to ensure a complete understanding of worker's radiation work permit instructions. In addition, licensee procedures were revised to require telemetry when removing items from the water. This issue was entered into the corrective action program as Condition Report 11-7217.

  The finding was more than minor because it was associated with the Occupational Radiation Safety Cornerstone attribute of Program and Process and affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation during routine operations. The finding resulted in the worker being exposed to higher radiation levels and potentially unintended dose. When processed through the Occupational Radiation Safety Significance Determination Process, the inspectors determined the finding to be of very low safety significance because it was not: (1) an ALARA finding, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an inability to assess dose. The finding had a cross-cutting aspect in the area of human performance, work practices component because the health physics technician, providing coverage, failed to define and effectively communicate expectations regarding procedural compliance [H.4(b)] (Section 2RS01).

- Green. On November 1, 2011, the inspectors identified a non-cited violation of Technical Specification 6.8.1.a, for the failure to follow procedures and minimize occupational doses during an outage maintenance activity for the disassembly of the Unit 2 reactor head. Specifically, Work Activity Number 376357 was not properly planned and managed, which resulted in unplanned worker dose. This work activity for the disassembly of the Unit 2 old reactor vessel closure head

during the Unit 2 spring 2010 outage had a projected dose of 8.396 rem. However, the job ended with an actual collective dose of 14.072 rem. This exceeded the dose estimate by 68 percent. The licensee addressed this issue in the corrective action program as Condition Reports 10-6669, 10-7863, and 11-29161.

This finding is more than minor because it affected the Occupational Radiation Safety Cornerstone attribute of Program and Process, in that, failure to follow ALARA procedures caused increased collective radiation dose for the job activity to exceed 5 person-rem and exceeded the planned dose by more than 50 percent. Using the Occupational Radiation Safety Significance Determination Process, the inspectors determined this finding to be of very low safety significance because although it involved ALARA planning and controls, the licensee's latest rolling 3-year average does not exceed 135 person-rem per unit. Furthermore, the finding had an associated cross-cutting aspect in the area of human performance, work control component because the licensee did not fully incorporate risk insights, job site conditions, plant structures, systems, and components, and radiological safety, as well as the need for planned contingencies to maintain doses ALARA [H.3(a)] (Section 2RS02).

B. Licensee-Identified Violations

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

REPORT DETAILS

Summary of Plant Status

Unit 1 began the inspection period at 100 percent rated thermal power and essentially remained there for the remainder of the inspection period.

Unit 2 began the inspection period at 100 percent rated thermal power and remained there until October 23, 2011, when the unit entered coastdown operations in preparation for Refueling Outage 2RE15. Unit 2 was shut down and commenced Refueling Outage 2RE15 on October 29, 2011. On November 21, 2011, Unit 2 commenced a reactor startup after completing Refueling Outage 2RE15. Unit 2 went critical and closed the main generator output breaker on November 22, 2011. One hundred percent rated thermal power was achieved on November 24, 2011. On November 29, 2011, Unit 2 experienced an automatic reactor trip as a result of main generator lockout condition. As a result, Unit 2 entered Forced Outage 2F1102, for repairs to the main generator and remained shut down for the remainder of the inspection period.

1. REACTOR SAFETY

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

1R04 Equipment Alignments (71111.04)

.1 Partial Walkdown

a. Inspection Scope

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

- November 1, 2011, Unit 1, train C essential chilled water system
- December 28, 2011, Unit 2, train A component cooling water system

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

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

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

b. Findings

No findings were identified.

.2 Complete Walkdown

a. Inspection Scope

On November 18, 2011, the inspectors performed a complete system alignment inspection of the train B residual heat removal system to verify the functional capability of the system. The inspectors selected this system because it was considered both safety significant and risk significant in the licensee's probabilistic risk assessment. The inspectors inspected the system to review mechanical and electrical equipment line ups, electrical power availability, system pressure and temperature indications, as appropriate, component labeling, component lubrication, component and equipment cooling, hangers and supports, operability of support systems, and to ensure that ancillary equipment or debris did not interfere with equipment operation. The inspectors reviewed a sample of past and outstanding work orders to determine whether any deficiencies significantly affected the system function. In addition, the inspectors reviewed the corrective action program database to ensure that system equipment-alignment problems were being identified and appropriately resolved. Specific documents reviewed during this inspection are listed in the attachment.

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

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

Quarterly Fire Inspection Tours

a. Inspection Scope

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

- November 1, 2011, Unit 1, standby diesel generator 11, Fire Zones Z502, Z505, Z508, Z511, and Z514
- November 4, 2011, Unit 2, standby diesel generator 22, Fire Zones Z501, Z504, Z507, Z510, and Z513

- November 15, 2011, Unit 1, auxiliary feedwater pump 13, Fire Zone Z403
- November 15, 2011, Unit 1, auxiliary feedwater pump 14, Fire Zone Z400

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

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

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

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

- December 16, 2011, Unit 1, standby diesel generator building

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

b. Findings

No findings were identified.

1R08 Inservice Inspection Activities (71111.08)

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

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

a. Inspection Scope

The inspectors observed six nondestructive examination activities and reviewed eight nondestructive examination activities that included four types of examinations. The licensee did not identify any relevant indications accepted for continued service during the nondestructive examinations.

The inspectors directly observed the following nondestructive examinations:

SYSTEM	WELD IDENTIFICATION	EXAMINATION TYPE
Safety Injection	2-SI-0010A	Visual Examination - VT-2
Reactor Coolant System	RC2422HL5015 Strut to Coupling	Visual Examination - VT-2
Safety Injection	2-SI-0010A	Penetrant Testing
Reactor Coolant System	RC2422HL5015 Strut to Coupling	Penetrant Testing
Reactor Coolant System	12-RC-2125-BB1-8	Ultrasonic Phased Array
Feedwater System	18-FW-2029-AA2 / IPLI-LPL8 / Pipe Lugs	Magnetic Particle Testing – Dry Powder

In addition to the above nondestructive examinations, the inspectors observed ultrasonic examination of safety injection system 8-inch piping, SI-1327-BB1, inspecting for foreign material (metaborite crystals) and gas accumulation.

The inspectors reviewed records for the following nondestructive examinations:

SYSTEM	WELD IDENTIFICATION	EXAMINATION TYPE
Safety Injection	2-SI-0010A	Visual Examination - VT-2
Reactor Coolant System	RC2422HL5015 Strut to Coupling	Visual Examination - VT-2
Reactor Coolant System	Reactor Vessel Support -Train A/ RVSA	Remote Visual Examination
Reactor Coolant System	Reactor Vessel Support -Train B/ RVSB	Remote Visual Examination
Safety Injection	2-SI-0010A	Penetrant Testing
Reactor Coolant System	RC2422HL5015 Strut to Coupling	Penetrant Testing
Reactor Coolant System	12-RC-2125-BB1-8	Ultrasonic Phased Array
Feedwater System	18-FW-2029-AA2 / IPLI-LPL8 / Pipe Lugs	Magnetic Particle Testing – Dry Powder

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

The inspectors reviewed one weld on a support for the reactor coolant system pressure boundary.

The inspectors reviewed records for the following welding activities:

SYSTEM	WELD IDENTIFICATION	WELD TYPE
Reactor Coolant System	RC2422HL5015 Strut to Coupling	Shielded Metal Arc Welding

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

These actions constitute completion of the requirements for Section 02.01.

b. Findings

No findings were identified.

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

a. Inspection Scope

The licensee did not perform inspections of the vessel upper head penetrations. No inspections were performed because the vessel upper head and its assembly were replaced and inspected in a previous outage.

These actions constitute completion of the requirements for Section 02.02.

b. Findings

No findings were identified.

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

a. Inspection Scope

The inspectors evaluated the implementation of the licensee's boric acid corrosion control program for monitoring degradation of those systems that could be adversely affected by boric acid corrosion. The inspectors reviewed the documentation associated with the licensee's boric acid corrosion control walkdown as specified in Procedure 0PGP03-ZE-0133, "Boric Acid Corrosion Control Program." The inspectors also reviewed the visual records of the components and equipment. The inspectors verified that the visual inspections emphasized locations where boric acid leaks could cause degradation of safety-significant components. The inspectors also verified that the engineering evaluations for those components where boric acid was identified gave assurance that the ASME Code wall thickness limits were properly maintained. The inspectors confirmed that the corrective actions performed for evidence of boric acid leaks were consistent with requirements of the ASME Code. Specific documents reviewed during this inspection are listed in the attachment.

These actions constitute completion of the requirements for Section 02.03.

b. Findings

No findings were identified.

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

a. Inspection Scope

The licensee did not perform inspections of the steam generator tube inspection analysis. No inspections were performed because the steam generators were replaced and inspected in a previous outage, and no inspections were required this outage.

These actions constitute completion of the requirements for Section 02.04.

b. Findings

No findings were identified.

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

a. Inspection scope

The inspectors reviewed 15 condition reports which dealt with inservice inspection activities and found the corrective actions for inservice inspection issues were appropriate. From this review, the inspectors concluded that the licensee has an appropriate threshold for entering inservice inspection issues into the corrective action program and has procedures that direct a root cause evaluation when necessary. The licensee also has an effective program for applying industry inservice inspection operating experience. Specific documents reviewed during this inspection are listed in the attachment.

The inspectors reviewed the Reactor Coolant System Materials Management Program Self Assessment which was performed August 4-6, 2009. This self assessment, performed by the licensee's quality assurance department, reviewed the licensee's Materials Degradation Management Program. The conclusion of the self assessment identified that the program has been implemented to meet regulatory requirements. Additionally, the overall administration of the program was adequate with no deficiencies, but several areas for improvement. The self assessment identified 25 conditions adverse to quality. The inspectors reviewed these conditions to determine if the conditions were given appropriate treatment with respect to the licensee's corrective action program and safety significance. The inspectors determined that these conditions were entered into the corrective action program, and the licensee has an appropriate plan for resolving these conditions.

These actions constitute completion of the requirements of Section 02.05.

b. Findings

Introduction. The inspectors identified a potential performance deficiency related to the installation of a seal cap enclosure to control leakage from the pressure retaining bolted connection on safety injection system hot leg check valve 1N122XSI0010A, a portion of the reactor coolant system Class 1 pressure boundary. This issue is an unresolved item pending the review of additional information from the licensee and discussions with the

Office of Nuclear Reactor Regulation, Division of Engineering, Piping and Nondestructive Examination Branch.

Description. In Condition Report 11-22991, during Refueling Outage 2RE15, the licensee identified reactor coolant system leakage from the valve seal cap enclosure on valve 1N122XSI0010A, when the licensee inspected this component. This inspection identified boric acid crystals on the insulation. When the insulation was removed, water and boron crystals were found inside the seal cap enclosure and on the valve bonnet. A weld defect (slag inclusion and porosity) was identified on the seal cap enclosure to bonnet seal weld, which was reworked in Refueling Outage 2RE15 per the ASME Section XI Program. This seal cap enclosure was originally installed in 1997 due to identified leakage from the body to bonnet gasket of check valve 1N122XSI0010A.

On February 8, 1997, Condition Report 97-2156 documented steam coming from valve 1N122XSI0010A bonnet with boron buildup under the valve. The condition was identified while the system was at normal operating temperature and pressure, and was classified as a condition adverse to quality. The corrective action was to add a seal cap enclosure per the instructions of Work Package 336951 and the Westinghouse Vendor Technical Document VTD-W120-0652. However, the licensee stated in the design package that, "The actual pressure boundary is still considered the gasket seating area of the body to bonnet and not the enclosure. Therefore, the enclosure is not a pressure retaining component as defined in ASME (code) for this application." In addition, the design package calculation V-EC-1655 had the following statement, "The seal cap is considered a non-structural, non-pressure retaining attachment to the valve; therefore, it does not have to meet ASME Code allowables. This is because the pressure retaining function is still maintained by the main flange and its bolting. The material used must be identified and be compatible with the pressure retaining components." The licensee stated on numerous occasions that the design change did not shift the pressure boundary to the seal cap enclosure. When the licensee welded the seal cap enclosure around the valve body to bonnet gasket, it masked the leakage from the gasket. The licensee closed out Condition Report 97-2156 as completed, and the leakage from the body to bonnet joint on 1N122XSI0010A was no longer tracked in the corrective action program. The inspectors noted that the licensee documented leakage from the seal cap enclosure on multiple occasions between 1997 and 2011. These conditions were documented in Condition Reports 99-1108, 10-10120, and 11-22991. Despite repeated indications that there was an active boric acid leak from the pressure boundary, the leak from the bolted connection was not corrected, evaluated, or entered into the boric acid corrosion control program.

The inspectors identified issues of concern with not correcting the degraded body-to-bonnet gasket as well as the inspection and/or corrective actions specified in accordance with the ASME Code.

Corrective Action Considerations:

The inspectors identified the licensee's failure to replace the leaking body-to-bonnet gasket as an issue of concern which could result in the degradation and failure of the body-to-bonnet bolts. During a teleconference with the licensee on January 4, 2012, the licensee stated that the seal cap enclosure replaced the body-to-bonnet gasket and was

a safety-related constructed component. The inspectors asked the licensee to provide the information that showed that this component was a qualified safety-related component.

Code Considerations:

The inspectors identified two issues of concern with the installation of the seal cap as to how the licensee was meeting ASME Code requirements. The licensee is currently committed to ASME Code Section XI, 2004, without addendum. The two ASME Code issues of concern are as follows:

- ASME Code Section XI IWA 5250 (a), in part, states that the source of leakage detected during the conduct of a system pressure test shall be located and evaluated by the Owner for corrective measures.

- ASME Code Section XI, Table IWB-2500-1, Examination Category B-P, Item B15.10, requires a system leakage test and visual examination of all pressure retaining components.

The licensee stated that they were not required to evaluate this valve for corrective actions or to do a visual examination of the body-to-bonnet joint (pressure retaining component) because the seal cap encloses the joint and there is no visible leakage. The licensee further stated that there is no leakage across the joint when pressure equalizes across the leaking joint when the seal cap enclosure reaches reactor coolant system pressure, so they were in compliance with the code.

The inspectors are continuing to have discussions with personnel from the Office of Nuclear Reactor Regulation, Division of Engineering, Piping and NDE Branch, to determine the ASME Code requirements for this condition.

This issue was entered into the licensee's corrective action program as Condition Report 11-23693, and will be treated as an unresolved item pending the review of additional information from the licensee and discussions with Headquarters personnel: URI 05000499/2011005-01, "Seal Cap on Safety Injection System Hot Leg Check Valve."

1R11 Licensed Operator Requalification Program (71111.11)

.1 Quarterly Review

a. Inspection Scope

On December 12, 2011, the inspectors observed a crew of licensed operators in the plant's simulator to verify that operator performance was adequate, evaluators were identifying and documenting crew performance problems, and training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

- Licensed operator performance

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

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

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

b. Findings

No findings were identified.

.2 Biennial Inspection (71111.11B)

a. Inspection Scope

The licensed operator requalification program involves two training cycles that are conducted over a 2-year period. In the first cycle, the annual cycle, the operators are administered an operating test consisting of job performance measures and simulator scenarios. In the second part of the training cycle, the biennial cycle, operators are administered an operating test and a comprehensive written examination.

To assess the performance effectiveness of the licensed operator requalification program, the inspectors conducted personnel interviews, reviewed both the operating tests and written examinations, and observed ongoing operating test activities.

The inspectors interviewed 13 licensee personnel, consisting of 5 operators; 3 instructors; 4 managers; and the simulator supervisor, to determine their understanding of the policies and practices for administering requalification examinations. The inspectors also reviewed operator performance on the written exams and operating tests. These reviews included observations of portions of the operating tests by the inspectors. The operating tests observed included three job performance measures and two scenarios that were used in the current biennial requalification cycle. These observations allowed the inspectors to assess the licensee's effectiveness in conducting the operating test to ensure operator mastery of the training program content. The inspectors also reviewed medical records of seven licensed operators for

conformance to license conditions and the licensee's system for tracking qualifications. The inspectors did not review license reactivations because the licensee has not reactivated any licenses since the last biennial inspection in 2009.

The results of these examinations were reviewed to determine the effectiveness of the licensee's appraisal of operator performance and to determine if feedback of performance analyses into the requalification training program was being accomplished. The inspectors interviewed members of the training department and reviewed minutes of training review group meetings to assess the responsiveness of the licensed operator requalification program to incorporate the lessons learned from both plant and industry events. Examination results were also assessed to determine if they were consistent with the guidance contained in NUREG 1021, "Operator Licensing Examination Standards for Power Reactors," Revision 9, Supplement 1, and NRC Manual Chapter 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process."

In addition to the above, the inspectors reviewed examination security measures, simulator fidelity, and existing logs of simulator deficiencies.

On December 15, 2011, the licensee informed the lead inspector of the following Unit 1 and Unit 2 results for the Licensed Operator Requalification Program:

- Fifteen of fifteen crews passed the simulator portion of the operating test
- Eighty-eight of eighty-eight licensed operators passed the simulator portion of the operating test
- Eighty-seven of eighty-eight licensed operators passed the job performance measure portion of the examination
- Eighty-four of eighty-eight licensed operators passed the biennial written exam

The individuals that failed the applicable portions of their exams and operating tests were remediated, retested, and passed their retake exams.

The inspectors completed one inspection sample of the biennial licensed operator requalification program.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

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

- November 14, 2011, Units 1 and 2, chemical and volume control system (CV)
- December 21, 2011, Units 1 and 2, reactor coolant system (RC)

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

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

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

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

b. Findings

No findings were identified.

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

a. Inspection Scope

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

- October 3-25, 2011, Unit 2, using the configuration risk management program to exceed the front stop for safety-related 125 Vdc battery and inverter maintenance for trains A, B, C, and D

- October 27-November 23, 2011, Unit 2, Refueling Outage 2RE15

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

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

b. Findings

No findings were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed the following issues:

- October 20, 2011, Units 1 and 2, failure of the Unit 1 steam generator 1C outside reactor containment auxiliary feedwater isolation motor operated valve, MOV-0085, due to pinion gear damage from improper setting of set screws, and the other 108 Unit 1 and 2 motor operated valves that are susceptible

- December 17, 2011, Unit 2, residual heat removal heat exchanger 2A bypass flow control valve positioner linkage rod thread engagement evaluation

- December 27, 2011, Unit 1, train C essential cooling water system intake bay level instrumentation failure

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

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

b. Findings

See Section 4OA7 for a licensee-identified finding associated with the motor operated valve pinion gear damage.

1R19 Postmaintenance Testing (71111.19)

a. Inspection Scope

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

- October 13, 2011, Unit 1, engineered safety features (ESF) load sequencer train A invalid Mode II actuation resulting from a failed integrated circuit on the processor module (see Section 4OA3 for additional information)
- October 25, 2011, Unit 1, Wide Range Nuclear Instrument 46 indicated reactor power at 34 percent with actual reactor power at 100 percent due to a failed power supply
- November 16, 2011, Unit 2, ESF 4160 Vac train B transformer load tap changer setting adjustments and installation of alarm features
- December 16, 2011, Unit 1, component cooling water train 1A return header isolation valve MOV-0052, pinion inspection and rework for key, setscrew, and shaft dimple
- December 16, 2011, Unit 1, component cooling water train 1A heat exchanger outlet temperature control valve MOV-0643, pinion inspection and rework for key, setscrew, and shaft dimple

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

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

The inspectors evaluated the activities against the technical specifications, the UFSAR, 10 CFR Part 50 requirements, licensee procedures, and various NRC generic communications to ensure that the test results adequately ensured that the equipment met the licensing basis and design requirements. In addition, the inspectors reviewed corrective action documents associated with postmaintenance tests to determine whether the licensee was identifying problems and entering them in the corrective action program and that the problems were being corrected commensurate with their importance to safety. Specific documents reviewed during this inspection are listed in the attachment.

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

b. Findings

See Section 4OA2.4 for a finding associated with the ESF 4160 Vac train B transformer load tap changer settings.

1R20 Refueling and Other Outage Activities (71111.20)

.1 Unit 2 Refueling Outage 2RE15

a. Inspection Scope

The inspectors reviewed the outage safety plan and contingency plans for the Unit 2 Refueling Outage 2RE15, conducted from October 29, 2011, through November 22, 2011, to confirm that licensee personnel had appropriately considered risk, industry experience, and previous site-specific problems in developing and implementing a plan that assured maintenance of defense in depth. During the refueling outage, the inspectors observed portions of the shutdown and cooldown processes and monitored licensee controls over the outage activities listed below.

- Configuration management, including maintenance of defense in depth, is commensurate with the outage safety plan for key safety functions and compliance with the applicable technical specifications when taking equipment out of service.
- Clearance activities, including confirmation that tags were properly hung and equipment appropriately configured to safely support the work or testing.

- Installation and configuration of reactor coolant pressure, level, and temperature instruments to provide accurate indication, accounting for instrument error.
- Status and configuration of electrical systems to ensure that technical specifications and outage safety-plan requirements were met, and controls over switchyard activities.
- Monitoring of decay heat removal processes, systems, and components.
- Verification that outage work was not impacting the ability of the operators to operate the spent fuel pool cooling system.
- Reactor water inventory controls, including flow paths, configurations, and alternative means for inventory addition, and controls to prevent inventory loss.
- Controls over activities that could affect reactivity.
- Refueling activities, including fuel handling and sipping to detect fuel assembly leakage.
- Startup and ascension to full power operation, tracking of startup prerequisites, walkdown of the reactor containment building to verify that debris had not been left which could block emergency core cooling system suction strainers, and reactor physics testing.
- Licensee identification and resolution of problems related to the refueling outage activities.

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

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

b. Findings

No findings were identified.

.2 Unit 2 Forced Outage 2F1102

a. Inspection Scope

The inspectors reviewed the contingency plans for the Unit 2 Forced Outage 2F1102, which commenced on November 29, 2011, to confirm that licensee personnel had appropriately considered risk, industry experience, and previous site-specific problems in developing and implementing a plan that assured maintenance of defense in depth. During the forced outage, the inspectors responded to the reactor trip to observe the shutdown and cooldown processes, understand what equipment did not function as designed, and monitored licensee controls over the outage activities listed below.

- Configuration management, including maintenance of defense in depth, is commensurate with the outage safety plan for key safety functions and compliance with the applicable technical specifications when taking equipment out of service.
- Clearance activities, including confirmation that tags were properly hung and equipment appropriately configured to safely support the work or testing.
- Installation and configuration of reactor coolant pressure, level, and temperature instruments to provide accurate indication, accounting for instrument error.
- Status and configuration of electrical systems to ensure that technical specifications and outage safety-plan requirements were met, and controls over switchyard activities.
- Monitoring of decay heat removal processes, systems, and components.
- Reactor water inventory controls, including flow paths, configurations, and alternative means for inventory addition, and controls to prevent inventory loss.
- Controls over activities that could affect reactivity.
- Licensee identification and resolution of problems related to the forced outage activities.

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

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

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

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

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

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

- October 11, 2011, Unit 2, train C 125-volt battery surveillance test
- October 20, 2011, Unit 1, auxiliary feedwater train A outside reactor containment isolation valve surveillance test
- November 18, 2011, Unit 2, residual heat removal pump 2B in-service test

- November 21-28, 2011, Unit 2, reactor coolant system leakage detection system surveillance test

- December 12, 2011, Unit 2, supplementary containment purge supply outside reactor containment isolation valve test

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

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

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstone: Occupational and Public Radiation Safety

2RS01 Radiological Hazard Assessment and Exposure Controls (71124.01)

a. Inspection Scope

This area was inspected to: (1) review and assess licensee's performance in assessing the radiological hazards in the workplace associated with licensed activities and the implementation of appropriate radiation monitoring and exposure control measures for both individual and collective exposures, (2) verify the licensee is properly identifying and reporting Occupational Radiation Safety Cornerstone performance indicators, and (3) identify those performance deficiencies that were reportable as a performance indicator and which may have represented a substantial potential for overexposure of the worker.

The inspectors used the requirements in 10 CFR Part 20, the technical specifications, and the licensee's procedures required by technical specifications as criteria for determining compliance. During the inspection, the inspectors interviewed the radiation protection manager, radiation protection supervisors, and radiation workers. The inspectors performed walkdowns of various portions of the plant, performed independent radiation dose rate measurements and reviewed the following items:

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

- The hazard assessment program, including a review of the licensee's evaluations of changes in plant operations and radiological surveys to detect dose rates, airborne radioactivity, and surface contamination levels

- Instructions and notices to workers, including labeling or marking containers of radioactive material, radiation work permits, actions for electronic dosimeter alarms, and changes to radiological conditions

- Programs and processes for control of sealed sources and release of potentially contaminated material from the radiologically controlled area, including survey performance, instrument sensitivity, release criteria, procedural guidance, and sealed source accountability

- Radiological hazards control and work coverage, including the adequacy of surveys, radiation protection job coverage, and contamination controls; the use of electronic dosimeters in high noise areas; dosimetry placement; airborne radioactivity monitoring; controls for highly activated or contaminated materials (non-fuel) stored within spent fuel and other storage pools; and posting and physical controls for high radiation areas and very high radiation areas

- Radiation worker and radiation protection technician performance with respect to radiation protection work requirements

- Audits, self-assessments, and corrective action documents related to radiological hazard assessment and exposure controls since the last inspection

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

These activities constitute completion of the one required sample as defined in Inspection Procedure 71124.01-05.

b. Findings

Introduction. The inspectors reviewed a Green self-revealing non-cited violation of Technical Specification 6.8.1.a, which resulted from a worker and health physics technician failing to follow radiation protection procedures and radiation work permit requirements during work in the Unit 1 reactor cavity.

Description. On April 22, 2011, a contract radiation worker reported to the containment access facility for a prejob briefing on removing equipment from the reactor cavity. After the prejob briefing, the radiation worker crew leader and crew logged into the radiologically controlled area to work. A health physics technician, who was not at the prejob briefing, was assigned to perform job coverage. The health physics technician asked the crew leader what the alarming dosimeter dose rate setpoint was for the task. The crew leader replied the dose rate setpoint is 50 mrem per hour. The health physics technician incorrectly understood that the crew leader stated 150 mrem per hour and failed to verify these settings. As the work commenced, the crew lifted equipment from the water as the health physics technician surveyed the item being removed from the cavity. The item measured 990 mrem per hour on contact and 150 mrem per hour at 12 inches. Radiation Work Permit 2011-1-91, assigned to the crew, stated that "Permission from RP [radiation protection] supervisor/designee is required to continue activities if dose rates at the surface of the water exceed 100 mrem per hour." However, the crew and health physics technician did not comply with this step and continued to pull the item from the water with dose rates measuring greater than 100 mrem per hour. The inspectors' review confirmed that permission from a radiation protection supervisor or designee to remove the item was not received. When questioned, the crew leader stated that he was not aware of this specific step in the radiation work permit instructions. As the item was pulled from the water, the health physics technician

advised the crew leader to avoid close contact with the tool. However, the crew leader received a dose rate alarm that lasted for 84 seconds and a second dose rate alarm that lasted for 4 seconds. The peak dose rate was 624 mrem per hour versus a setpoint of 50 mrem per hour. Both the health physics technician and the crew leader wore headsets and failed to hear the alarms. Thus, the crew leader did not stop work, leave the work area, and contact radiation protection as instructed by his work instructions and procedure. It was not identified that the alarms occurred until the crew leader attempted to log out of the Radiologically Controlled Area.

Analysis. The finding was more than minor because it was associated with the Occupational Radiation Safety Cornerstone attribute of Program and Process and affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation during routine operations. The finding resulted in the worker being exposed to higher radiation levels and potentially unintended dose. When processed through the Occupational Radiation Safety Significance Determination Process, the inspectors determined the finding to be of very low safety significance because it was not: (1) an ALARA finding, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an inability to assess dose. The finding had a cross-cutting aspect in the area of human performance, work practices component because the health physics technician, providing coverage, failed to define and effectively communicate expectations regarding procedural compliance [H.4(b)].

Enforcement. Technical Specification 6.8.1.a, requires, in part, that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Appendix A to Regulatory Guide 1.33, "Quality Assurance Program Requirements," of February 1978. Section 7(e) to Regulatory Guide 1.33 requires, in part, that radiation protection procedures are established for access control to radiation areas, including a radiation work permit system. Procedure 0PGP03-ZR-0051, "Radiological Access Controls/Standards," Revision 26, Section 4.3.1, requires the radiation worker to know their radiation work permit requirements, including the special instructions. Radiation Work Permit 2011-1-91 stated that "Permission from RP [radiation protection] supervisor/designee is required to continue activities if dose rates at the surface of the water exceed 100 mrem per hour." Contrary to the above, on April 22, 2011, the contract worker/crew leader and health physics technician violated this requirement when the worker continued to pull an item from the water with dose rates greater than 100 mrem per hour and failed to confirm approval of this action by a radiation protection supervisor or a designee. Because this failure to follow radiation protection procedural guidance was of very low safety significance and has been entered into the licensee's corrective action program as Condition Report 11-7217, this violation is being treated as a non-cited violation consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 05000498/2011005-02; "Failure to Follow Radiation Protection Procedural Requirements."

2RS02 Occupational ALARA Planning and Controls (71124.02)

a. Inspection Scope

This area was inspected to assess performance with respect to maintaining occupational individual and collective radiation exposures ALARA. The inspectors used the

requirements in 10 CFR Part 20, the technical specifications, and the licensee's procedures required by technical specifications as criteria for determining compliance. During the inspection, the inspectors interviewed licensee personnel and reviewed the following items:

- Site-specific ALARA procedures and collective exposure history, including the current 3-year rolling average, site-specific trends in collective exposures, and source-term measurements
- ALARA work activity evaluations/postjob reviews, exposure estimates, and exposure mitigation requirements
- The methodology for estimating work activity exposures, the intended dose outcome, the accuracy of dose rate and man-hour estimates, and intended versus actual work activity doses and the reasons for any inconsistencies
- Records detailing the historical trends and current status of tracked plant source terms, and contingency plans for expected changes in the source term due to changes in plant fuel performance issues or changes in plant primary chemistry
- Radiation worker and radiation protection technician performance during work activities in radiation areas, airborne radioactivity areas, or high radiation areas
- Audits, self-assessments, and corrective action documents related to ALARA planning and controls since the last inspection

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

These activities constitute completion of the one required sample as defined in Inspection Procedure 71124.02-05.

b. Findings

Introduction. The inspectors identified a Green non-cited violation of Technical Specification 6.8.1.a, for the failure to follow procedures and minimize occupational doses during an outage maintenance activity for the disassembly of the Unit 2 reactor head.

Description. During the Unit 2 outage (spring 2010), the licensee inadequately planned the maintenance tasks associated with the disassembly of the old Unit 2 reactor head. Specifically, Work Activity Number 376357 (disassembly of the old reactor head) was not properly planned and managed, which resulted in unplanned worker dose. The work activity for the disassembly of the Unit 2 old reactor vessel closure head during the outage had a projected dose of 8.396 rem and 3998 man-hours. However, the job ended with an actual collective dose of 14.072 rem and 4580 man-hours, which exceeded the projected dose estimate by 68 percent.

The original projected dose was exceeded, in part, because the licensee encountered four stuck control rod drive mechanisms during the Unit 2 outage. The licensee had experienced 20 stuck control rod drive mechanisms during Unit 1 outage (fall 2009) for

reactor head disassembly activities. This unanticipated activity resulted in 8.162 rem of unplanned Unit 1 dose to workers. Difficulties with these stuck control rod drive mechanisms in Unit 2 required work to occur inside and outside the reactor shroud. The licensee failed to perform in-process reviews as additional dose accrued from the work inside the reactor shroud. Effective dose rates and the number of hours to complete the job were higher than originally planned. However, the licensee failed to stop work to perform in-process reviews as problems with the Unit 2 stuck control rod drive mechanisms became apparent inside the reactor shroud.

Procedure 0PRP07-ZR-0010, "Radiation Work Permits/Radiological Work ALARA Reviews," Revision 30, provides radiation protection with instructions for evaluating and implementing radiation exposure controls as part of work planning and performance. Step 7.21.4.1, of this procedure, requires the licensee to initiate in-process reviews if it is apparent that the job cannot be completed for less than or equal to 125 percent of the original dose projection. Step 7.21.6 instructs the licensee to utilize Addendum 1 for the documentation of this in-process review. Addendum 1 has the work group supervisor and radiation protection job coverage technicians to consider observations and lessons learned and dose reduction techniques for the rest of the job. The licensee also has to determine if radiological controls, dose projections, and man-hours have to be revised to decide if implementing additional controls is necessary. Then, if the job has not been completed, radiation protection incorporates the revised exposure saving controls for the job instructs the worker on the changes.

Analysis. The failure to follow ALARA procedures during maintenance activities is a performance deficiency. This finding is more than minor because it affected the Occupational Radiation Safety Cornerstone attribute of Program and Process, in that, failure to follow ALARA procedures caused increased collective radiation dose for the job activity to exceed 5 person-rem and exceeded the planned dose by more than 50 percent. Using the Occupational Radiation Safety Significance Determination Process, the inspectors determined this finding to be of very low safety significance because although it involved ALARA planning and controls, the licensee's latest rolling three-year average does not exceed 135 person-rem per unit. Furthermore, the finding had an associated cross-cutting aspect in the area of human performance, work control component because the licensee did not fully incorporate risk insights, job site conditions, plant structures, systems and components, and radiological safety, as well as the need for planned contingencies to maintain doses ALARA [H.3(a)].

Enforcement. Technical Specification 6.8.1.a requires written procedures be established, implemented, and maintained covering the applicable procedures recommended in Appendix A of Regulatory Guide 1.33, "Quality Assurance Program Requirements (Operation)," Revision 2, February 1978. Section 7e(9), "Implementation of ALARA Program," of Appendix A to Regulatory Guide 1.33 requires, in part, radiation protection procedures for the implementation of an ALARA program. Procedure 0PRP07-ZR-0010, "Radiation Work Permits/Radiological Work ALARA Reviews," Revision 30, Section 7.21, provided instructions on performing radiological in-process reviews of work activities. Step 7.21.4.1 required the licensee to determine if the job can be completed within 125 percent of the projected dose and to perform an in-process review if it is apparent that the job cannot be completed within this threshold. Contrary to the above, in April 2010, the licensee failed to determine that an in-process

review for Work Activity Number 376357 had to be initiated when it was apparent the projected dose would be exceeded by 125 percent for the Unit 2 stuck control rod drive mechanisms. Consequently, the licensee did not re-project doses, and implement dose saving controls for the job performed inside the reactor shroud. Because the violation was of very low safety significance and was entered into licensee's corrective action program as Condition Reports 10-6669, 10-7863, and 11-29161, this violation is being treated as a non-cited violation consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 05000499/2011005-03; "Failure to Follow Procedures and Maintain Doses ALARA."

4. OTHER ACTIVITIES

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

4OA1 Performance Indicator Verification (71151)

.1 Data Submission Issue

a. Inspection Scope

The inspectors performed a review of the performance indicator data submitted by the licensee for the third quarter 2011 performance indicators for any obvious inconsistencies prior to its public release in accordance with Inspection Manual Chapter 0608, "Performance Indicator Program."

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

b. Findings

No findings were identified.

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

a. Inspection Scope

The inspectors sampled licensee submittals for the mitigating systems performance index - emergency ac power system performance indicator for Units 1 and 2 for the period from the fourth quarter 2010 through the third quarter 2011. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors reviewed the licensee's operator narrative logs, mitigating systems performance index derivation reports, issue reports, event reports, and NRC integrated inspection reports for the period of October 2010 through September 2011 to validate the accuracy of the submittals. The inspectors reviewed the mitigating systems performance index component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with

applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator; and the licensee did identify a condition in which the 5-year overhaul planned activities numbers had not been appropriately reported. The licensee corrected the condition in the most recent data transmitted. Specific documents reviewed during this inspection are described in the attachment.

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

b. Findings

No findings were identified.

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

a. Inspection Scope

The inspectors sampled licensee submittals for the mitigating systems performance index - high pressure injection systems performance indicator for Units 1 and 2 for the period from the fourth quarter 2010 through the third quarter 2011. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors reviewed the licensee's operator narrative logs, issue reports, mitigating systems performance index derivation reports, event reports, and NRC integrated inspection reports for the period of October 2010 through September 2011 to validate the accuracy of the submittals. The inspectors reviewed the mitigating systems performance index component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed during this inspection are described in the attachment.

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

b. Findings

No findings were identified.

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

a. Inspection Scope

The inspectors sampled licensee submittals for the mitigating systems performance index - heat removal system performance indicator for Units 1 and 2 for the period from the fourth quarter 2010 through the third quarter 2011. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports, mitigating systems performance index derivation reports, and NRC integrated inspection reports for the period of October 2010 through September 2011 to validate the accuracy of the submittals. The inspectors reviewed the mitigating systems performance index component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed during this inspection are described in the attachment.

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

b. Findings

No findings were identified.

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

a. Inspection Scope

The inspectors sampled licensee submittals for the mitigating systems performance index - residual heat removal system performance indicator for Units 1 and 2 for the period from the fourth quarter 2010 through the third quarter 2011. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors reviewed the licensee's operator narrative logs, issue reports, mitigating systems performance index derivation reports, event reports, and NRC integrated inspection reports for the period of October 2010 through September 2011 to validate the accuracy of the submittals. The inspectors reviewed the mitigating systems performance index component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed during this inspection are described in the attachment.

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

b. Findings

No findings were identified.

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

a. Inspection Scope

The inspectors sampled licensee submittals for the mitigating systems performance index - cooling water systems performance indicator for Units 1 and 2 for the period from the fourth quarter 2010 through the third quarter 2011. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors reviewed the licensee's operator narrative logs, issue reports, mitigating systems performance index derivation reports, event reports, and NRC integrated inspection reports for the period of October 2010 through September 2011 to validate the accuracy of the submittals. The inspectors reviewed the mitigating systems performance index component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed during this inspection are described in the attachment.

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

b. Findings

No findings were identified.

.7 Occupational Exposure Control Effectiveness (OR01)

a. Inspection Scope

The inspectors reviewed performance indicator data for the first quarter of 2010 through the second quarter of 2011. The objective of the inspection was to determine the accuracy and completeness of the performance indicator data reported during these periods. The inspectors used the definitions and clarifying notes contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, as criteria for determining whether the licensee was in compliance.

The inspectors reviewed corrective action program records associated with high radiation area (greater than 1 rem/hr) and very high radiation area non-conformances. The inspectors reviewed radiological, controlled area exit transactions greater than 100 mrem. The inspectors also conducted walkdowns of high radiation areas (greater than 1 rem/hr) and very high radiation area entrances to determine the adequacy of the controls of these areas.

These activities constitute completion of the occupational exposure control effectiveness sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

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

a. Inspection Scope

The inspectors reviewed performance indicator data for the first quarter of 2010 through the second quarter of 2011. The objective of the inspection was to determine the accuracy and completeness of the performance indicator data reported during these periods. The inspectors used the definitions and clarifying notes contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, as criteria for determining whether the licensee was in compliance.

The inspectors reviewed the licensee's corrective action program records and selected individual annual or special reports to identify potential occurrences such as unmonitored, uncontrolled, or improperly calculated effluent releases that may have impacted offsite dose.

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

b. Findings

No findings were identified.

4OA2 Identification and Resolution of Problems (71152)

.1 Routine Review of Identification and Resolution of Problems

a. Inspection Scope

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

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

b. Findings

No findings were identified.

.2 Daily Corrective Action Program Reviews

a. Inspection Scope

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

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

b. Findings

No findings were identified.

.3 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a review of the licensee's corrective action program and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors focused their review on repetitive equipment issues, but also considered the results of daily corrective action item screening discussed in Section 4OA2.2, above, licensee trending efforts, and licensee human performance results. The inspectors nominally considered the 6-month period of July 2011 through December 2011, although some examples expanded beyond those dates where the scope of the trend warranted.

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

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

b. Findings

No findings were identified.

.4 Selected Issue Follow-up Inspection

a. Inspection Scope

During a review of items entered in the licensee's corrective action program, the inspectors recognized a continuing trend on corrective action items associated with the 13.8 kVac and Class 1E 4160 Vac transformers and load tap changers. The inspectors had previously inspected parts of this issue in NRC Inspection Report 05000498/2011004 and 05000499/2011004 (see Section 4OA2). The licensee was already in the process of performing a prompt operability determination, a reportability review, and a root cause investigation to understand the sequence of events that resulted in an inadequate design change package being implemented on the Units 1 and 2 Class 1E 4160 Vac ESF train B transformers, and setpoint changes on the Units 1 and 2 13.8 kVac unit auxiliary transformers. The licensee was also in the process of creating a new design change package to adjust the settings on the 13.8 kVac unit auxiliary transformers load tap changers and the Class 1E 4160 Vac ESF transformers and load tap changers. The inspectors reviewed all the condition reports generated, the UFSAR, technical specifications, design basis documents, the design change package, the root cause investigation, the operability determination, compensatory measures, station logs, vendor documents, and interviewed personnel.

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

b. Findings

Introduction. The inspectors identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criteria III, "Design Control," for the failure to ensure that design standards were correctly translated into drawings, procedures, and instructions. Specifically, the design specification of the Class 1E 4160 Vac buses were not maintained with the installation of the new transformer with a load tap changer feature.

Description. On May 14, 2011, during the weekly performance of the ESF power availability surveillance, the licensee discovered the voltage on the 480 Vac train B load centers E2B1 and E2B2 at 520 Vac, which exceeded the surveillance acceptance criterion of a maximum voltage of 506 Vac. Based on the failed surveillance, the E2B bus was declared inoperable. On May 15, 2011, the Class 1E 4160 Vac train B ESF transformer load tap changer was placed in manual and voltage was returned to within band, and the E2B bus was declared operable. The licensee determined that the voltage was outside of the acceptance criteria starting on May 8, 2011, and as a result exceeded the technical specification allowed outage time. Even though the licensee initially identified the issue, it is being dispositioned as NRC identified based on inspector added value. The inspectors added value by identifying a previously unknown weakness in the licensee's evaluation and corrective actions associated with the event. The inspectors identified that: (1) the licensee's prompt operability did not address all appropriate components for operability, for example, the battery chargers, inverters, and relays; (2) the failure modes and effects analysis did not consider all possible failure modes for the load tap changer; and (3) the 10 CFR 50.59 evaluation was incorrectly screened out when a full evaluation should have been performed. The inspectors reviewed the licensee's prompt operability to help in determining the significance of the event and determined that even though not all appropriate components were evaluated, the conclusions were still valid, that even at the high voltage of 520 volts; all equipment would still function as designed. As a result, even though it exceeded the technical specification surveillance procedure acceptance criteria, it still maintained functionality (nonconforming/degraded) per Part 9900 Technical Guidance, "Operability Determinations & Functionality Assessments for Resolution of Degraded or Nonconforming Conditions Adverse to Quality or Safety," dated April 16, 2008.

The root cause investigation determined that the design change package that installed the new Class 1E 4160 Vac ESF transformers with load tap changer capability on the train B buses in Units 1 and 2 in October 2009 and April 2010, respectively, was inadequate. The design change package adjusted the electrical settings on the Units 1 and 2 unit auxiliary transformers 13.8 kVac buses, and the Class 1E 4160 Vac ESF buses. The electrical design is such that adjustments on the 13.8 kVac buses can impact the 4160 Vac buses, which can impact the 480 Vac buses. The design change package implemented incorrect settings on the 13.8 kVac and 4160 Vac buses on both Units 1 and 2 because of incorrect modeling in the electrical voltage regulation study calculation EC 5000. Errors in the modeling included: (1) the voltage values allowed by the bandwidth of the load tap changers on the unit auxiliary transformers, and the Class 1E 4160 Vac ESF transformers; and (2) the initial input voltage for the 13.8 kVac and

4160 Vac buses was incorrect. Additionally, the root cause investigation determined that as an organization, licensee management failed to provide oversight of the outside vendor, during the development of the design change package, because the licensee did not have a method to identify, classify, control, and monitor highly complex modifications.

The licensee captured this event as Condition Report 11-10205, and implemented immediate compensatory measures of increased monitoring on the Class 1E 4160 and 480 Vac buses by implementing shiftly temporary logs, to ensure that Class 1E loads were within their technical specifications surveillance procedure acceptance criteria. The licensee also programmed a user defined control room alarm on the integrated computer system for all three trains of 4160 Vac bus voltage to alert the operators when the voltage was approaching the limit. These compensatory measures are to remain in place until the new design change package is implemented to restore electrical design margin. Unit 2 design change package was implemented in November 2011 and Unit 1 design change package is scheduled for October 2012. The licensee also implemented a management sponsored review team to oversee the new design change package, implement new training requirements for electrical engineers, revise existing electrical calculations to incorporate open amendments, and revise the design basis documents, UFSAR, and other design documents with the revised calculation results.

Analysis. The failure to perform an adequate design review to address the design requirements for the Class 1E 4160 Vac ESF transformers was a performance deficiency. The finding was more than minor because it was associated with the Mitigating Systems Cornerstone attribute of Design Control and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inadequate design change package resulted in the licensee declaring the Unit 2 Class 1E 4160 Vac E2B bus inoperable because it was outside of the technical specification surveillance procedure acceptance criteria for longer than allowed by technical specifications. The inspectors performed the significance determination using NRC Inspection Manual Chapter 0609, Attachment 0609.04, “Phase 1 – Initial Screening and Characterization of Findings,” dated January 10, 2008, because it affected the Mitigating Systems Cornerstone while the plant was at power. The finding was determined to be of very low safety significance (Green) because it was a design deficiency that did not result in a loss of operability or functionality per Part 9900 Technical Guidance, “Operability Determinations & Functionality Assessments for Resolution of Degraded or Nonconforming Conditions Adverse to Quality or Safety,” dated April 16, 2008. In addition, this finding had human performance cross-cutting aspects associated with work practices in that the licensee did not ensure supervisory and management oversight of work activities, including contractors, such that nuclear safety was supported [H.4(c)].

Enforcement. Title 10 CFR Part 50, Appendix B, Criteria III, “Design Control,” requires, in part, that measures shall be established to assure that applicable regulatory requirements and design basis are correctly translated into specifications, drawings, procedures, and instructions. Contrary to this, from October 2009 on Unit 1 and April 2010 on Unit 2, the licensee did not have an adequate design change package to assure that the design basis for the Class 1E 4160 Vac bus was correctly translated into specifications, drawings, procedures, and instructions. As a result, from May 8-15, 2011, Unit 2 Class 1E 4160 Vac bus E2B was declared inoperable because voltage was above

the technical specification surveillance procedure acceptance criteria. The licensee's immediate corrective actions included restoring the bus voltage to within acceptance criteria and establishing temporary logs for increased monitoring of the Class 1E 4160 Vac buses voltages. Since this violation was of very low safety significance and was documented in the licensee's corrective action program as Condition Report 11-10205, it is being treated as a non-cited violation consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 05000498/2011005-04 and 05000499/2011005-04, "Inadequate Design Change on Class 1E 4160 Vac ESF Transformers."

4OA3 Event Follow-up (71153)

.1 Invalid Automatic Actuation of an Emergency Diesel Generator and 60-Day Phone Call in Lieu of a Written Licensee Event Report

On August 27, 2011, during surveillance testing, an automatic actuation of the Unit 1 train A emergency diesel generator occurred due to a Mode II actuation signal from the load sequencer. The licensee determined that the Mode II actuation was an invalid actuation because of a failure in an integrated chip on a circuit card in the processor module. The licensee replaced the integrated chip and successfully performed the surveillance test to return the equipment to operable status on August 29, 2011. The licensee initially reported the event as a reportable event for a valid actuation, but has retracted that report since it was determined to be invalid. However, in accordance with 10 CFR 50.73(a)(2)(iv)(A) and 10 CFR 50.73(a)(1), the licensee made a 60-day telephone notification in lieu of a written licensee event report. The inspectors reviewed the apparent cause, condition reports, control room logs, interviewed personnel, and reviewed 10 CFR 50.73 to ensure that the licensee satisfied the reporting requirements.

.2 (Closed) Licensee Event Report 05000499/2011-001-00, "Exceeding ESF Bus Voltage Technical Specification Surveillance Acceptance Criteria"

The licensee submitted this event report in accordance with 10 CFR 50.73(a)(2)(i)(B), any operation or condition prohibited by the plant's technical specification. On May 14, 2011, Class 1E 4160 Vac Bus E2B on Unit 2 was declared inoperable due to the load center voltage being greater than the technical specification surveillance requirement procedure acceptance criteria. A review of the Unit 2 integrated computer system data established that the E2B voltage was higher than the acceptance criteria, and, therefore, inoperable for longer than allowed by technical specifications. Root causes of this event were determined to be inappropriate settings on Unit 2 unit auxiliary transformer, the unit auxiliary transformer load tap changer, and an inadequate E2B design change package for a new ESF transformer. The licensee has implemented interim corrective actions to maintain voltage within the acceptance criteria while a new design change package is implemented to correct the condition. The enforcement aspects of this event are described in Section 4OA2.4. This licensee event report is closed.

4OA6 Meetings

Exit Meeting Summary

The inspectors discussed the results of the licensed operator requalification program inspection with Mr. G. Powell, Vice President, Generation, and other members of the licensee's staff on September 15, 2011. The lead inspector obtained the final biennial examination results on December 15, 2011, and telephonically exited with Mr. T. Hurley, Operations Training Supervisor, on January 4, 2012. The licensee representatives acknowledged the findings presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On November 3, 2011, the inspectors presented the results of the radiation safety inspections to Mr. D. Rencurrel, Senior Vice President of Technical Support and Oversight, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On November 10, 2011, the inspectors presented the inspection results of the review of inservice inspection activities to Mr. G. Powell, Vice President, Generation, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On January 5, 2012, the inspectors presented the inspection results to Mr. E. Halpin, President and Chief Executive Officer, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

4OA7 Licensee-Identified Violations

The following violations of very low safety significance (Green) were identified by the licensee and are violations of NRC requirements which meet the criteria of Section 2.3.2 of the NRC Enforcement Policy for being dispositioned as non-cited violations.

- Title 10 CFR 50.55a(g)4 requires, in part, that ASME Code Class 1, 2, and 3 components be inspected throughout the service life of the reactor. Contrary to the above, until November 2011, the licensee failed to enter the reactor vessel supports, a Class 1 component, into the inservice inspection program and failed to perform required code inspections of accessible portions of reactor vessel supports. The licensee entered this issue into their corrective action program and performed the nondestructive examinations required by ASME Code. This finding is more than minor because if left uncorrected, it would become a more significant safety concern. The failure to enter required components into the inservice inspection program, and perform required inspections of safety-related components could have allowed undetected flaws to remain in-service. These undetected flaws could grow in size until failure of the component degraded system reliability, or if sufficient general corrosion occurred, a gross failure of the component could occur. The finding was of very low safety significance because the finding did not represent a loss of safety function and the nondestructive examination did not identify any relevant indications. This issue was entered into the licensee's corrective action program as Condition Report 11-22562.

- Title 10 CFR 50, Appendix B, Criterion XVI, requires, in part, that in the case of significant conditions adverse to quality, measures shall be established to assure the cause is determined and corrective actions are taken to preclude repetition. Contrary to the above, the licensee failed to establish corrective actions to preclude repetition for a significant condition adverse to quality. Specifically, the licensee failed to establish corrective measures to preclude repetition of motor operated valves failing due to pinion gear movement. In 2003, the licensee experienced a failure of a safety-related motor operated valve due to pinion gear movement. This issue was entered into the licensee's corrective action program as a significant condition adverse to quality in Condition Report 03-1341. The licensee's corrective actions included training, procedure revisions, and inspections. In October 2011, the licensee experienced another safety-related motor operated valve failure due to pinion gear movement, which was captured as Condition Report 11-19073, and was determined to be caused by narrowly focused and unnecessarily expedited inspections, and inadequate corrective actions from the 2003 event. This finding was of very low safety significance because it did not represent a loss of safety function.

SUPPLEMENTAL INFORMATION
KEY POINTS OF CONTACT

Licensee Personnel

R. Aguilera, Manager, Health Physics
M. Berg, Manager, Design Engineering
C. Bowman, General Manager, Nuclear Safety Assurance
J. Brodsky, Supervisor Simulator
J. Calvert, Manager, Training
R. Dunn Jr., Manager, Fuels and Analysis
R. Engen, Site Engineering Director
T. Frawley, Manager, Operations
K. Harris, Manager Compliance and Benefits
W. Harrison, Manager, Licensing
J. Hartley, Manager, Mechanical Maintenance
J. Heil, Engineering Programs
G. Hildebrandt, Manager, Plant Protection
T. Hurley, Supervisor Operations Training
G. Janak, Manager, Unit 1 Operations
B. Jenewein, Manager, Systems Engineering
J. Lovejoy, Manager, I&C Maintenance
G. MacDonald, Manager, Organizational Effectiveness
L. Matula, Supervisor Health Services and FFD
R. McNiel, Manager, Maintenance Engineering
J. Milliff, Manager, Unit 2 Operations
R. Neimann, Site ANII
J. Paul, Engineer, Licensing Consultant
L. Peter, Plant General Manager
J. Pierce, Manager, Operations Training
G. Powell, Vice President, Generation
D. Rencurrel, Senior Vice President, Technical Support and Oversight
M. Ruvalcaba, Manager, Testing and Programs
R. Savage, Engineer, Licensing Staff Specialist
M. Schaefer, Manager, Maintenance
T. Shelton, Director Human Resources
K. Silverthorne, Welding, Engineering Programs
L. Spiess, Lead, In-service Inspection
K. Taplett, Senior Engineer, Licensing Staff
M. Tomek, ALARA Supervisor, Health Physics
D. Towler, Manager, Quality
P. Walker, Engineer, Licensing
B. Whitmer, Senior Licensing Engineer
J. Williams, Engineering Programs
C. Younger, Engineering Programs
D. Zink, Supervising Engineering Specialist

NRC Personnel
J. Dixon, Senior Resident Inspector
B. Tharakan, Resident Inspector

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

05000499/2011005-01	URI	Seal Cap on Safety Injection System Hot Leg Check Valve (Section 1R08)

Opened and Closed

05000498/2011005-02	NCV	Failure to Follow Radiation Protection Procedural Requirements (Section 2RS01)
05000499/2011005-03	NCV	Failure to Follow Procedures and Maintain Doses ALARA (Section 2RS02)
05000498/2011005-04 05000499/2011005-04	NCV	Inadequate Design Change on Class 1E 4160 Vac ESF Transformers (Section 4OA2)

Closed

05000499/2011-001-00	LER	Exceeding ESF Bus Voltage Technical Specification Surveillance Acceptance Criteria (Section 4OA3)

LIST OF DOCUMENTS REVIEWED

Section 1R04: Equipment Alignment

CONDITION REPORTS

10-22994 11-223

DRAWINGS

NUMBER	TITLE	REVISION
5V119V10001#1	Piping and Instrumentation Diagram – HVAC Essential Chilled Water System	32
3V119V10003#1	Piping and Instrumentation Diagram – HVAC Essential Chilled Water System	18
5R169F20000#2	Residual Heat Removal System	27
5N129F05014#2	Safety Injection System	18
5N129F05016#2	Safety Injection System	18
5R209F05017#2	Piping and Instrumentation Diagram Component Cooling Water System	20
5R209F05020#2	Piping and Instrumentation Diagram Component Cooling Water System	16
5R209Z42064#2	CCW to Charging Pumps Supply and Return Valves Logic Diagram	4

PROCEDURES

NUMBER	TITLE	REVISION
0POP02-CH-0001	Essential Chilled Water System	40
0POP02-RH-0001	Residual Heat Removal System	53
0POP02-CC-0001	Component Cooling Water	40

Section 1R05: Fire Protection

FIRE PREPLANS

NUMBER	TITLE	REVISION
0DGB37-FP-0501	Fire Preplan for Diesel Generator Building, Train B	3
0DGB37-FP-0513	Fire Preplan Diesel Generator Building Air Intake/Exhaust, Train B	3
0DGB38-FP-0502	Fire Preplan for Diesel Generator Building, Train A	3
0DGB38-FP-0514	Fire Preplan Diesel Generator Building Diesel Air Intake/Exhaust, Train A	3
0DGB40-FP-0504	Fire Preplan Diesel Generator Building Diesel Fuel Oil Storage Tank, Train B	3

NUMBER	TITLE	REVISION
0DGB41-FP-0505	Fire Preplan Diesel Generator Building Fuel Oil Storage Tank, Train A	3
0DGB43-FP-0507	Fire Preplan Diesel Generator Building Stairwell, Train B	3
0DGB44-FP-0508	Fire Preplan Diesel Generator Building Stairwell, Train A	3
0DGB46-FP-0510	Fire Preplan Diesel Generator Building HVAC Fan Entry, Train B	3
0DGB47-FP-0511	Fire Preplan Diesel Generator Building HVAC Fan Entry, Train A	3

PROCEDURES

NUMBER	TITLE	REVISION
0PGP03-ZA-0514	Controlled System or Barrier Impairment	7
0PGP03-ZF-0018	Fire Protection System Functionality Requirements	16
0PGP03-ZF-0019	Control of Transient Fire Loads and Use of Combustible and Flammable Liquids and Gases	7

Section 1R06: Flood Protection Measures

CALCULATIONS

NUMBER	TITLE	REVISION
MC5044	Flooding Calculation for the DGB	2
NC9710	Facility Response Analysis for DGB Flooding and Spray Effects	2

CONDITION REPORTS

11-10908

DRAWINGS

NUMBER	TITLE	REVISION
3P11-0-C-6-5038	Concrete Class 1E Underground Duct Banks Plan and Sections Unit No. 1 & 2	7
9G069F20017#1	Piping and Instrumentation Diagram D.G.B. Sumps, Pumps, & Drains for Oily Waste System	8

Section 1R08: Inservice Inspection Activities

CONDITION REPORTS

97-2156	10-7396	11-22991
99-1108	10-7409	11-22994
06-15596	10-7410	11-23503
08-15735	10-7714	11-23693
08-15984	10-7735	11-23915
08-15989	10-8495	11-23959
08-15991	10-8496	11-24215
09-10010	10-8498	11-24637
09-10209	10-10120	11-24638
09-14327	11-17459	11-24641
09-16115	11-21297	11-24872
10-3125	11-22562	

MISCELLANEOUS

NUMBER	TITLE	REVISION/DATE
	2011 Mid-Cycle Self Assessment AFI/PD Work Sheet	May 20, 2011
DCP-97-2156-2	Check Valve 1N122XSI0010A Bonnet Enclosure	February 11, 1997
WCAP-15988-NP	Generic Guidance for an Effective Boric Acid Inspection Program for Pressurized Water Reactors	1
VTD-W120-0652	Westinghouse Motor Operated Gate Valves, Manually Operated Gate Valves, Swing Check Valves Instruction Book	3
5N129F05013	Piping and Instrumentation Diagram Safety Injection System	28
	2011 Boric Acid Corrosion Control Program Benchmarking Report	

PROCEDURES

NUMBER	TITLE	REVISION

NUMBER	TITLE	REVISION
0PEP10-ZA-0004	Ultrasonic Examination	6
0PEP10-ZA-0010	Liquid Penetrant Examination	5
0PEP10-ZA-0017	Magnetic Particle Examination	5
0PEP10-ZA-0023	Visual Examination VT-2	6
0PEP10-ZA-0030	Visual Examination VT-3	2
0PEP01-ZA-0305	Testing/Programs Engineering Program Requirements	0
0PGP03-ZE-0033	RCS Pressure Boundary Inspection for Boric Acid Leaks	12
0PGP03-ZE-0133	Boric Acid Corrosion Control Program	3
0PGP03-ZA-0133	Fluid Leak Management Program	3
0PGP03-ZE-027	ASME Section XI Repair, Replacement, and Post-Maintenance Testing	11
0PGP03-ZM-0006	Control of System Cleanness During Maintenance	8
0PGP03-ZE-0023	System Pressure Testing Program	21
0PGP03-ZE-0028	Contaminated System Leakage Test Program	8
0PGP04-ZA-0002	Condition Report Engineering Evaluation	14
0PSP15-RC-0001	Reactor Coolant System Leakage Pressure Test	17
0PGP03-ZX-0002	Corrective Action Process	16
UTI-PDI-Pipe-MPA-1	Ultrasonic Technical Instruction Phased Array Phased Array Ultrasonic Procedure For Welds Phased Array Ultrasonic Procedure For Welds	0
UTI-PA-007	Ultrasonic Technical Instruction Phased Array Foreign Material Detection Located Inside Water Filled Piping Components Utilizing Manual Ultrasonic Phased Array	0
UTI-PA-010	Ultrasonic Technical Instruction Phased Array Manual Phased Array Ultrasonic Procedure For Determination Of Liquid Levels In Components	0

WORK ORDERS

519859

Section 1R11: Licensed Operator Requalification Program

CONDITION REPORTS

10-8841	10-18378	11-3667
10-11730	11-1354	11-12213

MISCELLANEOUS

NUMBER	TITLE	DATE
Written Exams	2011 Exam-Weeks 1-6 Biennial Exams (RO and SRO)	October 2011
JPM's	2011 Exam -Weeks 1-6	September 2011
Scenarios	2011 Exam -Weeks 1-6	September 2011
LOCT Matrix	2 year Sample Plan	August 2011
STP LER's	All 14 LER's from 2009-2011 for both Units	various
Simulator Test	Steady State 100% Power	January 2010
Simulator Test	STP Simulator Core Reload Acceptance Test	August 2011
Simulator Test	Transient Test Manual Reactor Trip (TT1)	February 2011
Simulator Test	Slow Primary Depressurization (TT10)	April 2011
LOR105-Exam 8	Scenario-Based Test Package	March 2011
CSN-D5603-04	Curriculum Review Committee Meeting Minutes	2010-2011
	Simulator Review Committee Meeting Minutes	2010-2011
	STP Recommendations to SOER 10-02	September 2011

PROCEDURES

NUMBER	TITLE	REVISION
0PGP03-HU-0001	Human Performance (HU) Program	01
0POP05-EO-EO00	Reactor Trip or Safety Injection	21
0POP09-AN-04M8	Annunciator Lampbox 4M08 Response Instructions	35
LOR-GL-0001	LOR Training Program Guidelines	16
LOR-GL-0006	LOR Conduct of Simulator Training Guidelines	21
LOR-GL-0002	LOR Annual and Biennial Evaluation Guidelines	14
0PNT01-ZA-0037	Simulator Configuration Control	4
0PGP03-ZA-0128	Medical Examinations	8
0POP01-ZA-0014	Licensed Operator License Maintenance	24
0PGP03-ZA-0122	Development of Training Programs	10
0PGP03-ZT-0132	Licensed Operator Requalification	8

Section 1R12: Maintenance Effectiveness

CONDITION REPORTS

09-2634	10-11259	11-9369
09-14327	10-17138	11-15520
10-5331	10-22529	11-15707
10-8717	11-4065	11-24394

MISCELLANEOUS

NUMBER	TITLE	REVISION/DATE
	System Health Report Chemical Volume Control System (CV) Quarterly Report	2nd Quarter 2010 through 3rd Quarter 2011
	System Health Report Reactor Coolant (RC) Quarterly Report	4th Quarter 2009 through 3rd Quarter 2011
	Maintenance Rule System Scoping Basis Report	September 8, 2010
SEG-0009	Maintenance Rule Basis Document Guideline	0
5A050GARC01	South Texas Project Risk Significance Basis Document Reactor Coolant System	4

PROCEDURES

NUMBER	TITLE	REVISION
0PGP04-ZE-0313	Maintenance Rule Program	6

Section 1R13: Maintenance Risk Assessment and Emergent Work Controls

CONDITION REPORTS

11-9174

MISCELLANEOUS

TITLE	DATE
STP – RICTCal / RAsCal Calculations for Unit 2	October 3-25, 2011
2RE15 Shutdown Risk Assessment Report	October 18, 2011

PROCEDURES

NUMBER	TITLE	REVISION
0POP01-ZO-0006	Risk Management Actions	18

Section 1R15: Operability Evaluations

CONDITION REPORTS

99-2042	11-30170	11-30396
11-28754	11-30320	11-31977
11-30168		

MISCELLANEOUS

NUMBER	TITLE	REVISION
5H01HMS1062	General Installation Mechanical Standards	2

PROCEDURES

NUMBER	TITLE	REVISION
0PGP04-ZA-0002	Condition Report Engineering Evaluation (CREE)	15

WORK AUTHORIZATION NUMBERS

436243

Section 1R19: Postmaintenance Testing

CONDITION REPORTS

04-11502	11-13155	11-21307
11-6718	11-14081	11-26618
11-10205	11-19073	

PROCEDURES

NUMBER	TITLE	REVISION
0PMP05-ZE-0306	Limitorque Operator Maintenance Type SMB/SB-0 Actuator	12
0PMP07-SF-0001A	Train A ESF Diesel Sequencer Remote Timing Test	1
0PSP03-CC-0007	Component Cooling Water System Train1A(2A) Valve Operability Test	18
0PSP03-SP-0010A	Train A ESF Load Sequencer Manual Local Test	22
0PSP05-NI-0046A	Extended Range NI Full Power Alignment and Calibration (N-0046)	15
0PSP05-NI-0046	Extended Range Neutron Flux Channel IV Calibration (N-0046)	12

WORK AUTHORIZATION NUMBERS

409394	428402	432054
421816	429199	432056
427898	430798	432131

Section 1R20: Refueling and Other Outage Activities

CONDITION REPORTS

11-22277	11-27170	11-27390
11-22562	11-27176	11-27404
11-23996	11-27355	11-28029
11-24043	11-27377	11-28279
11-24463		

MISCELLANEOUS

NUMBER	TITLE	REVISION/DATE
PRA 11-026	TS 4.0.3 Risk Assessment – Missed Surveillance – Reactor Vessel Supports Inservice Inspection	0
	PCI Report on Reactor Vessel O-Ring Seating Surface Scratches – as Found	November 14, 2011
	PCI Report on Reactor Vessel O-Ring Seating Surface Scratches – as Left	November 14, 2011

PROCEDURES

NUMBER	TITLE	REVISION
0PEP02-ZX-0012	Subcritical Physics Testing	1, 2
0POP03-ZG-0001	Plant Heatup	55
0POP03-ZG-0004	Reactor Startup	37, 38
0POP03-ZG-0005	Plant Startup to 100 %	70, 71
0POP03-ZG-0006	Plant Shutdown From 100% to Hot Standby	47
0POP03-ZG-0007	Plant Cooldown	64

Section 1R22: Surveillance Testing

CONDITION REPORTS

11-19073	11-24196	11-26420
11-21536	11-26259	11-27705
11-22282		

PROCEDURES

NUMBER	TITLE	REVISION
0PSP06-DJ-0007	125 Volt Class 1E Battery Modified Performance Surveillance Test	7

NUMBER	TITLE	REVISION
0PSP06-DJ-0002	125 Volt Class 1E Battery Quarterly Surveillance Test	22
0PGP03-ZA-0114	Fatigue Rule Program	2
0PGP03-ZO-0046	RCS Leakage Monitoring	7
0PMP05-ZE-0408	Limitorque Operator Maintenance Type SMB/SB-2 Actuator	14
0POP04-RC-0003	Excessive RCS Leakage	16
0PSP03-AF-0010	Auxiliary Feedwater System Valve Operability Test	26
0PSP03-RC-0006	Reactor Coolant Inventory	22
0PSP11-HC-0003	LLRT M-43 Supplementary Containment Purge Supply	15
0PSP11-HC-0001	LLRT M-41 Normal Containment Purge Exhaust	15
0PSP11-ZA-0005	Local Leakage Rate Test Calculations, Guidelines, and Program	20
0PMP-05-ZE-0422	MOV Diagnostic Testing-Quarter Turn Valves (VIPER 20)	9
0PMP04-ZG-0093	Fisher Butterfly 12 and 48 in. Valve Maintenance	5
0PSP03-RH-0013	Residual Heat Removal Pump 1B(2B) Comprehensive Test Reference Values and Preservice Testing Pump Curve Measurement	4
0POP02-RH-0001	Residual Heat Removal System Operation	54

WORK AUTHORIZATION NUMBERS

365838	402732	423176
365839	406390	431944
402233		

Section 2RS01: Radiological Hazard Assessment and Exposure Controls

AUDITS, SELF-ASSESSMENTS, AND SURVEILLANCES

NUMBER	TITLE	DATE
MN-11-1-76058	Quality Monitoring Report	April 26, 2011
MN-11-1-76111	Quality Monitoring Report	April 21, 2011
MN-11-1-76356	Quality Monitoring Report	April 29, 2011
MN-11-1-76543	Quality Monitoring Report	April 30, 2011
MN-11-1-77268	Quality Monitoring Report	May 26, 2011
10-02 (RC)	Radiological Controls Audit Report	March 11, 2010

CONDITION REPORTS

11-06864	11-08459	11-16215
11-07217	11-08470	11-22630
11-07935	11-08745	11-23296
11-07943	11-09810	11-23316

MISCELLANEOUS

TITLE	DATE
Self-Assessment in Health Physics on Tool Control in the Radiologically Controlled Area	July 14, 2011

PROCEDURES

NUMBER	TITLE	REVISION
0PGP03-ZR-0002	Radioactive Waste Shipments	21
0PGP03-ZR-0050	Radiation Protection Program	10
0PGP03-ZR-0052	ALARA Program	13
0PRP07-ZR-0010	Radiation Work Permits/Radiological Work ALARA Reviews	30
0PRP07-ZR-0019	Underwater Movement in the Spent Fuel Pool or Reactor Cavity	2

RADIATION WORK PACKAGES

NUMBER	TITLE
10-4208-1	2RE14 Reactor Vessel Head Replacement
10-4208-2	2RE14 Non-Rapid Refuel
11-0164-0	RP Survey and Decon in the FHB Fuel Transfer Canal
11-0221-0	2RE15 Perform Maintenance & Inspections FHB Fuel Transfer Canal
11-4035-6	1RE16 Repair and/or Replace CV-MOV-0468 Close Out
11-1968-3	2RE15 Work Activities in room 001 and 003

RADIOLOGICAL SURVEYS

NUMBER	TITLE	DATE
68985	Reactor Head Overview Pre- and Post-Shielding	October 31, 2011
56958	Reactor Head – Unit #2	November 1, 2011

Section 2RS02: Occupational ALARA Planning and Controls

ALARA REVIEW PACKAGES

NUMBER	TITLE
10-4208-1	2RE14 Reactor Vessel Head Replacement
10-4208-2	2RE14 Non-Rapid Refuel
11-4035-6	1RE16 Repair and/or Replace CV-MOV-0468 Close Out
11-1968-3	2RE15 Work Activities in room 001 and 003

AUDITS, SELF-ASSESSMENTS, AND SURVEILLANCES

NUMBER	TITLE	DATE
MN-11-1-76058	Quality Monitoring Report	April 26, 2011
MN-11-1-76111	Quality Monitoring Report	April 21, 2011
MN-11-1-76356	Quality Monitoring Report	April 29, 2011
MN-11-1-76543	Quality Monitoring Report	April 30, 2011
MN-11-1-77268	Quality Monitoring Report	May 26, 2011

CONDITION REPORTS

10-10652	11-07077	11-08459
11-06178	11-07216	11-09810
11-06741	11-07553	11-10935
11-06861	11-07771	11-13876

MISCELLANEOUS

NUMBER	TITLE	DATE
	2RE14 Refueling Outage ALARA Report	December 2, 2010
	2RE16 ALARA Review Committee Notes	September 27, 2011
	1RE16 Refueling Outage ALARA Report	October 18, 2011
	2011 – 2015 ALARA Five Year Plan	October 18, 2010
	2010 STP Annual ALARA Report	September 30, 2011
2011-2-015	Temporary Shielding Request (for Reactor Head Shroud Doors)	October 30, 2011
2011-2-029	Temporary Shielding Request (for Reactor Head Atomic Blanket)	October 31, 2011
	Radiation Safety NRC Performance Indicators	February 14, 2006

PROCEDURES

NUMBER	TITLE	REVISION
0PGP03-ZR-0050	Radiation Protection Program	10

NUMBER	TITLE	REVISION
0PGP03-ZR-0052	ALARA Program	13
0PRP07-ZR-0001	ALARA Engineering and Procedure Review	3
0PRP07-ZR-0004	Shielding	18
0PRP07-ZR-0010	Radiation Work Permits/Radiological Work ALARA Reviews	30
STI 32773897	ALARA Planning	4

RADIOLOGICAL SURVEYS

NUMBER	TITLE	DATE
56898	Reactor Head Overview Pre- and Post-Shielding	October 31, 2011
56958	Reactor Head – Unit #2	November 1, 2011

Section 4OA1: Performance Indicator Verification

CONDITION REPORTS

08-15609	11-2787	11-13413
10-22453	11-3194	11-14081
10-23446	11-3411	11-19541
10-23832	11-11588	11-31266
11-542	11-12704	

PROCEDURES

NUMBER	TITLE	REVISION
	South Texas Project Units 1 & 2 Mitigating System Performance Index [MSPI] Bases Document	10
SEG-0007	Mitigating System Performance Indicator Collection and Processing of Data	1
0PGP03-ZR-0044	NRC Performance Indicators	10
0PGP03-ZR-0048	Performance Indicator Program	13

Section 4OA2: Identification and Resolution of Problems

CALCULATIONS

NUMBER	TITLE	REVISION
EC 5000	Voltage Regulation Study	13
EC 6068	Load Tap Changer (LTC) Control Relay Setting Calculations	3, 4

CONDITION REPORTS

04-11502	11-10205	11-16079
10-13722	11-10521	11-16670
10-18480	11-11282	11-19634
10-25564	11-11588	11-20342
11-6718	11-12322	11-21307
11-8545	11-12538	11-26618
11-8790	11-12769	11-29045
11-9502	11-13155	11-30885
11-9861	11-13949	
11-9925	11-15093	

DRAWINGS

NUMBER	TITLE	REVISION

00000E0AAAA SHEET 1	Single Line Diagram Main One Line Diagram Unit NO. 1 & 2	22
00009E0PC16#2 SHEET1	Elementary Diagram 13.8 kV Auxiliary and Standby Bus 2G Relaying and Metering	14
00009E0PCAB#2 SHEET 1	Single Line Diagram 13.8 kV Switchgear 2G (TGB)	16
F-2112-8-2736	Federal Pacific Unit Auxiliary Transformer OLTC Nameplate	6
NPC377639	McGraw-Edison Power Systems Division Connection Diagram Nameplate (for MT001B)	B
GBM2189-10	Westinghouse Electric Corporation Transformer – Instruction Nameplate (for MT001A)	C

PROCEDURES

NUMBER	TITLE	REVISION
0POP02-AE-0002	Transformer Normal Breaker and Switch Lineup	32, 33
0PSP03-ZQ-0028	Operator Logs	115

VENDOR MANUALS

NUMBER	TITLE	REVISION
1ZSE 5492-104	ABB On-Load Tap Changers, Type UZ	5
1ZSE 5492-115	ABB On-Load Tap Changers, Type UZE and UZF with Motor Drive Mechanism, Type 3	5
800-2001V-IB-03	Beckwith Electric M-2001C (Comprehensive) Tapchanger Control Instruction Book	0
800-0329B-IB-01MC2	Beckwith Electric M-0392B LTC Backup Control Instruction Book	0
40-0098-09	Kelman Taptrans Transformer and Tapchanger Oil Dissolved Gas and Moisture Monitor Users Guide	0
40-0096-09	Kelman Taptrans Transformer and Tapchanger Oil Dissolved Gas and Moisture Pre-Installation Guide	0

WORK AUTHORIZATION NUMBERS

414170	427898	432131
423051		

Section 4OA3: Event Follow-Up

CONDITION REPORTS

04-11502	11-14081	11-14346
11-10205	11-14082	

PROCEDURES

NUMBER	TITLE	REVISION
0PSP03-SP-0010A	Train A ESF Load Sequencer Manual Local Test	21, 22

Section 4OA7: Licensee-Identified Violations

CONDITION REPORTS

03-1341	11-19073

MISCELLANEOUS

NUMBER	TITLE	REVISION
0PMP05-ZE-0407	Limitorque Operator Maintenance Type SMB/SB-1 Actuator	13
0PMP05-ZE-0408	Limitorque Operator Maintenance Type SMB/SB-2 Actuator	12, 13
PRA-11-024	Probabilistic Risk Assessment to Document Sensitivity Study for Increased Failure Probability of Motor Operated Valves (MOVs) Following the Failure of Auxiliary Feedwater (AFW) valve C1AFMOV0085	0
VTD-L200-0019	Limitorque Maintenance Update 89-1 Maximum Torque Switch Settings	0

WORK ORDERS

391244

REQUEST FOR INFORMATION - OCCUPATIOINAL RADIATION SAFETY INSPECTION

The items listed below are requested for the support of the Occupational Radiation Safety inspection to be conducted by Louis Carson (817) 860-8221 and Natasha Greene (817) 200-1154 during the week of October 03, 2011. The primary focus for the inspection will be Inspection Procedures (IP) 71124.01 and 71124.02. The inspector will also review information relative to Inspection Procedure 71151.

The information requested for an in-office review may be provided in either electronic or paper media or a combination of these. Information provided in electronic media may be in the form of IMS-CERTREC, e-mail attachments or CD. The agency's text editing software is MS Word; however, we have document viewing capability for Adobe Acrobat (.pdf) text files. Information requested to be reviewed on-site during the inspection week should be paper media.

1. Radiological Hazard Assessment and Exposure Controls (71124.01) and Performance Indicator Verification (71151) to be reviewed by Louis Carson:

A. Telephone numbers of contacts

B. Organization chart of the radiation protection organization

C. Copies of any Quality Assurance (including corporate, if applicable) audits, appraisals, and field observations and Radiation Protection self-assessments related to Access Control to Radiologically Significant Area, radioactive material control performed since April 16, 2011 (Do not include INPO assessments.)

(Submit the requested items under Section C by October 14, 2011 for an in-office review.)

D. An index of RP procedures and Administrative procedures

E. The following specific procedures:

- RP Program Description
- Posting of Radiological Areas
- High Radiation Area controls
- RCA Access Controls and radworker instructions
- Survey requirements
- Identifying and Documenting Performance Indicator Occurrences
- Radiation work permit preparation
- Radiation work permit compliance (by workers)
- Release of material from the radiological controlled area
- Radioactive Source Inventory and control

F. A summary of corrective action documents (including corporate and subtiered systems) identified by or assigned to the radiation protection group since April 16, 2010. The lists should indicate the significance level of each issue and the search criteria used.

(Submit the requested items under Section F by October 14, 2011 for an in-office review.)

At the entrance meeting on October 31, 2011, provide lists of any additional corrective action documents written after the original summaries were submitted.

G. Schedule of work activities to be conducted during the inspection week

H. List of active radiation work permits and outage jobs with a potential collective dose of 1 person-rem or more

I. Radioactive Source Inventory

J. Performance Indicator Verification

2. Occupational ALARA Planning and Controls (71124.02) to be reviewed by Natasha Greene:

A. Telephone numbers of contacts

B. Organization chart of the radiation protection organization

C. Copies of any Quality Assurance (including corporate, if applicable) audits, appraisals, and field observations and Radiation Protection self-assessments related ALARA, since April 16, 2010 (Do not include INPO assessments.)

(Submit the requested items under Section C by October 14, 2011 for an in-office review.)

D. An index of RP procedures and Administrative procedures

E. The following specific procedures:

- ALARA program implementation
- ALARA committee activities
- ALARA planning, briefing, and reviews

F. A summary of corrective action documents (including corporate and subtiered systems) identified by or assigned to the radiation protection group since April 16, 2010, related to the ALARA program including:

- Radiation Work Permit violations
- Electronic Dosimeter Alarms
- RWP Dose Estimates

The lists should indicate the significance level of each issue and the search criteria used.

(Submit the requested items under Section F by October 14, 2011 for an in-office review.)

At the entrance meeting on October 03, 2011, provide lists of any additional corrective action documents written after the original summaries were submitted.

G. Schedule of work activities to be conducted during the inspection week

H. Site dose totals and 3 year averages for the last 3 years (based on dose of record)

I. Most recent outage report (submit by September 16, 2011 for in-office review)

J. Dose estimates and/or outage goals for current outage (effective 2011) and provide a list of outage jobs with a potential collective dose of 5 person-rem or more.

K. Outline of source term reduction strategy (i.e., 5-Year ALARA Plan)