



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

February 5, 2013

Mr. Dennis Koehl  
Chief Executive Officer and Chief Nuclear Officer  
STP Nuclear Operating Company  
P.O. Box 289  
Wadsworth, TX 77483

Subject: SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION - NRC INTEGRATED  
INSPECTION REPORT 05000498/2012005 AND 05000499/2012005

Dear Mr. Koehl:

On December 31, 2012, 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 3, 2013, with Mr. D. Rencurrel, Senior Vice President, 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.

Three NRC-identified 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, a licensee-identified violation which was determined to be of very low safety significance is 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 United States 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 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

D. Koehl

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Sincerely,

**/RA/**

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

Docket Nos.: 05000498, 05000499  
License Nos.: NPF-76, NPF-80

Enclosure: Inspection Report 05000498/2012005 and 05000499/2012005  
w/Attachment 1: Supplemental Information  
w/Attachment 2: Document Request for Occupational Radiation Safety Inspection  
w/Attachment 3: Inservice Inspection Document Request

cc w/ encl: Electronic Distribution

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**U.S. NUCLEAR REGULATORY COMMISSION**

**REGION IV**

Docket: 05000498, 05000499

License: NPF-76, NPF-80

Report: 05000498/2012005 and 05000499/2012005

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: September 29 through December 31, 2012

Inspectors: R. Azua, Senior Project Engineer  
L. Carson, II, Senior Health Physicist  
K. Clayton, Senior Operations Engineer  
J. Dixon, Senior Resident Inspector  
J. Drake, Senior Reactor Inspector  
G. Guerra, CHP, Emergency Preparedness Inspector  
W. Sifre, Senior Reactor Inspector  
B. Tharakan, CHP, Resident Inspector

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

## SUMMARY OF FINDINGS

IR 05000498/2012005, 05000499/2012005; 09/29/2012 – 12/31/2012; South Texas Project Electric Generating Station, Units 1 and 2, Integrated Resident and Regional Report; Inservice Inspection and Problem Identification and Resolution.

The report covered a 3-month period of inspection by resident inspectors and announced baseline inspections by region-based inspectors. Three Green non-cited violations of 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: Initiating Events

- Green. Inspectors identified a non-cited violation of 10CFR50.55a(g)(4) involving the licensee's failure to perform a system pressure test of the reactor vessel flange leak-off line of Units 1 and 2, in accordance with the applicable edition of Section XI of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code. Contrary to the above, prior to November 1, 2012, the licensee failed to perform the required pressure test of the reactor vessel flange seal leak-off line for both units. Specifically, the licensee failed to implement the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section XI, Class 2 requirements for pressure retaining components as provided by Article IWC 5220, "System Leakage Test." The licensee entered the finding into their corrective action program as Condition Report 12-28600.

The inspectors determined that the licensee's failure to perform a pressure test of the reactor vessel flange leak-off line was a performance deficiency. This finding was more than minor because it affected the Initiating Events Cornerstone attribute of Equipment Reliability and affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions. Using Manual Chapter 0609, Attachment A, "The Significant Determination Process (SDP) for Findings At-Power," the finding was determined to be of very low safety significance (Green) because the finding did not result in exceeding the reactor coolant system leak rate for a small loss-of-coolant accident, and did not affect other systems used to mitigate a loss-of-coolant accident resulting in a total loss of their function. This issue did not have a cross-cutting aspect associated with it because it is not indicative of current performance (Section 1R08).

- Green. Inspectors identified a non-cited violation of very low safety significance of Technical Specification 6.8.1.a and Regulatory Guide 1.33, for the failure to follow procedures that ensured abrasive tools for use on stainless steel systems were not contaminated with carbon steel. Specifically, the inspectors determined that the licensee was not maintaining tools as required by Procedure 0PGP03-ZG-0001, "Control of Materials and Products By User Groups," Revision 30, and Procedure 0PNP01-ZP-0032, "Tools and Measuring & Test Equipment Control," Revision 6, because inspectors observed multiple instances of tools coded for use on stainless steel or aluminum bronze stored with tools marked for use on carbon steel, rust deposits on tools marked for use on stainless steel, and rust deposits on stainless steel components in the plant. This indicated that carbon steel contaminated tools may have been used on these systems. The licensee took corrective actions to segregate the coded tools and trained tool room attendants to properly store and mark abrasive tools designated for use on stainless steel, and evaluated the systems with indications of rust deposits. This issue was entered into the licensee's corrective action program as Condition Report 12-28689.

Inspectors determined the failure to assure that abrasive tools designated for exclusive use on stainless steel were stored separately from tools used on other materials was a performance deficiency. This finding was more than minor because it affected the Initiating Events Cornerstone attribute of Equipment Reliability and affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions. Using Manual Chapter 0609, Attachment A, "The Significant Determination Process (SDP) for Findings At-Power," the finding was determined to be of very low safety significance (Green) because the finding did not result in exceeding the reactor coolant system leak rate for a small loss-of-coolant accident, and did not affect other systems used to mitigate a loss-of-coolant accident resulting in a total loss of their function. This finding had a cross-cutting aspect in the area of human performance work practices in that the licensee failed to effectively communicate expectations regarding procedural compliance, and personnel did not follow procedures. Specifically, the inspectors observed that although there were requirements to segregate tools, tools were not consistently segregated when returned to the storage locations as required by procedures [H.4(b)] (Section 1R08).

- Green. The inspectors identified a non-cited violation of Technical Specification 6.8.1.d, "Fire Protection Program Implementation," for the failure to follow work order package instructions requiring the use of Drawing C012-00081-F7F, "Detail "E-1" Silicone Elastomer Typical Electrical Pen. Seals (Walls & Floors)," to establish 6 inches of fire retardant sealant material for penetrations in Units 1 and 2. The inspectors noticed that Unit 1 train B safety-related 4160 Vac switchgear room electrical penetration F4476 had gaps around the edge. A design change installed new electrical cables that required the penetration be sealed using work order package 139376, that stated "the penetration seal WILL BE IAW the Penetration Seal Permit and detail

Drawing C012-00081-F7F.” During the repair activities to correct the gaps, it was discovered that a portion of the seal was only 4.5 inches. The licensee captured this issue as Condition Report 12-28283. Corrective actions included restoring the seal to 6 inches, performing additional analysis to support a 3-hour fire barrier with just 5 inches, and performing extent of condition inspections.

The finding was more than minor because it was associated with the Initiating Events Cornerstone attributes of Design Control and Procedure Quality, and affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions because it resulted in multiple fire penetration seals being declared nonfunctional as a result of being less than the design thickness. The inspectors used Manual Chapter 0609, Attachment 0609.04, to determine that fire protection issues are processed through Appendix F, “Fire Protection Significance Determination Process,” dated February 28, 2005. The inspectors used Appendix F, Attachment 1, to determine that the finding was of very low safety significance because it was a Moderate A fire confinement issue that screened out using Task 1.3.2 questions, since the seals would still have provided a 2-hour fire endurance rating or a 20 minute fire endurance rating without the seal being subject to direct flame impingement. In addition, this finding had human performance cross-cutting aspects associated with work practices because the licensee did not communicate human error prevention techniques such as self and peer checking, commensurate with the risk, such that the work activity was performed safely [H.4(a)] (Section 4OA2).

**B. Licensee-Identified Violations**

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

## REPORT DETAILS

### Summary of Plant Status

Unit 1 began the inspection period at 100 percent rated thermal power and remained there until October 10, 2012, when the unit entered coastdown operations in preparation for Refueling Outage 1RE17. Unit 1 commenced Refueling Outage 1RE17 on October 20, 2012. On November 24, 2012, Unit 1 reached normal operating temperature and pressure in preparation for reactor startup, which was achieved on November 26, 2012. The main generator output breaker was closed on November 27, 2012; with 100 percent rated thermal power achieved on November 30, 2012, and essentially remained there for the duration of the inspection period.

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

### 1. REACTOR SAFETY

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

#### 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, 2012, Unit 1, residual heat removal system train B
- December 3, 2012, Unit 1, auxiliary feedwater system train C
- December 4, 2012, Unit 2, component cooling water system train A
- December 20, 2012, Unit 1, safety injection system train C

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 four 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 October 30, 2012, the inspectors performed a complete system alignment inspection of the Unit 1 residual heat removal system train C to verify the functional capability of the system. The inspectors selected this system because it was considered both safety significant and risk significant in the licensee's probabilistic risk assessment. The inspectors 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:

- October 23, 2012, Unit 1, electrical auxiliary building engineered safety features switchgear room train B, Fire Zone Z042

- October 24, 2012, Unit 1, electrical auxiliary building engineered safety features switchgear room train C, Fire Zone Z052
- October 24, 2012, Unit 1, fuel handling building, Fire Zone 303
- October 27, 2012, Unit 1, mechanical auxiliary building, Fire Zone 147

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

See Section 4OA2 for a non-cited violation associated with the train B switchgear room fire penetration seal.

**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 areas listed below to verify the adequacy of equipment seals located below the flood line, floor and wall penetration seals, watertight door seals, common drain lines and sumps, sump pumps, level alarms, and control circuits, and temporary or removable flood barriers. Specific documents reviewed during this inspection are listed in the attachment.

- December 5, 2012, Unit 1, isolation valve cubicle

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.

**1R07 Heat Sink Performance (71111.07)**

a. Inspection Scope

The inspectors reviewed licensee programs, verified performance against industry standards, and reviewed critical operating parameters and maintenance records for the Unit 1 component cooling water essential cooling water heat exchangers. The inspectors verified that performance tests were satisfactorily conducted for heat exchangers/heat sinks and reviewed for problems or errors; the licensee utilized the periodic maintenance method outlined in EPRI Report NP 7552, "Heat Exchanger Performance Monitoring Guidelines"; the licensee properly utilized biofouling controls; the licensee's heat exchanger inspections adequately assessed the state of cleanliness of their tubes; and the heat exchanger was correctly categorized under 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one heat sink inspection sample as defined in Inspection Procedure 71111.07-05.

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 five nondestructive examination activities and reviewed ten 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:

<u>SYSTEM</u>	<u>WELD/COMPONENT IDENTIFICATION</u>	<u>EXAMINATION TYPE</u>
Component Cooling Water	1-CC 1109-RH02/20-CC-1109-WA3-H	Visual Examination - VT-2
Reactor Coolant System	12-RC-1125-BB1-FW5	Ultrasonic Testing
Main Steam System	30-MS-1001-25B	Ultrasonic Testing
Chemical and Volume Control System	1-CV-1210-BB2 HFW-0403	Penetrant Testing
Main Steam System	30-MS-1003-GA2 26PL1-26PL8 Pipe Lugs	Magnetic Particle Testing - Dry Powder

The inspectors reviewed records for the following nondestructive examinations:

<u>SYSTEM</u>	<u>WELD/COMPONENT IDENTIFICATION</u>	<u>EXAMINATION TYPE</u>
Component Cooling Water	1-CC 1109-RH02/20-CC-1109-WA3-H	Visual Examination - VT-2
Reactor Vessel	Bottom Mounted Instrumentation 8, and 10 through 58	Remote Visual Examination
Reactor Vessel	Bottom Mounted Instrumentation 9	Visual Examination
Reactor Vessel	Bottom Mounted Instrumentation 9	Remote Visual Examination
Pressurizer System	2R141TRC0078 FW8409 and FW8410	Penetrant Testing
Main Steam System	2S131XFW0604	Penetrant Testing
Chemical and Volume Control System	1-CV-1210-BB2 HFW-0403	Penetrant Testing

<u>SYSTEM</u>	<u>WELD/COMPONENT IDENTIFICATION</u>	<u>EXAMINATION TYPE</u>
Main Steam System	30-MS-1001-GA2-25B	Ultrasonic Testing
Reactor Coolant System	12-RC-1125-BB1-FW5	Ultrasonic Testing
Main Steam System	30-MS-1003-GA2 26PL1-26PL8 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 compared any indications identified during previous examinations and verified that licensee personnel evaluated the indications in accordance with the ASME Code and approved procedures. The inspectors also verified the qualifications of all nondestructive examination technicians performing the inspections were current.

The inspectors observed one weld on a high point vent for the 1B centrifugal charging pump discharge line in the chemical and volume control system.

The inspectors reviewed records for the following welding activities:

<u>SYSTEM</u>	<u>WELD IDENTIFICATION</u>	<u>WELD TYPE</u>
Chemical and Volume Control System	1-CV-1210-BB2 HFW-0403	Gas Tungsten 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

Introduction. Inspectors identified a Green non-cited violation of 10CFR50.55a(g)(4) involving the licensee's failure to perform a system pressure test of the reactor vessel flange leak-off line of Units 1 and 2, in accordance with the applicable edition of Section XI of the ASME Code.

Description. During a review of the licensee's inservice inspection program, the inspectors noted that the reactor vessel flange seal leak-off line for each of the units was classified as an ASME Class 2 component. The inspectors identified, through further review and discussion, that the licensee had not performed the required system leakage test of each of the seal leak-off lines as described by the applicable sections of the 2004 Edition of the ASME Code. Specifically, the licensee implemented a methodology that looked for leakage and credited a walkdown of the accessible piping sections of each line during Mode 3 conditions without the line being pressurized. Article IWC-5000, "System Pressure Tests," of Section XI of the ASME Code requires that all pressure retaining components be pressure tested via a system leakage test per IWC-5220, "System Leakage Test." The licensee implemented a visual examination of the system without the system being filled or pressurized. The licensee is required to comply with the requirements imposed by Section XI of the ASME Code, or request exemption from particular requirements via a relief request. The licensee submitted a relief request to invoke ASME Code Case N-805 to restore compliance with regulatory requirements.

Analysis. The inspectors determined that the licensee's failure to perform a pressure test of the reactor vessel flange leak-off line was a performance deficiency. This finding was more than minor because it affected the Initiating Events Cornerstone attribute of Equipment Reliability and affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions. Using Manual Chapter 0609, Attachment A, "The Significant Determination Process (SDP) for Findings At-Power," the finding was determined to be of very low safety significance (Green) because the finding did not result in exceeding the reactor coolant system leak rate for a small loss-of-coolant accident, and did not affect other systems used to mitigate a loss-of-coolant accident resulting in a total loss of their function. This issue did not have a cross-cutting aspect associated with it because it is not indicative of current performance (Section 1R08).

Enforcement. Title 10 CFR 50.55a(g)(4) requires that components classified as ASME Code Class 1, Class 2, and Class 3 meet the requirements set forth in Section XI of the applicable editions of the ASME Boiler and Pressure Vessel Code and Addenda. Title 10 CFR 50.55(a)(g)(4)(ii) requires that inservice examination of components be conducted during successive 120-month inspection intervals and comply with the requirements of the latest edition and addenda of the Code applicable to the specific interval. ASME Code, Section XI, Article IWC-5221 requires for Class 2 pressure retaining components a system leakage test be performed at the system pressure obtained while the system, or portion of the system, is in service performing its normal operating function. Contrary to the above, prior to November 1, 2012, the licensee failed to perform the required pressure test on the reactor vessel flange seal leak-off line for each of the two units. Because this finding is of very low safety significance and has been entered into the corrective action program as Condition Report 12-28600, this violation is being treated as a non-cited violation consistent with Section 2.3.2.a of the NRC Enforcement Policy: NCV 05000498/2012005-01 and 05000499/2012005-01, "Failure to Perform Pressure Testing of the Reactor Vessel Flange Leak-Off Lines."

.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 was replaced and inspected in a previous outage. Therefore, the inspectors determined this section of Inspection Procedure 71111.08 is not applicable.

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 OPGP03-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 usually 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. Therefore, the inspectors determined this section of Inspection Procedure 71111.08 is not applicable.

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 four 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.

These actions constitute completion of the requirements of Section 02.05.

b. Findings

Introduction. Inspectors identified a Green non-cited violation of Technical Specification 6.8.1.a and Regulatory Guide 1.33, for the failure to follow procedures that ensured abrasive tools designated for stainless steel weld preparation were stored separately from hand files and wire brushes used on carbon steel.

Description. During inspection of the tool storage areas in the welding shop; machine shop; and the tool issue room in the radiologically controlled area, inspectors identified that hand files and wire brushes designated for either stainless steel or carbon steel weld preparation and maintenance were not stored separately. The inspectors noted that more than 10 hand files marked for use on stainless steel were rusty and, therefore, most likely had been used on carbon steel. In addition, during system walkdowns, the inspectors identified stainless steel piping and welds with surface rust. This was an indication that the area may have been cleaned with wire brushes that had previously been used on carbon steel. Inspectors were concerned that the failure to separate tools used for stainless steel weld preparation from tools used for carbon steel preparation could result in the contamination of stainless steel welds and piping by carbon steel filings, and affect the material integrity and corrosion resistance of these components. Inspectors reviewed Procedure OPGP03-ZG-0001, "Control of Materials and Products By User Groups," Revision 30, and Procedure OPNP01-ZP-0032, "Tools and Measuring & Test Equipment Control," Revision 6, and concluded that the licensee staff was not consistently following the procedure to ensure the segregation of abrasive tools designated for use on stainless steel from tools used on carbon steel. Step 3.1.3.3.a of Procedure OPNP01-ZP-0032 stated, "Color coded tools that inadvertently come in contact with materials other than what they were coded for may be used for



non-stainless steel and non-aluminum bronze use if the color code is removed or color coded black.”

The licensee reviewed the inspectors’ concerns and concluded that the storage of files and wire brushes designated for use only on stainless steel in the various tool rooms was not meeting the requirements established in Procedure 0PGP03-ZG-0001, “Control of Materials and Products By User Groups,” Revision 30, and Procedure 0PNP01-ZP-0032, “Tools and Measuring & Test Equipment Control,” Revision 6. In particular, there was no consistent segregation of files or wire brushes, and there were files designated for use on stainless steel that were rusty and may have been used on carbon steel. The licensee took immediate action to remove the stainless steel designations from tools that were mixed with tools used on carbon steel. Additionally, the licensee planned to conduct additional training with maintenance personnel regarding the requirements for the separation of abrasive tools that are designated for use on stainless steel from those used on other materials. The licensee also reinforced the standards to the tool room attendants to properly store and mark abrasive tools designated for use on stainless steel, and to question the requester of abrasive tools for the end use location so the appropriate tool could be provided.

The inspectors walked down various safety-related and important to safety systems, and identified corrosion deposits on stainless steel components that may have been caused by using contaminated stainless steel brushes. The licensee did not have any procedure or approved methodology for cleaning stainless steel surfaces that were contaminated, or suspected to be contaminated, by inappropriate use of tools that had contaminated with carbon steel. This issue was entered into the licensee’s corrective action program as Condition Report 12-28689.

Analysis. Inspectors determined that the failure to follow the requirements of Procedure 0PGP03-ZG-0001, “Control of Materials and Products By User Groups,” Revision 30, and Procedure 0PNP01-ZP-0032, “Tools and Measuring & Test Equipment Control,” Revision 6, to assure that abrasive tools designated for exclusive use on stainless steel were stored separately from tools used on other materials was a performance deficiency. This finding was more than minor because it affected the Initiating Events Cornerstone attribute of Equipment Reliability and affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions. Using Manual Chapter 0609, Attachment A, “The Significant Determination Process (SDP) for Findings At-Power,” the finding was determined to be of very low safety significance (Green) because the finding did not result in exceeding the reactor coolant system leak rate for a small loss-of-coolant accident, and did not affect other systems used to mitigate a loss-of-coolant accident resulting in a total loss of their function. This finding had a cross-cutting aspect in the area of human performance work practices in that the licensee failed to effectively communicate expectations regarding procedural compliance, and personnel did not follow procedures. Specifically, the inspectors observed that although there were requirements to segregate the tools, tools were not consistently segregated when returned to the storage locations as required by procedures [H.4(b)].

Enforcement. Technical Specification 6.8.1.a, "Procedures," requires that written procedures be established; implemented; and maintained covering the applicable procedures in Regulatory Guide 1.33, Revision 2, Appendix A. Regulatory Guide 1.33, "Quality Assurance Program," Appendix A, Section 9.a requires that maintenance that can affect the performance of safety-related equipment should be properly preplanned and performed in accordance with written procedures, documented instructions, or drawings appropriate to the circumstances. The control of tools used on stainless steel was an activity affecting quality and was implemented by Procedure OPGP03-ZG-0001, "Control of Materials and Products By User Groups," Revision 30, and Procedure OPNP01-ZP-0032, Revision 6. Step 3.1.3.3.a required, in part, that tools marked for use only on stainless steel be stored in a designated location, and tools designated for use on stainless steel have the markings removed if used on carbon steel. Contrary to the above, prior to November 1, 2012, the licensee failed to implement written procedures covering requirements in Regulatory Guide 1.33, "Quality Assurance Program," Revision 2, Appendix A, Section 9.a. Specifically, the licensee failed to accomplish the separation and appropriate designation of tools used on stainless steel, or to ensure tools used to clean stainless steel components had not been contaminated with carbon steel. The licensee took immediate action to separate the abrasive tools and remark them as necessary and provided training to the tool room attendants on the requirements to segregate tools based on use. This issue was entered into the licensee's corrective action program as Condition Report 12-28689. This finding was determined to be of very low safety significance and was entered into the licensee's corrective action program. This violation is being treated as a non-cited violation consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 05000498/2012005-02, "Failure to Follow Procedure for the Control of Tools for Use on Stainless Steel."

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

**.1 Quarterly Review of Licensed Operator Requalification Program**

**a. Inspection Scope**

On December 18, 2012, the inspectors observed a crew of licensed operators in the plant's simulator during requalification training. The inspectors assessed the following areas:

- Licensed operator performance
- The quality of the training provided
- The modeling and performance of the control room simulator
- Follow-up actions taken by the licensee for any identified discrepancies

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 Quarterly Observation of Licensed Operator Performance

a. Inspection Scope

On October 20-23, 2012, the inspectors observed the performance of on-shift licensed operators in the Unit 1 main control room. At the time of the observations, the plant was in a period of heightened activity due to the commencement of a plant shutdown for Refueling Outage 1RE17, which was followed by a cooldown and a period of increased reactor coolant system water inventory (solid plant).

In addition, the inspectors assessed the operators' adherence to plant procedures, including the conduct of operations procedure and other operations department policies.

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

b. Findings

No findings were identified.

.3 Annual Inspection (Units 1 and 2)

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. For this annual inspection requirement, the licensee was in the first part of the training cycle.

a. Inspection Scope

The inspector reviewed the results of the examinations and operating tests for both units to satisfy the annual inspection requirements.

On January 7, 2013, the licensee informed the lead inspector of the following Units 1 and 2 results:

- Fourteen of fifteen crews passed the simulator portion of the operating test
- Ninety-six of ninety-six licensed operators passed the simulator portion of the operating test
- Ninety-six of ninety-six licensed operators passed the job performance measure portion of the examination

All of the individuals that failed the applicable portions of the operating test were remediated, retested, and passed their retake operating tests prior to returning to shift.

The inspector completed one inspection sample of the annual 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:

- October 31, 2012, Units 1 and 2, essential cooling water
- November 26, 2012, Units 1 and 2, component cooling water
- December 6, 2012, Units 1 and 2, residual heat removal system

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

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

The inspectors assessed performance issues with respect to the reliability, availability, and condition monitoring of the system. In addition, the inspectors verified maintenance

effectiveness issues were entered into the corrective action program with the appropriate significance characterization. Specific documents reviewed during this inspection are listed in the attachment.

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

b. Findings

No findings 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 1-12, 2012, Unit 1, planned work activities on Class 1E 125-volt battery and inverter/rectifiers on trains C and D, which required exceeding the front stop and using the risk management technical specifications configuration risk management program
- October 1 – November 27, 2012, Unit 1, activities associated with Unit 1 Refueling Outage 1RE17, including staging of materials in preparation of the outage; coastdown operation; the refueling outage; reactor startup; breaker closure; and power ascension

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 and Functionality Assessments (71111.15)**

a. Inspection Scope

The inspectors reviewed the following assessments:

- November 14, 2012, Unit 1, pressurizer spray valve PCV-655B body-to-bonnet leakage
- November 28, 2012, Unit 2, essential cooling water through-wall leakage on inlet pipe to component cooling water pump 2A supplemental cooler
- December 18, 2012, Unit 1 and 2, main steam system steam dump valves wrong size booster installed
- December 20, 2012, Unit 1, safety injection accumulator 1A level decreasing and residual heat removal header 1A pressurizing
- December 20, 2012, Units 1 and 2, safety-related fire penetration seals less than the design thickness amount

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

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

b. Findings

See Section 4OA2 for a non-cited violation associated with the fire penetration seals.

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

### Permanent Modifications

#### a. Inspection Scope

The inspectors reviewed key parameters associated with materials, replacement components, timing, equipment protection from hazards, operations, flow paths, pressure boundary, ventilation boundary, structural, licensing basis, and failure modes for the permanent modification identified as safety injection system refueling water storage tank.

The inspectors verified that modification preparation, staging, and implementation did not impair emergency/abnormal operating procedure actions, key safety functions, or operator response to loss of key safety functions; post-modification testing will maintain the plant in a safe configuration during testing by verifying that unintended system interactions will not occur; systems, structures and components' performance characteristics still meet the design basis; the modification design assumptions were appropriate; the modification test acceptance criteria will be met; and licensee personnel identified and implemented appropriate corrective actions associated with permanent plant modifications. Specific documents reviewed during this inspection are listed in the attachment.

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

#### b. Findings

No findings were identified.

## **1R19 Post-maintenance Testing (71111.19)**

#### a. Inspection Scope

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

- October 4, 2012, Unit 2, standby diesel generator 22 testing after replacement of cylinder head 9L
- October 15, 2012, Unit 1, essential service water pump 1A testing after Agastat relay replacement
- October 22, 2012, Unit 1, residual heat removal train B safety injection flow control valve 0852
- November 19, 2012, Unit 1, safety injection system refueling water storage tank system pressure test after welded floor plate/joint repairs

- December 5, 2012, Unit 1, loop C reactor coolant system average coolant temperature card replacement due to a failed low indication on TI-432A

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 post-maintenance 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 post-maintenance testing inspection samples as defined in Inspection Procedure 71111.19-05.

b. Findings

No findings were identified.

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

a. Inspection Scope

The inspectors reviewed the outage safety plan and contingency plans for Unit 1 Refueling Outage 1RE17, conducted October 20 through November 27, 2012, 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 containment to verify that debris had not been left which could block emergency core cooling system suction strainers, and reactor physics testing.
- Licensee identification and resolution of problems related to refueling outage activities.

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

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

b. Findings

No findings 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 16-17, 2012, Unit 1, train A and B main steam safety valves in-service test
- November 14, 2012, Unit 1, train A, B, and C low head safety injection flow sweeps
- November 21, 2012, Unit 1, train A, B, C, and D main steam isolation valves actuation and response time test (containment isolation valve test)
- December 4, 2012, Unit 2, local leak rate testing of personnel airlock door seals (Unit 2 containment isolation valve)
- December 5, 2012, Unit 1, reactor coolant system leakage detection surveillance following startup from Refueling Outage 1RE17

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**

**Cornerstones: Public Radiation Safety and Occupational Radiation Safety**

**2RS1 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

No findings were identified.

**2RS2 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

No findings were identified.

**4. OTHER ACTIVITIES**

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

**40A1 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 2012 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 2011 through the third quarter 2012. 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 2011 through September 2012 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 reviewed condition reports related to Frequently Asked Question 480. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of two, one per unit, mitigating systems performance index - emergency ac power system samples 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 2011 through the third quarter 2012. 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 2011 through September 2012 to validate the accuracy of the submittals. The inspectors reviewed the mitigating systems performance index component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of two, one per unit, mitigating systems performance index - high pressure injection system samples 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 2011 through the third quarter 2012. 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 2011 through September 2012 to validate the accuracy of the submittals. The inspectors reviewed the mitigating systems performance index component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of two, one per unit, mitigating systems performance index - heat removal system samples 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 2011 through the third quarter 2012. 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 2011 through September 2012 to validate the accuracy of the submittals. The inspectors reviewed the mitigating systems performance index component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of two, one per unit, mitigating systems performance index - residual heat removal systems samples 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 2011 through the third quarter 2012. 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 2011 through September 2012 to validate the accuracy of the submittals. The inspectors reviewed the mitigating systems performance index component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of two, one per unit, mitigating systems performance index - cooling water system samples 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 fourth quarter of 2011 through the third quarter of 2012. 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 areas (greater than 1 rem/hr) and very high radiation area nonconformances. 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 fourth quarter of 2011 through the third quarter of 2012. 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.

**40A2 Problem Identification and Resolution (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 through December 2012, 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, but the inspectors did determine that a declining trend in the fire protection program exists. This was evidenced by multiple condition reports on both Units 1 and 2 that documented: (1) gaps in the fire penetration seals, (2) lack of required seal penetration thickness per design, (3) wrong caulk material used to seal gaps, (4) improperly stored transient combustibles, (5) improperly used flammable liquid storage lockers, (6) improperly stored permanent equipment, and (7) procedures and training on preventative maintenance tasks associated with fire protection are not identifying issues at a low enough threshold. The licensee agreed with the inspectors' observations and entered the issue into the corrective action program as Condition Report 12-30292, requiring an apparent cause evaluation be completed to understand how the program developed negative performance issues and to determine actions to take to improve the fire protection program. See Section 4OA2.4 for a violation associated with fire penetration seals.

.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 corrective action item documenting the inspectors' questions about fire penetration seals. The inspectors reviewed the UFSAR, the Fire Hazards Analysis Report, fire protection procedures, preventative maintenance work orders, design drawings, vendor documentation, vendor testing, interviewed personnel, reviewed the apparent cause investigation, and the corrective action program to ensure that the licensee was installing, inspecting, and maintaining the fire penetration seals in accordance with required documentation. Specific documents reviewed are described in the attachment to this report.

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 Technical Specification 6.8.1.d, "Fire Protection Program Implementation," for the failure to follow work order package instructions requiring the use of Drawing C012-00081-F7F, "Detail "E-1" Silicone Elastomer Typical Electrical Pen. Seals (Walls & Floors)," Revision F, to establish the required 6 inches of fire retardant sealant material for penetrations in Units 1 and 2.

Description. During a fire protection walkdown of the Unit 1 train B safety-related 4160 Vac switchgear room, the inspectors noticed that electrical penetration F4476 had gaps around the edges of the seal. The inspectors questioned the licensee on the history of the penetration and determined that as part of a Unit 1 design change in 1999, the licensee installed new electrical cables that required the original hydrosil fire penetration material to be removed in order for the cables to be routed. Once the new cables were routed, the penetrations were sealed. These activities were accomplished by work order package 139376, which stated “the penetration seal WILL BE IAW the Penetration Seal Permit and detail Drawing C012-00081-F7F.” The penetration permit called for 6 inches of silicone elastomer 45B to be installed and the drawing required a minimum of 6 inches of silicone elastomer 45B to be installed. During the repair activities to correct the gaps, it was discovered that a portion of the penetration only had 4.5 inches of silicone elastomer 45B. This was less than the required 6 inches and, therefore, the penetration was declared nonfunctional and compensatory measures were put in place until corrective actions could be taken. This penetration separates 4160 Vac safety-related switchgear rooms for trains A and B; train C was not impacted and remained operable the entire time providing a safe shutdown train.

The licensee captured this issue as Condition Report 12-28283 and corrective action included an hourly fire watch, restoring the seal to the required minimum of 6 inches, performing additional analysis to be able to support a 3-hour fire barrier with a minimum of 5 inches of silicone elastomer 45B material (but maintaining the design requirement of 6 inches), and performing extent of condition inspections in both Units 1 and 2. These inspections determined that several penetrations had gaps around the circumference, but were within the acceptance criteria of the manufacturer. They also determined that a high number of seals in the sample population were below the required 6 inches, but were greater than 5 inches and determined to be functional but nonconforming.

However, Unit 2 penetration W3660 had only 2 inches of silicone elastomer 45B material in a section of the penetration. This penetration was reworked as a result of a design change in 2005 that replaced an inverter and voltage regulation transformer. Work order package 274967 stated “Install penetration seal IAW the Penetration Seal Permit ... and seal detail drawing C012-00081-F7F.” The licensee captured this under Condition Report 12-31930, and declared the penetration nonfunctional. Corrective actions include an hourly fire watch, rework to restore the penetration to the required thickness, and to reevaluate the extent of condition on penetration thickness based on the high number of penetrations that are less than 6 inches. The inspectors view the failure to self check or peer check the thickness of the silicone elastomer 45B material form prior to pouring to be indicative of current performance, since at least one of the seals that was below the required 6 inches was sealed as recently as October 2011.

Analysis. The inspectors determined that the seals thicknesses being less than the design requirement was a performance deficiency. The finding was more than minor because it was associated with the Initiating Events Cornerstone attributes of Design Control and Procedure Quality, and affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions because it resulted in multiple fire penetration seals being declared nonfunctional as a result of being less than the design thickness. The inspectors used

Manual Chapter 0609, Attachment 0609.04, to determine that fire protection issues are processed through Appendix F, "Fire Protection Significance Determination Process," dated February 28, 2005. The inspectors used Appendix F, Attachment 1, to determine that the finding was of very low safety significance (Green) because it was a Moderate A fire confinement issue that screened out using Task 1.3.2 questions, since the seals would still have provided a 2-hour fire endurance rating or a 20 minute fire endurance rating without the seal being subject to direct flame impingement. In addition, this finding had human performance cross-cutting aspects associated with work practices because the licensee did not communicate human error prevention techniques such as self and peer checking, commensurate with the risk, such that the work activity was performed safely [H.4(a)].

Enforcement. Technical Specification 6.8.1.d states that written procedures shall be established, implemented, and maintained covering the Fire Protection Program implementation. The Fire Protection Program implements and maintains the design requirements for penetrations based on fire confinement as analyzed in the Fire Hazards Analysis Report. The Fire Hazards Analysis Report assumes these fire areas are protected by 3-hour rated fire barriers. Work Authorization Numbers 139376 and 274967 required the use of Drawing C012-00081-F7F, which required a minimum of 6 inches of seal material to be rated for 3 hours. Contrary to the above, in 1999 for Unit 1 penetration F4476, and in 2005 for Unit 2 penetration W3660, maintenance personnel failed to correctly follow the work package and implement Drawing C012-00081-F7F, to ensure that 6 inches of silicone elastomer 45B were installed. Because this finding was of very low safety significance and was entered into the licensee's corrective action program as Condition Reports 12-28283 and 12-31930, this finding is being treated as a non-cited violation, consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 05000498/2012005-03 and 05000499/2012005-03, "Failure to Maintain Adequate Fire Penetration Seal Material Thickness."

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

(Closed) Licensee Event Report 05000499/2011-003-000, "Unit 2 Plant Mode Change with Turbine Trip Disabled"

During the April 2010 and November 2011 refueling outages, Unit 2 transitioned from Mode 4 to Mode 3 without having the required solid state protection system generated turbine trip signals operable. A maintenance work activity installed a jumper in both channels, trains R and S, of the nonclass relays to the turbine trip circuit. The defeated signals from the solid state protection system were the turbine trip from the reactor trip breakers open (P-4), turbine trip from a reactor trip signal (P-16), and the turbine trip from a steam generator HI-HI (P-14). Per Technical Specification 3.3.2, items 5a and 5b, P-4 and P-14 are required in Modes 1, 2, and 3. The jumpers were not removed until after Mode 3 had already been entered, a condition prohibited by Technical Specification 3.0.4. See Section 40A7 for the enforcement aspects of this licensee event report. This licensee event report is closed.

#### 40A5 Other Activities

- .1 (Closed) NRC Temporary Instruction 2515/177, “Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal and Containment Spray Systems (NRC Generic Letter 2008-01)”

As documented in NRC Inspection Reports 05000498/2010003, 2011002, 2011003, 2012002 and 05000499/2010003, 2011002, 2011003, and 2012002, the inspectors completed activities associated with Temporary Instruction 2515/177.

- .2 (Closed) NRC Temporary Instruction 2515/187, “Inspection of Near-Term Task Force Recommendation 2.3 Flooding Walkdowns”

a. Inspection Scope

The inspectors verified that the licensee’s flooding walkdown activities were conducted using walkdown methodology endorsed by the NRC. These flooding walkdowns are being performed at all sites in response to a letter from the NRC to licensees, entitled “Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident,” dated March 12, 2012. Inspectors verified that licensee’s walkdown packages contained the elements specified in NEI 12-07 Walkdown Guidance document including:

- Watertight doors
- Buildings and structures, including building drain system check valves
- Hatches and panels
- Manholes and penetrations

b. Inspection Documentation

The inspectors accompanied the licensee on their walkdown of the:

- Unit 1 essential cooling water intake structure
- Unit 1 fuel handling building
- Unit 1 non-safety related electrical penetrations (manholes)
- Unit 2 essential cooling water intake structure
- Unit 2 non-safety related electrical penetrations (manholes)

and verified that the licensee confirmed the following flood protection features:

- Visual inspection of the flood protection feature was performed if the flood protection feature was relevant. External visual inspection for indications of degradation that would prevent its credited function from being performed was performed
- Critical structure, system, and component dimensions were measured

- Available physical margin, where applicable, was determined
- Flood protection feature functionality was determined using either visual observation or by review of other documents

The inspectors independently performed their walkdown and verified that the flood protection features were in place for the following areas:

- Unit 1 safety-related electrical penetrations (manholes)
- Unit 1 mechanical and electrical auxiliary building flood doors
- Unit 2 safety-related electrical penetrations (manholes)
- Unit 2 mechanical and electrical auxiliary building flood doors

The inspectors verified that noncompliances with current licensing requirements, and issues identified in accordance with the 10 CFR 50.54(f) letter, item 2.g of Enclosure 4, were entered into the licensee's corrective action program. In addition, issues identified in response to item 2.g that could challenge risk-significant equipment and the licensee's ability to mitigate the consequences will be subject to additional NRC evaluation.

c. Findings

No findings were identified.

.3 (Closed) NRC Temporary Instruction 2515/188, "Inspection of Near-Term Task Force Recommendation 2.3 Seismic Walkdowns"

a. Inspection Scope

The inspectors verified that the licensee's seismic walkdown activities were conducted using walkdown methodology endorsed by the NRC. These seismic walkdowns are being performed at all sites in response to a letter from the NRC to licensees, entitled "Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident," dated March 12, 2012.

b. Inspection Documentation

The inspectors accompanied the licensee on their seismic walkdowns of spaces and components:

- Essential cooling water self-cleaning strainer 2A, September 25, 2012; essential cooling water pump room 2A
- Essential cooling water screen wash pump 2A and FV-6914 solenoid valve, September 25, 2012; essential cooling water 2A room 101
- Unit 1, engineered safety features load sequencer cabinet B, September 26, 2012; train A load sequencer room 015C

- Auxiliary feedwater pump 12, September 27, 2012; train B auxiliary feedwater pump room 006
- Qualified data processing system auxiliary process cabinet B1 ZLP678, September 26, 2012; electrical auxiliary building area 015C

The inspectors verified that the licensee confirmed that the following seismic features associated with Electrical Distribution Panel DP 001 were free of potential adverse seismic conditions.

- Anchorage was free of bent, broken, missing or loose hardware.
- Anchorage was free of corrosion that is more than mild surface oxidation.
- Anchorage was free of visible cracks in the concrete near the anchors.
- Anchorage configuration was consistent with plant documentation.
- Safety system components will not be damaged from impact by nearby equipment or structures.
- Overhead equipment, distribution systems, ceiling tiles and lighting, and masonry block walls are secure and not likely to collapse onto the equipment.
- Attached lines have adequate flexibility to avoid damage.
- The area appears to be free of potentially adverse seismic interactions that could cause flooding or spray in the area.
- The area appears to be free of potentially adverse seismic interactions that could cause a fire in the area.
- The area appears to be free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations.

The inspectors independently performed their walkdown and verified the following areas:

- Unit 1, electrical auxiliary building train A channel distribution room, September 27, 2012
- Unit 2, fuel handling building main supply fan room, September 27, 2012

Observations made during the walkdown that could not be determined to be acceptable were entered into the licensee's corrective action program for evaluation.

Additionally, inspectors verified that items that could allow the spent fuel pool to drain down rapidly were added to the seismic walkdown equipment list, and these items were walked down by the licensee.



c. Findings

No findings were identified.

**40A6 Meetings, Including Exit**

Exit Meeting Summary

On October 25, 2012, the inspectors presented the results of the radiation safety inspections 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 November 1, 2012, the inspectors presented the inspection results of the review of inservice inspection activities to Mr. D. Rencurrel, Senior Vice President, 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 16, 2012, the inspectors reexited the inspection for inservice inspection activities with Mr. M. Murray, Manager, Regulatory Affairs, and other members of the licensee staff due to a change in the characterization of the issues based on additional information provided.

On January 3, 2013, the inspectors presented the inspection results to Mr. D. Rencurrel, Senior Vice President, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

The lead inspector obtained the final annual examination results and telephonically exited with Mr. T. Hurley, Operations Training Supervisor for Requalification, on January 7, 2013. The inspector did not review any proprietary information during this inspection.

**40A7 Licensee-Identified Violations**

The following violation of very low safety significance (Green) was identified by the licensee and is a violation of NRC requirements which meet the criteria of the NRC Enforcement Policy for being dispositioned as a non-cited violation.

- Technical Specification 3.0.4 requires, in part, that entry into a mode or other specified condition in the applicability shall only be made when the associated actions to be entered permit continued operation for an unlimited period of time, or after performance of a risk assessment addressing inoperable systems, or when specifically allowed by the specification. Contrary to the above, in April 2010 and November 2011, Unit 2 transitioned from Mode 4 to Mode 3 without all required equipment being operable, without performing a risk assessment, and when not allowed by the specification. Specifically, the turbine trip signal from the reactor trip breakers, the turbine trip signal from the reactor trip signal, and the turbine trip signal from a steam generator HI-HI level were all inoperable due to a jumper being

installed for testing when the plant transitioned from Mode 4 to Mode 3. The inspectors used Manual Chapter 0609, Appendix A since the finding was identified after residual heat removal was secured, and determined that the finding was of very low safety significance because the finding did not contribute to both the likelihood of a reactor trip and the loss of mitigation equipment. The licensee entered this issue into the corrective action program as Condition Report 11-27377.

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### **Licensee Personnel**

R. Aguilera, Manager, Health Physics  
M. Berg, Manager, Design Engineering  
C. Bowman, General Manager, Engineering and Regulatory Affairs  
C, Chappell, Licensing  
R. Dunn Jr., Manager, Fuels and Analysis  
L. Earls, Consultant, Radiation Protection  
R. Engen, Site Engineering Director  
T. Frawley, Manager, Operations  
J. Hartley, Manager, Mechanical Maintenance  
J. Heil, Engineering Programs  
G. Hildebrandt, Manager, EP/Plant Protection  
T. Hurley, Operations Training Supervisor, Requalification  
G. Janak, Manager, Unit 1 Operations  
B. Jenewein, Manager, Systems Engineering  
D. Koehl, President and CEO/CNO  
J. Lovejoy, Manager, I&C Maintenance  
A. McGalliard, Manager, Areas for Improvement  
J. Mertink, Manager, Training and Knowledge Transfer  
B. Migl, Manager, Maintenance Engineering (Acting)  
J. Milliff, Manager, Unit 2 Operations  
M. Murray, Manager, Regulatory Affairs  
R. Neimann, Site ANII  
J. Paul, Supervisor, Licensing  
L. Peter, Plant General Manager  
J. Pierce, Manager, Operations Training  
G. Powell, Vice President, Generation, Units 1 and 2  
D. Rencurrel, Senior Vice President  
M. Ruvalcaba, Manager, Testing and Programs  
R. Savage, Engineer, Licensing Staff Specialist  
M. Schaefer, Manager, Maintenance  
K. Silverthorne, Welding, Engineering Programs  
S. Sovizral, Manager, Security Operations  
L. Spiess, Lead, Inservice Inspection  
M. Tomek, ALARA Supervisor, Health Physics  
P. Walker, Engineer, Licensing  
D. Wiegand, Fire Protection Engineering  
J. Williams, Engineering Programs  
C. Younger, Engineering Programs  
D. Zink, Supervising Engineering Specialist

NRC Personnel

J. Dixon, Senior Resident Inspector  
K. Kennedy, Director, Division Reactor Projects  
B. Tharakan, Resident Inspector

**LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED**

Opened and Closed

05000498/2012005-01 05000499/2012005-01	NCV	Failure to Perform Pressure Testing of the Reactor Vessel Flange Leak-Off Lines (Section 1R08)
05000498/2012005-02	NCV	Failure to Follow Procedure for the Control of Tools for Use on Stainless Steel (Section 1R08)
05000498/2012005-03 05000499/2012005-03	NCV	Failure to Maintain Adequate Fire Penetration Seal Material Thickness (Section 4OA2)

Closed

05000499/2011-003-000	LER	Unit 2 Plant Mode Change with Turbine Trip Disabled (Section 4OA3)
2515/177	TI	Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems (NRC Generic Letter 2008-01) (Section 4OA5)
2515/187	TI	Inspection of Near-Term Task Force Recommendation 2.3 Flooding Walkdowns (Section 4OA5)
2515/188	TI	Inspection of Near-Term Task Force Recommendation 2.3 Seismic Walkdowns (Section 4OA5)

## LIST OF DOCUMENTS REVIEWED

### Section 1R04: Equipment Alignment

#### CONDITION REPORTS

11-16214	12-4756	12-17218	12-27776
12-876	12-5668	12-21068	12-29134
12-3345	12-10603	12-22669	12-30282
12-4216	12-11495	12-24143	12-30464
12-4642			

#### DRAWINGS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
5R169F20000#1	Piping and Instrumentation Diagram Residual Heat Removal System	26
5N129F05015#1	Piping and Instrumentation Diagram Safety Injection System	23

#### PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
OPOP02-AF-0001	Auxiliary Feedwater	34
OPOP02-CC-0001	Component Cooling Water	46
OPOP02-RH-0001	Residual Heat Removal System Operation	59
OPOP02-SI-0002	Safety Injection System Initial Lineup	32
OPOP02-SI-0004	Safety Injection System Operations	4

### Section 1R05: Fire Protection

#### CONDITION REPORTS

12-28283

#### FIRE PREPLANS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
0EAB03-FP-0042	Fire Preplan Electrical Auxiliary Building ESF Switchgear Room Train B	3

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
0EAB03-FP-0052	Fire Preplan Electrical Auxiliary Building ESF Switchgear Room Train C	3

**Section 1R06: Flood Protection Measures**

CALCULATIONS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
MC 5557	IVC Flooding Analysis	8
MC 6163	Penetration Seals for HELBA and Flooding	0

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
MEG-0101	Penetration Seals	1

**Section 1R07: Heat Sink Performance**

CALCULATIONS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
MC-6219	Generic Letter 89-13	2

DRAWINGS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
5R289F05038#1	Piping and Instrumentation Diagram Essential Cooling Water System 1A	15
5R289F05038#1	Piping and Instrumentation Diagram Essential Cooling Water System 1B	16
5R289F05038#1	Piping and Instrumentation Diagram Essential Cooling Water System 1C	17
5R209F05017#1	Piping and Instrumentation Diagram Component Cooling Water System	20
5R209F05018#1	Piping and Instrumentation Diagram Component Cooling Water System	18
5R209F05019#1	Piping and Instrumentation Diagram Component Cooling Water System	17

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
0PEP07-EW-0001	Performance Test for Essential Cooling Water Heat Exchangers	6

WORK AUTHORIZATION NUMBERS

417671

**Section 1R08: Inservice Inspection Activities**

CONDITION REPORTS

11-11600	12-9084	12-22359	12-24356
11-12723	12-13289	12-22360	12-24623
11-13591	12-19417	12-22361	12-25164
11-24973	12-19419	12-22364	12-25242
12-4128	12-21604	12-22428	12-25549
12-4335	12-22347	12-23427	12-28873
12-5163	12-22358	12-23428	12-29104

MISCELLANEOUS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION/DATE</u>
	Inservice Inspection Plan for South Texas Project Electric Generating Station Units 1 and 2	October 8, 2012
WCAP-15988-NP	Generic Guidance for an Effective Boric Acid Inspection Program for Pressurized Water Reactors	2
WP 515807	Install High Point Vent on CCP-1B Discharge Line	0

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
0PEP10-ZA-0004	Ultrasonic Examination	7
0PEP10-ZA-0010	Liquid Penetrant Examination	5
0PEP10-ZA-0017	Magnetic Particle Examination	5
0PEP10-ZA-0023	Visual Examination VT-2	7
0PEP10-ZA-0024	Visual Examination	4
0PGP03-ZA-0514	Controlled System or Barrier Impairment	7

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
0PGP03-ZE-0133	Boric Acid Corrosion Control Program	5
0PGP03-ZF-0001	Fire Protection Program	22
0PGP03-ZF-0018	Fire Protection System Functionality Requirements	15
0PGP03-ZF-0019	Control of Transient Fire Loads and use of Combustible and Flammable Liquids and Gases	9
0PGP03-ZG-0001	Control of Materials and Products By User Groups	30
0PNP01-ZP-0032	Tool and Measuring and Test Equipment Control	6

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

MISCELLANEOUS

<u>TITLE</u>	<u>DATE</u>
Operating Test Results	January 7, 2013

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
0PMP07-DM-0003	Rapid Refueling Rod Holdout Operation	31
0POP03-ZG-0006	Plant Shutdown from 100% to Hot Standby	50
0POP03-ZG-0007	Plant Cooldown	67
0POP03-ZG-0012	Operation with Rods in Rapid Refueling Position	9
0POP05-EO-EO30	Steam Generator Tube Rupture	25
0POP07-RS-0001	Control Rod Exercise	10
	Conduct of Operations	12

**Section 1R12: Maintenance Effectiveness**

CONDITION REPORTS

04-913	11-12309	12-22876	12-29363
04-8283	11-18361	12-23555	12-29878
08-10461	11-31266	12-28052	12-30125
10-2026	12-1044	12-28218	12-30312
11-3196	12-10544	12-28613	12-30461
11-8606	12-21354	12-28962	12-30879
11-8615			



MISCELLANEOUS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION/DATE</u>
	Maintenance Rule System Scoping Basis Report	March 8, 2012
	Maintenance Rule Expert Panel Meeting Minutes	October 17, 2012
	System Health Report – Component Cooling Water (CC)	Second Quarter 2011 – Third Quarter 2012
	System Health Report – Essential Cooling Water (EW)	First Quarter 2011 – Second Quarter 2012
	System Health Report – Residual Heat Removal (RH)	First Quarter 2011 – Third Quarter 2012
5A050GACC01	Component Cooling Water System Risk Significance Basis Document	5
5A050GAEW01	Essential Cooling Water System Risk Significance Basis Document	5
5A050GARRH01	Residual Heat Removal Risk Significance Basis Document	5

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
SEG-0009	Maintenance Rule Basis Document Guideline	1

WORK AUTHORIZATION NUMBERS

397591	442109	442589	452347
423142	442391	452346	455814
434048	442485		

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

CONDITION REPORTS

12-29316	12-30322	12-30944
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MISCELLANEOUS

<u>TITLE</u>	<u>DATE</u>
1RE17 Shutdown Risk Assessment Report	October 3, 2012

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
0PGP03-ZA-0091	Configuration Risk Management Program	12
0PGP03-ZG-RMTS	Risk-Managed Technical Specification Program	1
0PGP03-ZO-0039	Operations Configuration Management	26
0POP01-ZO-0006	Risk Management Actions (RMAs)	19
0POP02-AE-0004	120 VAC ESF Vital Distribution Power Supplies	48

**Section 1R15: Operability Evaluations and Functionality Assessments**

CONDITION REPORTS

11-3756	12-30688	12-31423	12-31548
12-25979	12-31048	12-31426	12-31930
12-28283	12-31132		

MISCELLANEOUS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION/DATE</u>
C012-00052-7F	Vendor Technical Information for Installation of Silicone Elastomer Procedure 45B	E
C012-00399-B7F	Southwest Research Institute ASTM E814-83/IEEE 634-1978 Three-Hour Fire Test of Four Penetrations	September 9, 1987

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
0PGP03-ZE-0027	ASME Section XI Repair/Replacement Activities	29
0PGP03-ZE-0082	ASME Section XI Repair/Replacement Activity Pressure Testing	0
0PGP03-ZO-0046	RCS Leakage Monitoring	8
0PGP03-ZO-9900	Operability Determinations and Functionality Assessments Program	4
0PGP03-ZO-9900A	Operability Determinations and Functionality Assessments Implementation	1
0PGP03-ZX-0002	Condition Reporting Process	45
0PGP04-ZA-0002	Condition Report Engineering Evaluation	16

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
0POP01-ZA-0049	Condition Report Operations Evaluation Program	6
0POP01-ZO-0011	Operability, Functionality, and Reportability Guidance	5
0POP05-EO-EO30	Steam Generator Tube Rupture	25
0PTP03-FP-0123	Fire Barrier Penetration Seal Visual Examination	8
0PTP03-FP-0125	Fire Rated Assembly Visual Examination	8

WORK AUTHORIZATION NUMBERS

462588

**Section 1R18: Plant Modifications**

CONDITION REPORTS

11-17459                      12-29594                      12-31418

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
0PEP10-ZA-0055	Vacuum Box Testing	0
0PGP03-ZE-0133	Boric Acid Corrosion Control Program	3
0PGP04-ZA-0002	Condition Report Engineering Evaluation (CREE)	16
0PGP04-ZE-0309	Design Change Package	28
0PGP05-ZA-0002	10 CFR 50.59 Evaluations	16
1TOP02-SI-0101	Drain and Fill Unit 1 RWST	0

WORK AUTHORIZATION NUMBERS

437118                      437119

**Section 1R19: Post-maintenance Testing**

CONDITION REPORTS

12-27493                      12-28400                      12-31375                      12-31418  
12-28052                      12-28471

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
	Security Instruction 2600	3
00OI01-OL-0005	Operations Logs – Diesel Generator	15
OPGP03-ZM-0025A	Post-Maintenance Testing Implementation	4
0PMP04-DG-0019	Standby Diesel Generator Fuel Injection Pump and Nozzle Assembly Maintenance	23
0PMP05-ZE-0108	Type AR Auxiliary Relay – Maintenance	3
0POP02-SI-0001	Safety Injection System	35
0PSP02-RC-0410	Delta T and T Average ACOT	50
0PSP03-DG-0002	Standby Diesel 12(22) Operability Test	48
0PSP05-RC-0430	Delta T and T Average Loop 3 Set 3 Calibration (T-0430)	47
WCG-0008	Preventing Recurring Equipment Problems (PREP)	6

WORK AUTHORIZATION NUMBERS

431132	437119	459343	464004
431133	458236	459979	

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

CONDITION REPORTS

12-28000	12-29203	12-30031	12-30720
12-29083	12-29651	12-30689	12-30724
12-29103	12-29984	12-30717	12-30781
12-29134			

MISCELLANEOUS

<u>TITLE</u>	<u>DATE</u>
1RE17 Shutdown Risk Assessment Report	October 3, 2012

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
0PEP02-ZX-0002	Initial Criticality and Low Power Physics Testing	26
OPGP03-ZA-0069	Control of Heavy Loads	23

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
0PGP03-ZA-0090	Work Process Program	38
0PGP03-ZA-0101	Shutdown Risk Assessment	25
0PGP03-ZA-0135	Outage Scope Change Process	5
0POP03-RC-0100	RCS Vacuum Fill	36
0POP03-ZG-0001	Plant Heatup	58
0POP03-ZG-0003	Secondary Plant Startup	31
0POP03-ZG-0004	Reactor Startup	40
0POP03-ZG-0005	Plant Startup to 100%	77
0POP03-ZG-0006	Plant Shutdown from 100% to Hot Standby	50
0POP03-ZG-0007	Plant Cooldown	67
0POP03-ZG-0008	Power Operations	54
0POP03-ZG-0009	Mid-Loop Operation	58
0POP03-ZG-0010	Refueling Operations	61

**Section 1R22: Surveillance Testing**

CONDITION REPORTS

08-796	11-21569	12-30282	12-30944
10-5568	12-30196	12-30309	

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
0PGP03-ZE-0015	Inservice Testing Program	2
0PGP03-ZE-0021	Inservice Testing Program for Valves	19
0PGP03-ZO-0046	RCS Leakage Monitoring	8
0POP07-SI-0004	Safety Injection System Flow Sweeps	6
0PSP03-MS-0002	Main Steam System Cold Shutdown Valve Operability Test	18
0PSP03-RC-0006	Reactor Coolant Inventory	25
0PSP03-SP-0024	Steam Line Isolation Actuation and Response Time Test	13
0PSP11-MS-0001	Main Steam Safety Valve Inservice Test	19

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
0PSP11-XC-0008	LLRT Penetration M-90 Personnel Airlock Door Seals	20

WORK AUTHORIZATION NUMBERS

330565	407361	419750	427083
407360	411390	420842	433269

**Section 2RS1: Radiological Hazard Assessment and Exposure Controls**

AUDITS, SELF-ASSESSMENTS, AND SURVEILLANCES

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
MN-12-0-93249	Quality Monitoring Report	August 20, 2012
MN-12-0-85412	Quality Monitoring Report	January 30, 2012
MN-12-0-92032	Quality Monitoring Report	July 17, 2012
MN-11-2-83288	Quality Monitoring Report	November 12, 2011
MN-11-2-83691	Quality Monitoring Report	May 26, 2011
12-02(RC)	Radiological Controls Quality Audit Report	March 29, 2012

CONDITION REPORTS

12-00218	12-22787	12-27431	12-28254
12-02268	12-23559	12-28024	12-28307
12-11101	12-23567		

MISCELLANEOUS

<u>TITLE</u>	<u>DATE</u>
Radiation Source Inventory and Leak Test	September 19, 2012

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
OPGP03-ZR-0003	Inventory and Leak Testing of Radioactive Sources	7
OPGP03-ZR-0050	Radiation Protection Program	10
OPGP03-ZR-0051	Radiological Access Controls/Standard	29
OPGP04-ZR-0011	Radiation Protection Key Program	29
OPGP04-ZR-0013	Radiological Survey Program	28

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
0PGP04-ZR-0015	Radiological Posting and Warning Devices	29
0PRP07-ZR-0010	Radiation Work Permits/Radiological Work ALARA Reviews	30
0PRP07-ZR-0021	RCB Room 003 Entry	4
0PRP11-ZR-0005	Actions for Reactor Power Ascension	3

#### RADIATION WORK PACKAGES

<u>NUMBER</u>	<u>TITLE</u>
12-26783-3	1RE17 Rapid Refuel
12-26783-6	1RE17 Work Activities in room 001
12-26783-7	1RE17 Work Activities in room 003
12-26783-10	1RE17 Check Valve Inspections (CV-01, 02, 04, 05)

#### RADIOLOGICAL SURVEYS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
52722	Incore Instrumentation Room Unit-1	April 4, 2011
52846	Reactor Cavity Vent Duct Unit-1	April 6, 2011
52722	Incore Instrumentation Room Unit-1	April 29, 2011
54572	Unit-1 Post Reactor Head Power Ascension	May 12, 2011
58210	Unit-2 Post Reactor Head Power Ascension	November 24, 2011
62501	Primary Sample Room Unit-1	October 22, 2012
62507	Hot Chemistry Lab Unit-2	October 21, 2012
62528	Under Reactor Vessel Unit-1	October 22, 2012
62580	Concentrates Transfer Pump 1B Room	October 23, 2012
62583	Boron Analyzer	October 23, 2012
62585	Incore Instrumentation Room Unit-1	October 23, 2012

#### **Section 2RS2: Occupational ALARA Planning and Controls**

#### ALARA REVIEW PACKAGES

<u>NUMBER</u>	<u>DESCRIPTION</u>
11-19683-1	Rapid Refuel

<u>NUMBER</u>	<u>DESCRIPTION</u>
11-19683-2	RHR 2B Motor Replacement
11-19683-7	Reactor Head Scratch Repair
12-14001-1	Reactor Vessel Closure Demolition Project

AUDITS, SELF-ASSESSMENTS, AND SURVEILLANCES

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
MN-11-2-81803	Quality Monitoring Report	October 6, 2011
MN-11-2-82988	Quality Monitoring Report	November 21, 2011
MN-11-2-83561	Quality Monitoring Report	November 12, 2011
MN-11-2-94593	Quality Monitoring Report	April 30, 2011
12-02(RC)	Radiological Controls Quality Audit Report	March 29, 2012

CONDITION REPORTS

10-20131	11-26534	11-29235	12-22787
11-23296	11-26589	11-30218	12-23559
11-23316	11-29161	12-11101	12-27431

MISCELLANEOUS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
	2RE14 Refueling Outage ALARA Report	December 2, 2010
	2RE16 ALARA Review Committee Notes	September 27, 2011
	2RE15 Refueling Outage ALARA Report	March 12, 2012
	1RE16 Refueling Outage ALARA Report	October 18, 2011
	2011 – 2015 ALARA Five Year Plan	October 18, 2010
	2011 STP Annual ALARA Report	May 21, 2012
	Original Reactor Vessel Closure Head Decommissioning Project ALARA Report	October 6, 2011
DCP 10-20316-4	Design Change Package for Permanent Scaffold Frames for Supporting Lead Blankets in RCB	August 13, 2012



PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
OPGP03-ZR-0050	Radiation Protection Program	10
OPGP03-ZR-0052	ALARA Program	13
OPRP07-ZR-0001	ALARA Engineering and Procedure Review	3
OPRP07-ZR-0004	Shielding	18
OPRP07-ZR-0010	Radiation Work Permits/Radiological Work ALARA Reviews	32
STI 32773897	ALARA Planning	4

**Section 40A1: Performance Indicator Verification**

CONDITION REPORTS

11-19073	11-19541	12-404	12-12720
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MISCELLANEOUS

<u>TITLE</u>	<u>DATE</u>
Radiation Safety NRC Performance Indicators	February 14, 2006
Mitigating System Performance Index [MSPI] Bases Document	September 2012

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
OPGP03-ZR-0044	NRC Performance Indicators	10
OPGP03-ZR-0048	Performance Indicator Program	13

WORK AUTHORIZATION NUMBERS

388590	400910	402233	416940
396589	401129	405479	427243
396590	401760	409851	428983
400046			

**Section 40A2: Problem Identification and Resolution**

CONDITION REPORTS

12-28157	12-29543	12-30225	12-30761
12-28283	12-29785	12-30292	12-31329
12-28614	12-29992	12-30483	12-31416
12-28615	12-30047	12-30606	12-31485
12-28617	12-30048	12-30624	12-31930
12-29476	12-30049	12-30664	12-31967

MISCELLANEOUS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION/DATE</u>
C012-00052-7F	Vendor Technical Information for Installation of Silicone Elastomer Procedure 45B	E
C012-00081-F7F	Detail "E-1" Silicone Elastomer Typical Electrical Pen. Seals (Walls & Floors)	July 1, 1994
C012-00399-B7F	Southwest Research Institute ASTM E814-83/IEEE 634-1978 Three-Hour Fire Test of Four Penetrations	September 9, 1987

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
0PTP03-FP-0123	Fire Barrier Penetration Seal Visual Examination	8
0PTP03-FP-0125	Fire Rated Assembly Visual Examination	8

WORK AUTHORIZATION NUMBERS

139376	317873	459988	460481
254125	390991	460367	460482
274967	416091	460480	460483

**Section 40A3: Follow-up of Events and Notices of Enforcement Discretion**

CONDITION REPORTS

11-27377	12-21245
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**Section 40A5: Other Activities**

Temporary Instruction 2515/187, "Inspection of Near-Term Task Force Recommendation 2.3 Flooding Walkdowns"

CONDITION REPORTS

11-4827	12-25811	12-25890	12-26132
12-11655	12-25812	12-25894	12-26142
12-11656	12-25813	12-25898	12-26151
12-11657	12-25814	12-25980	12-26162
12-25603	12-25831	12-25982	12-26168
12-25611	12-25832	12-26004	12-26171
12-25613	12-25833	12-26005	12-26177
12-25696	12-25834	12-26010	12-26182
12-25697	12-25835	12-26028	12-27013
12-25701	12-25859	12-26029	12-27016
12-25753	12-25871	12-26096	12-27571
12-25763	12-25874	12-26099	12-27678
12-25774	12-25876	12-26101	12-27885
12-25797	12-25885	12-26109	12-28278
12-25804	12-25889	12-26116	12-28701

DRAWINGS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
3E10-0-E-2155	Electrical Class 1E Manhole and Duct Bank Sections	11
3E10-0-E-2156	Electrical Class 1E Manhole Plan Duct Bank Sections	18
3M15-9-C-4210	Concrete Mechanical and Electrical Aux Bldg Isolation Valve Cubicle Foundation Plan @ EL 10'-0" Unit No 1 & 2	8
3M15-9-C-4216	Concrete Mechanical and Electrical Aux Bldg Isolation Valve Cubicle Section C	8

FLOODING WALKDOWNS

STP-1-DR-ECW-1	STP-1-MH-SR-1	STP-2-DR-MEAB-1	STP-2-MH-SR-1
STP-1-DR-MEAB-1	STP-1-PEN-ECW-1	STP-2-GEN-BLDGS-1	STP-2-PEN-ECW-1
STP-1-GEN-BLDGS-1	STP-1-PEN-FHB-1	STP-2-MH-NSR-1	STP-2-PEN-FHB-1
STP-1-MH-NSR-1	STP-2-DR-ECW-1		

MISCELLANEOUS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION/DATE</u>
120021	South Texas Project Units 1 and 2 Flood Analysis	March 2012

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION/DATE</u>
DCN CC-54	Qualify a Support for a Pressure Penetration Seal Subjected to 40 feet of Water Head	January 15, 1993
NEI 12-07	Guidelines for Performing Verification Walkdowns of Plant Flood Protection Features	0
NOC-AE-12002932	Final Response to NRC Request for Information Pursuant to 10 CFR 50.54(f) Regarding the Flooding Aspects of Recommendation 2.3 of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident	November 26, 2012

Temporary Instruction 2515/188, "Inspection of Near-Term Task Force Recommendation 2.3 Seismic Walkdowns"

#### CONDITION REPORTS

12-26948	12-26988	12-27020	12-27485
12-26950	12-26991	12-27021	12-27486
12-26953	12-26992	12-27022	12-27492
12-26976	12-26993	12-27023	12-27686

#### MISCELLANEOUS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
NOC-AE-12002931	Final Response to NRC Request for Information Pursuant to 10 CFR 50.54(f) Regarding the Seismic Aspects of Recommendation 2.3 of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident	November 27, 2012

#### PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
25799-000-GPP-GED-00002	Seismic Walkdown Guidance – STP 1&2 Fukushima Response Project	September 7, 2012

#### SEISMIC WALKBYS

STP2-WB-017A	STP2-WB-012C	STP2-WB-010C	STP2-WB-009B
STP2-WB-008A	STP2-WB-006F	STP2-WB-006E	STP2-WB-006A
STP1-WB-014A	STP1-WB-013C	STP1-WB-013B	STP1-WB-010A
STP1-WB-003E	STP1-WB-003D	STP1-WB-002K	STP1-WB-002H
STP1-WB-002G	STP1-WB-002F	STP1-WB-002C	STP1-WB-005B
STP1-WB-004C			

SEISMIC WALKDOWNS

STP2-WD-SWEL-025	STP2-WD-SWEL-010	STP1-WD-SWEL-038	STP1-WD-SWEL-013
STP2-WD-SWEL-024	STP1-WD-SWEL-077	STP1-WD-SWEL-033	STP1-WD-SWEL-008
STP2-WD-SWEL-019	STP1-WD-SWEL-046	STP1-WD-SWEL-032	STP1-WD-SWEL-002
STP2-WD-SWEL-017	STP1-WD-SWEL-039	STP1-WD-SWEL-031	STP2-WD-SWEL-096
STP2-WD-SWEL-030	STP2-WD-SWEL-014	STP2-WD-SWEL-013	STP2-WD-SWEL-012
STP1-WD-SWEL-053	STP1-WD-SWEL-051	STP1-WD-SWEL-048	STP1-WD-SWEL-047
STP1-WD-SWEL-044	STP1-WD-SWEL-030	STP1-WD-SWEL-029	

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

CONDITION REPORTS

11-27377

12-21245

**DOCUMENT REQUEST FOR OCCUPATIONAL RADIATION  
SAFETY INSPECTION**

**PAPERWORK REDUCTION ACT STATEMENT**

This letter does not contain new or amended information collection requirements subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). Existing information collection requirements were approved by the Office of Management and Budget, control number 3150-0011.

**The following items are requested for the  
Occupational Radiation Safety Inspection  
at South Texas Project  
October 22-25, 2012  
Integrated Report 2012005**

Inspection areas are listed in the attachments below.

**Inspection areas are Radiological Hazard Assessment and Exposure Controls (71124.01), Occupational ALARA Planning and Controls (71124.02), and Performance Indicator Verification (71151) for the Occupational and Public Radiation Safety Cornerstones.**

Please provide the requested information on or before **October 12, 2012**.

Please submit this information using the same lettering system as below. For example, all contacts and phone numbers for Inspection Procedure 71124.01 should be in a file/folder titled "1- A," applicable organization charts in file/folder "1- B," etc.

If information is placed on ***ims.certrec.com***, please ensure the inspection exit date entered is at least 30 days later than the onsite inspection dates, so the inspectors will have access to the information while writing the report.

In addition to the corrective action document lists provided for each inspection procedure listed below, please provide updated lists of corrective action documents at the entrance meeting. The dates for these lists should range from the end dates of the original lists to the day of the entrance meeting.

If more than one inspection procedures is to be conducted and the information requests appear to be redundant, there is no need to provide duplicate copies. Enter a note explaining in which file the information can be found.

If you have any questions or comments, please contact **Louis C. Carson II** at (817)200.1221 or [Louis.Carson@nrc.gov](mailto:Louis.Carson@nrc.gov). **Also, Gilbert Guerra will be assisting on this inspection.**

**1. Radiological Hazard Assessment and Exposure Controls (71124.01)**

Date of Last Inspection: **October 2011**

- A. List of contacts and telephone numbers for the Radiation Protection Organization Staff and Technicians
  - B. Applicable organization charts
  - C. Audits, self assessments, and LERs written since date of last inspection, related to this inspection area
  - D. Procedure indexes for the radiation protection procedures
  - E. Please provide specific procedures related to the following areas noted below. Additional Specific Procedures may be requested by number after the inspector reviews the procedure indexes.
    - 1. Radiation Protection Program Description
    - 2. Radiation Protection Conduct of Operations
    - 3. Personnel Dosimetry Program
    - 4. Posting of Radiological Areas
    - 5. High Radiation Area Controls
    - 6. RCA Access Controls and Radworker Instructions
    - 7. Conduct of Radiological Surveys
    - 8. Radioactive Source Inventory and Control
    - 9. Declared Pregnant Worker Program
  - F. List of corrective action documents (including corporate and subtiered systems) since date of last inspection, **October 2011**
    - a. Initiated by the radiation protection organization
    - b. Assigned to the radiation protection organization
- NOTE: The lists should indicate the significance level of each issue and the search criteria used. Please provide documents which are "searchable" so that the inspector can perform word searches.
- If not covered above, a summary of corrective action documents since date of last inspection involving unmonitored releases, unplanned releases, or releases in which any dose limit or administrative dose limit was exceeded (for Public Radiation Safety Performance Indicator verification in accordance with IP 71151)
- G. List of radiologically significant work activities scheduled to be conducted during the inspection period (If the inspection is scheduled during an outage, please also include a list of work activities greater than 1 rem, scheduled during the outage with the dose estimate for the work activity.)
  - H. List of active radiation work permits
  - I. Radioactive source inventory list

**2. Occupational ALARA Planning and Controls (71124.02)**

Date of Last Inspection **October 2011**

- A. List of contacts and telephone numbers for ALARA program personnel
- B. Applicable organization charts
- C. Copies of audits, self-assessments, and LERs, written since date of last inspection, focusing on ALARA
- D. Procedure index for ALARA Program
- E. Please provide specific procedures related to the following areas noted below. Additional Specific Procedures may be requested by number after the inspector reviews the procedure indexes.
  - 1. ALARA Program
  - 2. ALARA Committee
  - 3. Radiation Work Permit Preparation
- F. A summary list of corrective action documents (including corporate and subtiered systems) written since date of last inspection, related to the ALARA program. In addition to ALARA, the summary should also address Radiation Work Permit violations, Electronic Dosimeter Alarms, and RWP Dose Estimates

NOTE: The lists should indicate the significance level of each issue and the search criteria used. Please provide documents which are "searchable."

- G. List of work activities greater than 1 rem, since date of last inspection. Include original dose estimate and actual dose.
- H. Site dose totals and 3-year rolling averages for the past 3 years (based on dose of record)
- I. Outline of source term reduction strategy
- J. Please provide the Annual STP ALARA Report for 2011 and the last post Refueling Outage Report (**Unit-1**)



From October 15, 2011, to October 26, 2012, reactor inspectors from the Nuclear Regulatory Commission's (NRC) Region IV office will perform the baseline inservice inspection at South Texas Project Unit 2, using NRC Inspection Procedure 71111.08, "Inservice Inspection Activities." Experience has shown that this inspection is a resource intensive inspection both for the NRC inspectors and your staff. In order to minimize the impact to your onsite resources and to ensure a productive inspection, we have enclosed a request for documents needed for this inspection. These documents have been divided into two groups. The first group (Section A of the enclosure), due by September 21, 2012, identifies information to be provided prior to the inspection to ensure that the inspectors are adequately prepared. The second group (Section B of the enclosure) identifies the information the inspectors will need upon arrival at the site. It is important that all of these documents are up to date and complete in order to minimize the number of additional documents requested during the preparation and/or the onsite portions of the inspection.

We have discussed the schedule for these inspection activities with your staff and understand that our regulatory contact for this inspection will be Ms. Robyn Savage of your licensing organization. Our inspection dates are subject to change based on your updated schedule of outage activities. If there are any questions about this inspection or the material requested, please contact the lead inspector Jim Drake at (817) 200-1558 (James.Drake@nrc.gov).

This letter does not contain new or amended information collection requirements subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). Existing information collection requirements were approved by the Office of Management and Budget, Control Number 3150-0011. The NRC may not conduct or sponsor, and a person is not required to respond to, a request for information or an information collection requirement unless the requesting document displays a currently valid Office of Management and Budget control number.

## INSERVICE INSPECTION DOCUMENT REQUEST

Inspection Dates: October 15, 2012, through October 26, 2012 (onsite dates)

Inspection Procedures: IP 71111.08, "Inservice Inspection (ISI) Activities"  
TI 2515/172, "Reactor Coolant System Dissimilar Metal Butt Welds"

Inspectors: James Drake, Senior Reactor Inspector (Lead Inspector - ISI)  
Ray Azua, Senior Project Engineer

### A. Information Requested for the In-Office Preparation Week

The following information should be sent to the Region IV office in hard copy or electronic format (ims.certrec.com preferred), in care of James Drake, by September 21, 2012, to facilitate the selection of specific items that will be reviewed during the onsite inspection week. The inspectors will select specific items from the information requested below and then request from your staff additional documents needed during the onsite inspection week (Section B of this enclosure). We ask that the specific items selected from the lists be available and ready for review on the first day of inspection. Please provide requested documentation electronically if possible. If requested documents are large and only hard copy formats are available, please inform the inspector(s), and provide subject documentation during the first day of the onsite inspection. If you have any questions regarding this information request, please call the inspector as soon as possible.

#### A.1 ISI/Welding Programs and Schedule Information

- a) A detailed schedule (including preliminary dates) of:
- i) Nondestructive examinations planned for Class 1 & 2 systems and containment, performed as part of your ASME Section XI, risk informed (if applicable), and augmented inservice inspection programs during the upcoming outage.  
  
Provide a status summary of the nondestructive examination inspection activities vs. the required inspection period percentages for this interval by category per ASME Section XI, IWX-2400. Do not provide separately if other documentation requested contains this information.
  - ii) Examinations planned for Alloy 82/182/600 components that are not included in the Section XI scope (If applicable).
  - iii) Examinations planned as part of your boric acid corrosion control program (Mode 3 walkdowns, bolted connection walkdowns, etc.).

- iv) Welding activities that are scheduled to be completed during the upcoming outage (ASME Class 1, 2, or 3 structures, systems, or components).
- b) A copy of ASME Section XI Code Relief Requests and associated NRC safety evaluations applicable to the examinations identified above.
- c) A list of nondestructive examination reports (ultrasonic, radiography, magnetic particle, dye penetrant, Visual VT-1, VT-2, and VT-3), which have identified relevant conditions on Code Class 1 & 2 systems since the beginning of the last refueling outage. This should include the previous Section XI pressure test(s) conducted during start up and any evaluations associated with the results of the pressure tests. Also, include in the list the nondestructive examination reports with relevant conditions in the reactor pressure vessel head penetration nozzles that have been accepted for continued service. The list of nondestructive examination reports should include a brief description of the structures, systems, or components where the relevant condition was identified.
- d) A list with a brief description (e.g., system, material, pipe size, weld number, and nondestructive examinations performed) of the welds in Code Class 1 and 2 systems which have been fabricated due to component repair/replacement activities since the beginning of the last refueling outage, or are planned to be fabricated this refueling outage.
- e) If reactor vessel weld examinations required by the ASME Code are scheduled to occur during the upcoming outage, provide a detailed description of the welds to be examined and the extent of the planned examination. Please also provide reference numbers for applicable procedures that will be used to conduct these examinations.
- f) Copy of any 10 CFR Part 21 reports applicable to your structures, systems, or components within the scope of Section XI of the ASME Code that have been identified since the beginning of the last refueling outage.
- g) A list of any temporary noncode repairs in service (e.g., pinhole leaks).
- h) Please provide copies of the most recent self-assessments for the inservice inspection, welding, and Alloy 600 programs.

## A.2 Reactor Pressure Vessel Head

- a) Per telephone calls with your staff, the NRC understands that there are no scheduled inspections of the reactor vessel head for this outage.

### A.3 Boric Acid Corrosion Control Program

- a) Copy of the procedures that govern the scope, equipment and implementation of the inspections required to identify boric acid leakage and the procedures for boric acid leakage/corrosion evaluation.
- b) Please provide a list of leaks (including Code class of the components) that have been identified since the last refueling outage and associated corrective action documentation. If during the last cycle, the unit was shutdown, please provide documentation of containment walkdown inspections performed as part of the boric acid corrosion control program.
- c) Please provide a copy of the most recent self-assessment performed for the boric acid corrosion control program.

### A.4 Steam Generator Tube Inspections

- a) Per telephone calls with your staff, the NRC understands that there are no scheduled inspections of the steam generators for this outage.
- b) Please provide a copy of your steam generator inservice inspection program and plan. Please include a copy of the operational assessment from last outage and a copy of the following documents as they become available:
  - i) Degradation assessment
  - ii) Condition monitoring assessment
- c) If you are planning on modifying your Technical Specifications such that they are consistent with Technical Specification Task Force Traveler TSTF-449, "Steam Generator Tube Integrity," please provide copies of your correspondence with the NRC regarding deviations from the standard technical specifications.
- d) Copy of steam generator history documentation.
- e) Identify and quantify any steam generator tube leakage experienced during the previous operating cycle. Also provide documentation identifying which steam generator was leaking and corrective actions completed or planned for this condition (if applicable).
- f) Provide past history of the condition and issues pertaining to the secondary side of the steam generators (including items such as loose parts, fouling, top of tube sheet condition, crud removal amounts, etc.)
- g) Provide copies of your most recent self-assessments of the steam generator monitoring, loose parts monitoring, and secondary side water chemistry control programs.

A.5 Additional Information Related to All Inservice Inspection Activities

- a) A list with a brief description of inservice inspection, boric acid corrosion control program, and steam generator tube inspection related issues (e.g., condition reports) entered into your corrective action program since the beginning of the last refueling outage for Unit 1. For example, a list based upon data base searches using key words related to piping or steam generator tube degradation such as: inservice inspection, ASME Code, Section XI, NDE, cracks, wear, thinning, leakage, rust, corrosion, boric acid, or errors in piping/steam generator tube examinations.
- b) Please provide names and phone numbers for the following program leads:  
  
Inservice inspection (examination, planning)  
Containment exams  
Reactor pressure vessel head exams  
Snubbers and supports  
Repair and replacement program  
Licensing  
Site welding engineer  
Boric acid corrosion control program

B. Information to be Provided Onsite to the Inspector(s) at the Entrance Meeting (October 15, 2012):

B.1 Inservice Inspection / Welding Programs and Schedule Information

- a) Updated schedules for inservice inspection/nondestructive examination activities, including planned welding activities and schedule showing contingency repair plans, if available.
- b) For ASME Code Class 1 and 2 welds selected by the inspector from the lists provided from section A of this enclosure, please provide copies of the following documentation for each subject weld:
  - i) Weld data sheet (traveler)
  - ii) Weld configuration and system location
  - iii) Applicable Code Edition and Addenda for weldment
  - iv) Applicable Code Edition and Addenda for welding procedures
  - v) Applicable weld procedures used to fabricate the welds
  - vi) Copies of procedure qualification records supporting the weld procedures from B.1.b.v

- vii) Copies of mechanical test reports identified in the procedure qualification records above
  - viii) Copies of the nonconformance reports for the selected welds (if applicable)
  - ix) Radiographs of the selected welds and access to equipment to allow viewing radiographs (if radiographic testing was performed)
  - x) Copies of the preservice examination records for the selected welds
  - xi) Copies of welder performance qualifications records applicable to the selected welds, including documentation that welder maintained proficiency in the applicable welding processes specified in the weld procedures (at least 6 months prior to the date of subject work)
  - xii) Copies of nondestructive examination personnel qualifications (visual inspection, penetrant testing, ultrasonic testing, radiographic testing), as applicable
- c) For the inservice inspection related corrective action issues selected by the inspectors from Section A of this enclosure, provide a copy of the corrective actions and supporting documentation.
  - d) For the nondestructive examination reports with relevant conditions on Code Class 1 and 2 systems selected by the inspectors from Section A above, provide a copy of the examination records, examiner qualification records, and associated corrective action documents.
  - e) A copy of (or ready access to) most current revision of the inservice inspection program manual and plan for the current Interval.
  - f) For the nondestructive examinations selected by the inspectors from section A of this enclosure, provide a copy of the nondestructive examination procedures used to perform the examinations (including calibration and flaw characterization/sizing procedures). For ultrasonic examination procedures qualified in accordance with ASME Section XI, Appendix VIII, provide documentation supporting the procedure qualification (e.g., the EPRI performance demonstration qualification summary sheets). Also, include qualification documentation of the specific equipment to be used (e.g., ultrasonic unit, cables, and transducers including serial numbers) and nondestructive examination personnel qualification records.

## B.2 Reactor Pressure Vessel Head

- a) Copy of nondestructive examination reports from the last reactor pressure vessel head examination.

- b) Provide a copy of the updated calculation of effective degradation years for the reactor pressure vessel head susceptibility ranking.

B.3 Boric Acid Corrosion Control Program

- a) Please provide boric acid walkdown inspection results, an updated list of boric acid leaks identified so far this outage, associated corrective action documentation, and overall status of planned boric acid inspections.
- b) Please provide any engineering evaluations completed for boric acid leaks identified since the end of the last refueling outage. Please include a status of corrective actions to repair and/or clean these boric acid leaks. Please identify specifically which known leaks, if any, have remained in service or will remain in service as active leaks.

B.4 Steam Generator Tube Inspections

- a) No additional information required.

B.5 Codes and Standards

- a) Ready access to (i.e., copies provided to the inspector(s) for use during the inspection at the onsite inspection location, or room number and location where available):
  - i) Applicable Editions of the ASME Code (Sections V, IX, and XI) for the inservice inspection program and the repair/replacement program
  - ii) EPRI and industry standards referenced in the procedures used to perform the steam generator tube eddy current examination

Inspector Contact Information:

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