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

August 8, 2018

Mr. G. T. Powell
Interim President, 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 05000498/2018002 AND 0500499/2018002 AND INDEPENDENT SPENT FUEL STORAGE INSTALLATION INSPECTION REPORT 07201041/2018001

Dear Mr. Powell:

On June 30, 2018, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your South Texas Project Electric Generating Station Units 1 and 2. On July 26, 2018, the NRC inspectors discussed the results of this inspection with you and other members of your staff. The results of this inspection are documented in the enclosed report.

No NRC-identified or self-revealing findings were identified during this inspection.

However, inspectors documented a licensee-identified violation which was determined to be of very low safety significance in this report. The NRC is treating this violation as non-cited violation (NCV) consistent with Section 2.3.2 of the Enforcement Policy

If you contest the violation or significance of the NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region IV; the Director, Office of Enforcement; and the NRC resident inspector at the South Texas Project.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at http://www.nrc.gov/reading-rm/adams.html and at the NRC Public Document Room in accordance with 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

***/RA/***

Nicholas H. Taylor, Branch Chief
Project Branch B
Division of Reactor Projects

Docket Nos. 50-498; 50-499, and 07201041
License Nos. NPF-76 and NPF-80

Enclosure:
Inspection Report 05000498/2018002,
05000499/2018002, and 07201041/2018001
w/Attachments:
1. Supplemental Information
2. Initial Request for Information
3. Notification of Inspection and
   Request for Information

**U.S. NUCLEAR REGULATORY COMMISSION**
**Inspection Report**

| | |
|---|---|
| Docket Number(s): | 05000498; 05000499, and 07201041 |
| License Number(s): | NPF-76 and NPF-80 |
| Report Number(s): | 05000498/2018002, 05000499/2018002, and 07201041/2018001 |
| Enterprise Identifier: | I-2018-002-0004 and I-2018-001-0090 |
| Licensee: | STP Nuclear Operating Company |
| Facility: | South Texas Project Electric Generating Station, Units 1 and 2 |
| Location: | Wadsworth, Texas |
| Inspection Dates: | April 1, 2018 to June 30, 2018 |
| Inspectors: | A. Sanchez, Senior Resident Inspector<br>N. Hernandez, Resident Inspector<br>J. Choate, Resident Inspector<br>I. Anchondo, Reactor Inspector<br>L. Brookhart, Senior ISFSI Inspector, FCDB<br>E. Simpson, ISFSI Inspector, FCDB |
| Approved By: | Nicholas H. Taylor<br>Chief, Project Branch B<br>Division of Reactor Projects |

Enclosure

## SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting a quarterly integrated inspection at South Texas Project's Units 1 and 2 in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC's program for overseeing the safe operation of commercial nuclear power reactors. Refer to https://www.nrc.gov/reactors/operating/oversight.html for more information.
Licensee-identified non-cited violations are documented in report section: 71153.

### Additional Tracking Items

| Type | Issue number | Title | Inspection Procedure | Status |
|---|---|---|---|---|
| LER | 05000498/2017001-00 | Unit 1 Failure of a Timing Relay During a Technical Specification Shutdown | 71153 | Closed |

## PLANT STATUS

Unit 1 began the inspection period at rated thermal power. On June 25, 2018, the unit was down powered to approximately 48 percent due to an excessive steam demand event. The excessive steam demand was the result of a failed circuit card that caused both main steam pegging valves to open and admit steam to the deaerator. The valves were isolated and the unit was returned to full power later that night. The unit remained at full power for the remainder of the inspection period.

Unit 2 began the inspection period in refueling outage 2RE19. The unit was returned to full percent thermal power on April 29, 2018, and remained there for the rest of the inspection period.

## INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, "Light-Water Reactor Inspection Program - Operations Phase." The inspectors performed plant status activities described in IMC 2515 Appendix D, "Plant Status" and conducted routine reviews using IP 71152, "Problem Identification and Resolution." The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards.

## REACTOR SAFETY

### 71111.01 - Adverse Weather Protection

Seasonal Extreme Weather (1 Sample)

The inspectors evaluated readiness for seasonal extreme weather conditions prior to the onset of hurricane season.

### 71111.04 - Equipment Alignment

Partial Walkdown (5 Samples)

The inspectors evaluated system configurations during partial walkdowns of the following systems/trains:

(1) Unit 2, train B emergency diesel generator on April 10, 2018.

(2) Unit 1, train B essential cooling water system on May 8, 2018

(3) Unit 2, train B essential chilled water system May 14, 2018

(4) Unit 1, train A and B emergency diesel generators on May 24, 2018

(5) Unit 2, train B emergency diesel generator on May 24, 2018

Complete Walkdown (1 Sample)

The inspectors evaluated system configurations during a complete walkdown of the Unit 2 train C essential cooling water system on June 28, 2018.

71111.05AQ—Fire Protection Annual/Quarterly

Quarterly Inspection (6 Samples)

The inspectors evaluated fire protection program implementation in the following selected areas:

(1) Unit 2, reactor containment building, southwest peripheral area, Room 308SW, Fire Area 63, Fire Zone Z207 on April 3, 2018

(2) Unit 1, technical support center diesel generator, Fire Area 99, Fire Zone Z912 on April 5, 2018

(3) Unit 1, train A essential cooling water pump room, Fire Area 53, Fire Zone Z600 on April 9, 2018

(4) Unit 2, turbine generator building, 55 foot elevation, Room 201A, Fire Area 90, Fire Zone Z712 on April 16, 2018

(5) Unit 2, mechanical auxiliary building, 41 foot elevation (radiological controlled area), Fire Area 03, Fire Zone Z147 on April 27, 2018

(6) Unit 2, essential cooling water intake structure pump rooms A, B and C, Fire Areas 56, 57 and 58, Fire Zones Z603, Z604 and Z605 on May 22, 2018

Annual Inspection (1 Sample)

The inspectors evaluated fire brigade performance for a simulated fire in the Unit 1 main turbine lube oil conditioner skid on January 24, 2018.

The inspectors evaluated fire brigade performance for a simulated fire in the Unit 2 technical support center diesel on May 23, 2018.

71111.07—Heat Sink Performance

Heat Sink (1 Sample)

The inspectors inspected and evaluated the Unit 2, train C emergency diesel generator jacket water and lube oil heat exchangers physical condition on May 23, 2018.

71111.08—Inservice Inspection Activities (1 Sample)

The inspectors evaluated pressurized water reactor non-destructive testing by reviewing the following examinations from March 26 to April 23, 2018:

The inspectors directly observed the following nondestructive examinations:

(1) Ultrasonic Testing
   a) Feedwater System, Weld 18-FW-2029-AA2, Record Number UT-2018-024
   b) Feedwater System, Weld 18-FW-2030-AA2, Record Number UT-2018-025
   c) Reactor Coolant System, Weld 4 on 4-RC-2320-BB1, Record Number UT-2018-025
   d) Reactor Coolant System, Weld 5 on 4-RC-2320-BB1, Record Number UT-2018-030
   e) Reactor Coolant System, Weld 11 on 4-RC-2320-BB1, Record Number UT-2018-022

The inspectors reviewed records for the following nondestructive examinations:

(2) Ultrasonic Testing
   a) Reactor Coolant System, Weld 10 on 4-RC-2320-BB1, Record Number UT-2018-021
   b) Reactor Coolant System, Weld 6-RC-2012-BB1, Record Number UT-2018-055
   c) Reactor Coolant System, Weld 16-RC-2412-NSS, Record Number UT-2018-065

Vessel Upper Head Penetration Inspection Activities

No vessel upper head inspections were performed during 2RE19 outage.

Boric Acid Corrosion Control Inspection Activities

The Inspectors evaluated the licensee's boric acid control program performance.

Steam Generator Tube Inspection Activities

The inspectors reviewed the steam generator (SG) tube eddy current test (ECT) scope and expansion criteria to determine whether these criteria met technical specification requirements, Electric Power Research Institute (EPRI) guidelines, and commitments made to the NRC. The inspectors also reviewed whether the ECT inspection scope included areas of degradations that were known to represent potential ECT test challenges, such as the top of tube sheet, tube support plates (TSP), and U-bends. The inspectors confirmed that no repairs were required at the time of the inspection.

Steam Generator Inspection

The inspectors verified that the number and sizes of SG tube flaws/degradation identified were consistent with the licensee's previous outage operational assessment predictions.

The inspectors verified that steam generator ECT scope and expansion criteria met technical specification requirements.

The inspectors verified that ECT probes and equipment configurations used to acquire data from the SG tubes were qualified to detect the known/expected types of SG tube

degradation in accordance with Appendix H, "Performance Demonstration for Eddy Current Examination," of EPRI Document 1013706.

The inspectors reviewed the licensee's identification of the following tube degradation mechanisms:

- Tube wear at TSP intersections
- Pitting under hardened top of tubesheet sludge deposits

The inspectors verified that the licensee's ECT scope included the new degradation mechanism and fully enveloped the problem, and has taken appropriate corrective actions before plant start-up.

Secondary Side Inspections

The inspectors reviewed secondary side inspection results and verified the licensee took corrective actions in response to the observed degradation.

The inspectors reviewed the licensee's actions in response to a dropped lithium-ion battery that was left in place at the tube bundle U-bend lodged between two tubes (Row 95/Column 119 and Row 96/Column 118). The inspectors reviewed the licensee's loose part and chemical analysis and concluded that all the EPRI and regulatory requirements had been met.

Identification and Resolution of Problems (71111.08-02.05)

The inspectors reviewed 15 condition reports which dealt with inservice inspection activities and found the corrective actions for inservice inspection issues were appropriate.

71111.11—Licensed Operator Requalification Program and Licensed Operator Performance

Operator Requalification (1 Sample)

The inspectors observed and evaluated Unit 2 crew simulator scenario involving a stuck open main steam safety valve, a small break loss-of-coolant event, and a faulted steam generator on June 26, 2018.

Operator Performance (1 Sample)

The inspectors observed and evaluated the performance of Unit 2 licensed control room operators during a period of heightened risk for mid-loop operations on April 17, 2018. The inspectors also observed and evaluated the performance of Unit 2 licensed control room operators during transition into Mode 4 on April 24, 2018.

The inspectors observed and evaluated the performance of Unit 1 licensed control room operators increasing reactor power from 48 percent to 63 percent following an unexpected reactor down power resulting from an excessive steam demand event on June 25, 2018.

71111.12—Maintenance Effectiveness

Routine Maintenance Effectiveness (1 Sample)

The inspectors evaluated the effectiveness of routine maintenance activities associated with the following equipment and/or safety significant functions:

(1) Unit 1, train S solid state protection system power supply failure on May 20, 2018

71111.13—Maintenance Risk Assessments and Emergent Work Control (6 Samples)

The inspectors evaluated the risk assessments for the following planned and emergent work activities:

(1) Unit 1 elevated risk due to planned maintenance on the 345kV North bus and standby transformer 1 on April 30, 2018

(2) Unit 1 elevated risk due to planned train C work week maintenance activities for the week of May 7–13, 2018

(3) Unit 2 elevated risk due to planned maintenance on train B essential chilled water going longer than planned for on May 8–11, 2018

(4) Unit 1 elevated risk due to an unplanned entry into the configuration risk management program for exceeding the train C emergency diesel generator 14 day limited condition for operations due to flood panel modification on May 21, 2018

(5) Unit 1 elevated risk due to an unplanned power supply maintenance for train S solid state protection system power supply replacement on May 22, 2018

(6) Units 1 and 2 elevated risk to unplanned diesel driven fire pump 2 that failed functionality test and the unplanned failure of the emergency transformer the week of June 25, 2018

71111.15—Operability Determinations and Functionality Assessments (4 Samples)

The inspectors evaluated the following operability determinations and functionality assessments:

(1) Unit 2, steam generator C and reactor coolant system integrity following the loss of a camera battery in the secondary side of the steam generator during an engineering inspection on April 18, 2018

(2) Unit 2, nuclear instrumentation, NI-32 following aberrant behavior on April 25, 2018

(3) Unit 1, train C emergency diesel generator following leakage through watertight flood panels on June 1, 2018

(4) Unit 2, hot leg B narrow range temperature element resistance thermocouple detector exceeding drift acceptance criteria on April 25, 2018

71111.18—Plant Modifications (2 Samples)

The inspectors evaluated the following temporary or permanent modifications:

(1) Unit 2, spent fuel pool cooling pump 2B temporary power supply on April 6, 2018

(2) Unit 1, train C emergency diesel generator flood panel permanent modification to seal them completely on June 25, 2018

71111.19—Post Maintenance Testing (6 Samples)

The inspectors evaluated the following post maintenance tests:

(1) Unit 2, train C essential cooling water pump following planned maintenance on April 8, 2018

(2) Unit 2, turbine-driven auxiliary feedwater pump following maintenance during refueling outage 2RE19 on April 25, 2018

(3) Unit 1, loop 1 delta-T and T-average channel following emergent circuit card replacement on April 26, 2018

(4) Unit 2, train A 125Vdc battery following the emergent ground circuit card failure of battery charger 2 on May 5, 2018

(5) Unit 2, train C emergency diesel generator following six year overhaul on May 25, 2018

(6) Diesel-driven fire pump 2 following maintenance on June 29, 2018

71111.20—Refueling and Other Outage Activities (1 sample)

The inspectors evaluated refueling outage 2RE19 activities from April 1–27, 2018. The inspectors completed inspection procedure Sections 03.01.d, and 03.01.e. The Unit 2 refueling outage 2RE19 began March 24, 2018.

71111.22—Surveillance Testing

The inspectors evaluated the following surveillance tests:

Routine (3 Samples)

(1) 0PSP03-DG-0016, Unit 2, train B emergency diesel generator twenty-four hour load test on April 10, 2018

(2) 0PSP03-RS-0001, Unit 1, control rod surveillance test on May 12, 2018

(3) 0PMP08-MS-0557, Unit 2, main steam pressure transmitter, PT506, calibration on June 20, 2018

Containment Isolation Valve (1 Sample)

(1) Unit 2, train A high head safety injection discharge local leak rate test on April 9, 2018

71114.06—Drill Evaluation

Emergency Planning Drill (1 Sample)

The inspectors evaluated the licensee's emergency response drill involving failed fuel, steam generator tube rupture and a stuck open main steam isolation valve which resulted in a general emergency on May 1, 2018.

**OTHER ACTIVITIES – BASELINE**

71151—Performance Indicator Verification (6 Samples)

The inspectors verified licensee performance indicators submittals listed below:

(1) MS05: Safety System Functional Failures (SSFFs) Sample (04/01/2017-03/31/2018)

(2) BI01: Reactor Coolant System (RCS) Specific Activity Sample (04/01/2017-03/31/2018)

(3) BI02: RCS Leak Rate Sample (04/01/2017- 03/31/2018)

71152—Problem Identification and Resolution

Semiannual Trend Review (1 Sample)

The inspectors reviewed the licensee's corrective action program for trends that might be indicative of a more significant safety issue.

Annual Follow-up of Selected Issues (1 Sample)

The inspectors reviewed the licensee's implementation of its corrective action program related to the following issues:

(1) Auxiliary open loop cooling system pipe break, Condition Report 17-12892. Inspectors reviewed the apparent cause investigation, operability evaluation, and interviewed licensee personnel.

71153—Follow-up of Events and Notices of Enforcement Discretion

Licensee Event Reports (1 Sample)

The inspectors evaluated the following licensee event reports which can be accessed at https://lersearch.inl.gov/LERSearchCriteria.aspx:

(1) Licensee Event Report (LER) 05000498/2017-001-00, "Unit 1 Failure of a Timing Relay During a Technical Specification Shutdown," on May 11, 2017

Personnel Performance (1 Sample)

The inspectors evaluated operator performance for the failure of a circuit card that resulted in an excessive steam demand event that resulted in Unit 1 reactor down power to approximately 48 percent power on June 25, 2018.

## OTHER ACTIVITIES – TEMPORARY INSTRUCTIONS, INFREQUENT AND ABNORMAL

60854—Preoperational Testing of an Independent Spent Fuel Storage Inspection (ISFSI)

An ISFSI inspection was conducted at the STP on February 5–8 and 19–23, 2018, by Region IV, Division of Nuclear Material Safety inspectors. Subsequently, an in-office review of additional documentation related to the licensee's ISFSI preparations was performed through May 2018. The purpose of the inspections was to observe and evaluate the licensee's pre-operational demonstrations required by the Holtec HI-STORM FW Certificate of Compliance (COC), which STP had selected to use under their general Part 72 license. The demonstrations were conducted in accordance with the conditions and requirements specified in the Holtec HI-STORM FW Storage System COC 1032 Amendment 2 and HI-STORM FW Final Safety Analysis Report (FSAR) Revision 5.

The License Condition No. 9 of the COC listed pre-operational testing and training exercises required to be completed by a general licensee. During the February inspection dates the NRC inspectors observed STP perform the following demonstrations: Multi-Purpose Canister (MPC) welding, Non-Destructive Examination (NDE) inspections, pressure testing, draining, and moisture removal using Forced Helium Dehydration (FHD), helium backfilling, and flooding the MPC cavity for unloading operations. The licensee had successfully completed the above listed operations and fully demonstrated that the procedures, programs, and training related to those dry cask storage operations had been successfully integrated into their site operations. The site still has a number of demonstrations that are required to be completed before the licensee can utilize the HI-STORM FW casks. Those demonstrations are projected to be performed in the winter 2018.

The ISFSI activities specifically reviewed during the on-site inspections and the subsequent in-office review included:

(1) Evaluated and observed dry run operations, listed above, associated with License Condition No. 9.

(2) Reviewed welder qualification program, welder performance qualifications, welding procedure specifications, and welding procedure qualification records.

(3) Reviewed NDE program procedure, NDE personnel certification records, the qualification program for visual test and liquid penetrant exams, liquid penetrant procedure, visual testing procedure, and helium leak testing procedure.

(4) Review Certified Material Test reports for liquid penetrant chemicals, welder filler metals, and helium purity certification records.

(5) Reviewed the licensee's calibration program to ensure the following devices were adequately calibrated in accordance with the licensee's quality assurance program:

hydrogen monitoring equipment, flow rate meters, canister pressure gauges, temperature gages, moisture gages for FHD, and pressure relief valves.

(6) Reviewed the licensee's training qualification program for workers conducting activities on Important to Safety components.

(7) Evaluated and observed licensee's implementation of hydrogen monitoring during welding operations.

(8) Evaluated and observed licensee's radiation protection implementation during the dry run observations.

(9) Evaluated and observed licensee's implementation of foreign material exclusion process during welding and fluid movement demonstrations.

(10) Reviewed licensee's procedures to process the MPC regarding alternate cooling, pressure testing, drying, backfilling, canister gas sampling, and re-flooding.

The inspectors did not identify any issues of concerns requiring documentation.

## INSPECTION RESULTS

| Observations | 71152 – Semiannual Trend Review |
|---|---|
| The inspectors identified a negative trend in the area of interdepartmental teamwork impacting station performance. Specifically, while inspecting serval different issues at the site, the inspectors concluded that there was a common theme of a lack of communication and coordination among the departments to resolve issues in a timely way. Some examples include:<br><br>• A 10 CFR 50.65(a)(4) violation (Condition Report 18-4707) for the failure to perform a risk assessment for planned maintenance (lack of coordination) that could have resulted in a reactor shutdown and was documented in NRC Inspection Report 05000498/2018001<br><br>• A 10 CFR Part 50, Appendix B, Criterion XVI violation (Condition Report 18-4708) for the failure to promptly identify and correct a condition adverse to quality associated with Unit 2 reactor containment fan cooler backdraft damper degradation (lack of coordination between, engineering, operations and maintenance) and was documented in NRC Inspection Report 05000498/2018001<br><br>• Lack of coordination and alignment on Unit 1, train C 125Vdc battery ventilation heater troubleshooting activities and the operability determination (Condition Reports 18-1931 and 18-6409)<br><br>• Lack of coordination, and communications for breaker relay calibrations on protected train during 345kV north bus and standby transformer 1 outage (Condition Report 18-6019)<br><br>The licensee has acknowledged the trend and entered the NRC identified trend into the corrective action program as Condition Report 18-6213. | |
| Corrective Action Reference: Condition Report 18-6213 | |

| Licensee-Identified Non-Cited Violation | 71153 – Licensee Event Reports |
|---|---|
| This violation of very low safety significance was identified by the licensee, has been entered into the licensee's corrective action program and is being treated as a Non-Cited Violation, consistent with Section 2.3.2 of the Enforcement Policy. | |
| Violation: Technical Specification 6.8.1.a requires that, "Written procedures shall be established, implemented, and maintained covering the activities referenced below: The applicable procedures recommended in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978." Section 9.a, "Procedures for Performing Maintenance," states, in part, 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 licensee established Procedure COM-0001, "Conduct of Maintenance," to guide maintenance craft on what to do | |

if a condition or issue arises during a maintenance activity. Specifically, Section 1.4 "Supervisor Responsibilities," states, in part, that, "If we cannot find the problem with the component or piece of equipment, the issue must be raised to the Division Manager/General Supervisor BEFORE we close the work control document AND return the equipment to operations."

Contrary to the above, on March 10, 2017, Unit 1 E1B undervoltage relay was found outside the technical specification acceptance criteria, and was retested until the relay it was back in tolerance and placed back into service (declared operable) instead of raising the issue up to the division manager for further evaluation. The issue was discussed with the electrical maintenance supervisor and the findings were documented in Condition Report 17-12616. The relay was declared operable and placed back into service. Subsequently, after review of the condition report, approximately 99 hours after the relay was declared inoperable, the relay was replaced, and the system declared operable.

Significance/Severity Level: The inspectors determined the performance deficiency was more than minor because it adversely affected the equipment performance attribute of the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the undervoltage relay was outside its tolerance and placed back into service without correcting the cause of being outside its tolerance. The inspectors assessed the significance of the finding using Exhibit 2, "Mitigating Systems Screening Questions," of Inspection Manual Chapter 0609, Appendix A, "Significance Determination Process (SDP) for Findings At-Power," issued June 19, 2012, and determined this finding is not a deficiency affecting the design or qualification of a mitigating structure, system, and component that maintained its operability or functionality; the finding does not represent a loss of system and/or function; the finding does not represent an actual loss of function of at least a single train for greater than its Technical Specification-allowed outage time; and the finding does not represent an actual loss of function of one or more non-Technical Specification trains of equipment designated as high safety-significant. Therefore, the inspectors determined the finding was of very low safety significance (Green).

Corrective Action Reference: Condition Report 17-12616

| Observations | 71153 – Follow-up of Events |
|---|---|

Unit 1 Excessive Steam Demand Event on June 25, 2018

<u>Event</u>

On June 25, at 2:12 a.m., Unit 1 experienced a transient when the main steam pegging valves opened and pressurized the deaerator (DA) to the point that caused the relief to open (the DA relief valve set point is 235 psig and operated as designed). The DA supplies net positive suction to the feedwater booster pumps and is pressurized to approximately 168 psig at full power. Extraction steam is the normal source of pressurization. During startup, the pressurization of the DA is supplied by the main steam pegging valves. According to the main equipment database, the pegging valves serve no safety function and would fail closed in the event of a loss of instrument air, a loss of extraction steam or reactor trip.

Operators took immediate action to reduce reactor power, and observed a peak thermal power of 102.9 percent. Operations entered the excessive steam demand off-normal procedure and stabilized power at approximately 62 percent power by securing the main steam pegging valves using the switch on the main control board, thus isolating the pressurization source and ending the excessive steam demand event. The quadrant power tilt ratio (QPTR) reached 1.025, exceeding the technical specification limit of 1.02 and the licensee was required by technical specifications to reduce the HI power flux trip to 100 percent from 109 percent within 4 hours or reduce power to below 50 percent power. Due to lack of instrumentation and control resources, operators instead reduced power to approximately 49 percent power and exited the mode of applicability for technical specification 3.2.4. The only other component that failed was one of the condenser steam dumps (PV-7485). The valve was found stuck at 20 percent open due to a broken air line, and operators manually isolated the failed steam dump valve.

The event was run on the simulator and no significant or complicating anomalies were identified in operator or plant performance during the event. Engineering walked the secondary side of the plant and did not identify any other plant issues. The licensee decided to increase reactor power following tagging the main steam pegging valves closed. Reactor engineering provided a reactivity plan and briefed the control room operators. The inspectors observed the activities and power ascension of power from 48 percent to 63 percent power and had no concerns with operator performance. The reactor was restored to 100 percent power on June 25, 2018. Troubleshooting on the controlling channel for the pegging valve discovered a circuit card with a failed high output (which would have driven the pegging valves full open). The card was replaced and the pegging valves have been subsequently been returned to the “auto” position with no issues.

Engineering concluded that the card failure was random. Engineering is evaluating their classification of important and critical circuit cards in their protective and trip cabinets (7300 system) and, if necessary, will make corrections or make design changes to make the systems more fault tolerant. The inspectors did not identify any performance deficiencies.

Personnel Performance Assessment

Reactor operator performance was timely and appropriate and operators operated the plant in a manner that preserved reactor safety for the excessive steam demand.

Corrective Action Reference: Condition Report 18-7925

**EXIT MEETINGS AND DEBRIEFS**

On July 26, 2018, the inspector presented the quarterly resident inspector, inspection results to G. Powell, and other members of the licensee staff.

On April 23, 2018, the inspector presented the in-service inspection results to Mr. G. Powell, President and CEO, and other members of the licensee staff.

On May 23, 2018, the inspectors presented the results from the pre-operational ISFSI inspections to Mr. M. Glover, Acting General Manager of Projects, and other members of the licensee staff. Licensee personnel acknowledged the information presented. In all three exit meetings, the inspectors confirmed that proprietary information was controlled to protect from public disclosure.

**DOCUMENTS REVIEWED**

**71111.04Q - Partial Equipment Alignment**

Condition Reports (CRs)

18-6254 18-6257

Procedures

| Number | Title | Revision |
|---|---|---|
| 0POP02EW-0001 | Essential Cooling Water Operations | 75 |

**71111.04S - Complete Equipment Alignment**

Condition Reports (CRs)

18-0110 18-2374 18-5810

Drawings

| Number | Title | Revision |
|---|---|---|
| 5R289F05038 | Essential Cooling Water System Train 2C | 20 |
| 5R289F05039 | Essential Cooling Water System | 16 |
| 9-E-PKAC-01 | 4.16 KV Class 1E Switchgear E2C | 9 |

Procedures

| Number | Title | Revision |
|---|---|---|
| 0POP02-EQ-0001 | Essential Cooling Water System | 75 |

**71111.05A - Annual Fire Drill**

Procedures

| Number | Title | Revision |
|---|---|---|
| 0PGP03-ZF-0011 | STPEGS Fire Brigade | 18 |

Fire Drill No.

18-01-02

**71111.05Q – Fire Protection Quarterly**

Procedures

| Number | Title | Revision |
|---|---|---|
| 0RCB63-FP-0207 | Fire Preplan Reactor Containment Building SW Peripheral Area | 3 |
| 1ECW53-FP-0600 | Fire Preplan Essential Cooling Water Intake Structure Pump Room Train A | 5 |
| 0TGB90-FP-0712 | Fire Preplan Turbine Generator Building Northeast 55' Elevation | 5 |
| 0TSC99-FP-0912 | Fire Preplan Technical Support Center Diesel Generator | 4 |

**71111.07A - Heat Sink**

Coating Permit

34686157

Procedures

| Number | Title | Revision |
|---|---|---|
| 0PGP03-ZE-0080 | Essential Cooling Water System Reliability Program | 2 |

Work Authorization Number (WAN)

501777 501778

**71111.08 – Inservice Inspection Activities**

Condition Reports (CRs)

| | | | | |
|---|---|---|---|---|
| 05-01321 | 16-12322 | 16-12668 | 16-12979 | 16-13429 |
| 16-13916 | 16-13977 | 17-11607 | 17-14164 | 17-15237 |
| 17-17005 | 17-20673 | 17-20674 | 17-21429 | 18-04320 |

Procedures

| Number | Title | Revision/Date |
|---|---|---|
| PDI-UT-1 | Generic Procedure for the Ultrasonic Examination of Ferritic Pipe Wells | G |
| PDI-UT-2 | Generic Procedure for the Ultrasonic Examination of Austenitic Pipe Wells | H |
| PDI-UT-8 | Similar and Dissimilar Metal Welds | H |

Procedures

| Number | Title | Revision/Date |
|---|---|---|
| 0PSP11-CS-0006 | Containment Spray System Rain 1A/2A – Containment System Leakage Test | 18 |
| 0PGP03-ZE-0133 | Boric Acid Corrosion Control Program | 11 |
| SG-SGMP-13-22 | Steam Generator Cycle 16 Condition Monitoring and Cycles 17, 18 and 19 Operational Assessment | 1 |
| SG-SGMP-13-3 | South Texas Project Electric Generating Station 2R16 Steam Generator Degradation Assessment | 0 |
| LTR-CODE-14-61 | 2RE16 Secondary Side Integrity Plan | 0 |
| MRS-GEN-1127 | Guideline for Steam Generator Eddy Current Data Quality Requirements | 12 |
| SG-SGMP-18-6 | Steam Generator Cycle 19 Condition Monitoring and Cycles 20,21, and 22 Preliminary Operational Assessment | 0 |
| EVAL-18-12 | South Texas Project Electric Generating Station, Unit 2 Steam Generator Secondary Side Lithium-ion Battery Loose Part | 0 |
| LTR-SGMP-18-13 | Evaluation of Lithium-Ion Battery in the Secondary Side of the South Texas Project Electric Generating Station, Unit 2 Steam Generator – Spring 2018 Refueling Outage (2RE19) | April 17, 2018 |
| TR-CECO-18-004 | Chemistry Evaluation of the Lithium-Ion Battery Loose Part in the South Texas Project Electric Generating Station, Unit 2 Steam Generator C | April 17, 2018 |
| OPEP10-ZA-004 | General Ultrasonic Examination | 7 |
| SG-SGMP-17-31 | South Texas Project Electric Generating Station 2RE19 Steam Generator Degradation Assessment | 0 |
| | Inservice Testing Program Unit 1 and 2 Pump and Value – Inservice Test Plan Third 10-Year Interval | 16 |
| | Examination Plan for 2E19 ASME Section XI Inservice Inspection Programs at South Texas Project Electric Generating Station, Unit 2 | March 19, 2018 |

**71111.11Q – Licensed Operator Requalification**

Procedures

| Number | Title | Revision |
|---|---|---|
| 0POP03-ZG-0009 | Mid-Loop Operations | 65 |

**71111.12 – Maintenance Effectiveness**

Condition Reports (CRs)

18-6680

Work Authorization Number (WAN)

589068

**71111.13 – Maintenance Risk Assessments and Emergent Work Control**

Condition Reports (CRs)

18-6807

Procedures

| Number | Title | Revision |
|---|---|---|
| 0PGP03-ZG-RMTS | Risk-Managed Technical Specifications Program | 2 |
| 0POP01-ZO-0006 | Risk Managed Actions | 24 |
| 0PGP03-ZA-0091 | Configuration Risk Management Program | 14 |
| 0PGP03-ZO-0055 | Protected Components | 11 |
| 0POP07-SP-0006S | SSPS Logic Train S Removal from Service and Restoration (Mode 1-4) | 1 |

Work Authorization Number (WAN)

523443 589068

Work Activity Risk (WAR)

2774

**71111.15 – Operability Evaluations**

Condition Reports (CRs)

18-5652

**71111.18 – Modifications**

Condition Reports (CRs)

18-4610 18-4611

Procedures

| Number | Title | Revision |
|---|---|---|
| 0PMP09-PM-00C | Temporary Configuration Changes to Support Class 1E Train C MCC Outages | 1 |

Work Authorization Number (WAN)

579417 560095

**71111.19 – Post Maintenance Testing**

Condition Reports (CRs)

18-6928

Procedures

| Number | Title | Revision |
|---|---|---|
| 0PSP03-SP-0019D | Turbine Driven Auxiliary Feedwater Actuation and Response Time Test | 16 |
| 0POP07-AM-001 | AMSAC Actuation Test Trains A, B, C, & D | 3 |
| 0PSP03-AF-0007 | Auxiliary Feedwater Pump 12(24) Inservice Test | 51 |
| 0PEP07-AF-0001 | Auxiliary Feedwater Turbine Overspeed Trip Test | 11 |
| 0POP02-DG-0003 | Emergency Diesel Generator 13(23) | 69 |
| 0OOI01-OL-0005 | Operations Logs – Diesel Generator | 16 |

**71111.20 – Outage**

Procedures

| Number | Title | Revision |
|---|---|---|
| 0POP03-ZG-0010 | Refueling Operations | 72 |
| 0POP03-ZG-0009 | Mid-Loop Operation | 83 |
| 0POP03-ZG-0001 | Plant Heatup | 72 |
| 0POP08-FH-0009 | Core Refueling | 48 |

Miscellaneous

| Title | Date |
|---|---|
| STP 2RE19/U2C20 Low Power Physics Tests Summary | April 2018 |

**71111.22 – Surveillance**

Condition Reports (CRs)

| | | |
|---|---|---|
| 12-22362 | 18-02240 | 18-6928 |

Procedures

| Number | Title | Revision |
|---|---|---|
| 0PMP08-MS-0557 | Steam Generator Header Pressure to Steam Dump Control Calibration | 6 |
| 0PSP03-DG-0016 | Standby Diesel 11(21) Twenty-Four Hour Load Test | 45 |

Work Authorization Number (WAN)

455544

**4OA5.1 Other Activities (IP 60854)**

Condition Reports (CRs)

| | | | | |
|---|---|---|---|---|
| 18-51 | 18-1461 | 18-1609 | 18-1621 | 18-1625 |
| 18-1651 | 18-1738 | | | |

Design Basis Documents Drawings

| Number | Title | Revision |
|---|---|---|
| ISFSI FSAR | HI-STORM FW ISFSI Final Safety Analysis Report | 5 |
| COC 1032 | COC and Technical Specifications for HI-STORM FW | Amendment 2 |

Procedures

| Number | Title | Revision |
|---|---|---|
| GQP 9.0 | PCI Training, Qualification, Examination, and Certification of NDE Personnel | 18 |
| GQP 9.1 | PCI Training, Qualification, Examination, and Certification of Inspection and Testing Personnel | 6 |
| GQP 9.2 | PCI High Temperature Liquid Penetrant Examination and Acceptance Standards for Welds | 9 |
| GQP 9.6 | PCI Visual Examination of Welds | 17 |
| WCP-2 | Welder/Welding Operator Performance Qualification | 0 |
| MSLT-MPC Holtec 3665 | LTS Helium Mass Spectrometer Leak Test Procedure MPC | 0 |
| 0PRP07-ZR-0036 | Dry Cask Storage of Spent Fuel | 0 |

Procedures

| Number | Title | Revision |
|---|---|---|
| 0DCS03-ZO-0004 | MPC-37 Closure Operations (Sealing, Drying, and Backfilling) | 0c |
| 0DCS03-ZO-0007 | MPC Unloading | 0a |
| PI-CNSTR-STP-H-01 | PCI Closure Welding of Holtec MPC | 0 |
| 0PGP03-ZT-0138 | Contractor Augmentation Training and Qualification Program | 10 |

Miscellaneous Documents

Procedures

| Number | Title | Revision/Date |
|---|---|---|
| Q-16 | Leak Test Specialists Certificate of Qualification Package for numerous individuals | 2017-2018 |
| SAP No. 77754 | PCI NDE VT/PT Level II Personnel Certificate | June 19, 2017 |
| CMTRs | Sherwin Certification for D-100, D-350, KO-17, KO-19 Liquid Penetrant materials | March 1, 2016 |
| PC-912784 | Certificate of Conformance for weld material | January 3, 2018 |
| PCI-WPQs | Welder Performance Qualification Records for numerous individuals | February 2018 |
| 8 MN-GTAW | PCI Welding Procedure Specification for Manual Gas Tungsten Arc Welding | 7 |
| 8 MC-GTAW | PCI Welding Procedure Specification Machine Gas Tungsten Arc Welding | 16 |
| PQR-62 | PCI Procedure Qualification Record for WPS 8 | 3 |
| PQR-63 | PCI Procedure Qualification Record for Manual GTAW | 6 |
| PQR-600 | PCI Procedure Qualification Record for Machine GTAW | 8 |
| RWP 2018-0-0152 | Radiation Work Plan for Dry Cask Storage Welding and Helium Dehydration | 0 |
| ARP - 2018 | STP ALARA Review Package, First DCS Campaign | Draft |
| 71-0028RK | PCI Instruction Manual Eagle Series, Hydrogen Detector | G |
| 72-5201RK | Engineering Products and Controls Calibration Certification for Eagle Monitors E11X068, E11X069 | April 3, 2017 |
| 85-401049784-1 | Airgas Certificate of Batch Analysis for high purity helium | November 6, 2017 |

Procedures

| Number | Title | Revision/Date |
|---|---|---|
| STPNOC | STP Metrology Laboratory Calibration Form for pressure, temperature, and due sensor gages | 2017-2018 |
| Holtec TCF | Holtec Technician Certification Form for numerous individuals | February 2018 |

**Initial Request for Information**
**Integrated Inspection Report 2018-002**
**South Texas Project**

Inspection Report: 05000498/2018002; 05000499/2018002

Inspection Dates: April 1 – June 30, 2018

Inspection Procedure: Baseline Inspection Procedures

Lead Inspector: Alfred Sanchez, Senior Resident Inspector

**Information Due Date: April 24, 2018**

**System of Interest: Essential Cooling Water (ECW)**

*The following information should be provided in electronic format (Certrec IMS preferred), to the attention of Alfred Sanchez by **April 24, 2018**. The specific items selected from the lists shall be available and ready for review on the day indicated in this request. *Please provide requested documentation electronically in "pdf" files, Excel, or other searchable formats, if possible. The information should contain descriptive names, and be indexed and hyperlinked to facilitate ease of use. Information in "lists" should contain enough information to be easily understood by someone who has knowledge of pressurized water reactor technology. If requested documents are large and/or only hard copy formats are available, please inform me and provide subject documentation.*

1. A list of Essential Cooling Water (ECW) system engineering contacts with phone numbers.

2. Any pre-existing evaluation or list of ECW system components and associated calculations with low design margins.

3. A list of ECW system related operating experience evaluations for the last 3 years.

4. A list of all ECW system time-critical operator actions in procedures.

5. Copies of the initial operator licensed operators training materials.

6. List of drawings for the system (P&ID)-number and title

7. ECW maintenance work windows schedules (all trains-both Units) and a summary of the work to be performed in those windows.

8. List and schedule of surveillance tests scheduled for the quarter

9. Complete copies of normal operating, abnormal operating, emergency operating, surveillance, and alarm response procedures associated with the ECW system

10. A list of permanent and temporary modifications related to the ECW system sorted by component for the last 3 years

11. A list of current ECW system related “operator work arounds/burdens.”

12. A list of the ECW system design calculations, which provide the design margin information for components.

13. Flooding calculations for the ECW area (Essential Cooling Water Intake Structure), component cooling water heat exchanger rooms, and common return areas in the mechanical auxiliary building (including essential chilled water and component cooling water pump areas)

14. List of ECW system root cause evaluations associated with component failures or design issues initiated/completed in the last 5 years.

15. A list of any ECW system common-cause failures of components in the last 3 years.

16. A list of condition reports (with descriptions) for the last 2 years

17. An electronic copy of the ECW system Design Bases Documents and any open, pending, or recently completed changes. Please include any open, pending, or recently completed changes to emergency operating, abnormal operating, normal operating, alarm response, system alignment, surveillance, or other procedure.

18. An electronic copy of the System Health Report for the ECW system.

19. A copy of ECW system related audits completed in the last 3 years.

20. A list of ECW system motor operated valves (MOVs) in the program, design margin, and risk ranking.

21. A list of ECW system air operated valves (AOVs) in the valve program, design margin, and risk ranking.

22. ECW system structure, system, and components’ maintenance rule category, scoping, functional failure evaluations, (a)(1) determinations, (a)(1) goals, and any supporting basis documentation.

23. ECW system unavailability and unreliability raw data, and CDE sheets for the last 18 months

24. A list of high risk ECW system maintenance rule systems/components and functions, based on engineering or expert panel judgement.

25. Copies of surveillance packages (last four performances) for all three trains of ECW systems on both Units.

26. An Excel spreadsheet of ECW system related probabilistic risk assessment (PRA) human action basic events or risk ranking of operator actions from your site specific

PSA sorted by risk achievement worth (RAW) and Fussell-Vesely (FV). Provide copies of your human reliability worksheets for these items.

27. In so far as there are recent or pending changes, please provide an Excel spreadsheet of ECW system related equipment basic events (with definitions), including importance measures sorted by RAW and FV from your internal events PRA. Include basic events with RAW value of 1.3 or greater.

**Information Request**
**January 23, 2018**
**Notification of Inspection and Request for Information**
**South Texas Generating Station, Unit 2**
**NRC Inspection Report 05000499/2018002**

INSERVICE INSPECTION DOCUMENT REQUEST

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 Isaac Anchondo, by March 26, 2018, to facilitate the selection of specific items that will be reviewed during the onsite inspection week. The inspector 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.

On April 9, 2018, a reactor inspector from the Nuclear Regulatory Commission's (NRC) Region IV office will perform the baseline inservice inspection at South Texas Generating Station, 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 inspector and your staff. The date of this inspection may change dependent on the outage schedule you provide. 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) identified information to be provided prior to the inspection to ensure that the inspector is adequately prepared. The second group (Section B of the enclosure) identifies the information the inspector 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 Rafael Gonzales of your licensing organization. The tentative inspection schedule is as follows:

Preparation week: March 26, 2018
Onsite weeks: April 9-13 (1st week), TBD (week 2), 2018

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 Isaac Anchondo at (817) 200-1152 (Email to Isaac.Anchondo@nrc.gov).

A.1 ISI/Welding Programs and Schedule Information

1. A detailed schedule (including preliminary dates) of:

   1.1. Nondestructive examinations planned for ASME Code Class Components performed as part of your ASME Section XI, risk informed (if applicable), and augmented inservice inspection programs during the upcoming outage.

   1.2. Examinations planned for Alloy 82/182/600 components that are not included in the Section XI scope (If applicable)

   1.3. Examinations planned as part of your boric acid corrosion control program (Mode 3 walkdowns, bolted connection walkdowns, etc.)

   1.4. Welding activities that are scheduled to be completed during the upcoming outage (ASME Class 1, 2, or 3 structures, systems, or components)

2. A copy of ASME Section XI Code Relief Requests and associated NRC safety evaluations applicable to the examinations identified above.

   2.1. A list of ASME Code Cases currently being used to include the system and/or component the Code Case is being applied to.

3. A list of nondestructive examination reports which have identified recordable or rejectable indications on any ASME Code Class components 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.

4. A list including a brief description (e.g., system, code class, weld category, nondestructive examination performed) associated with the repair/replacement activities of any ASME Code Class component since the beginning of the last outage and/or planned this refueling outage.

5. 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.

6. Copy of any 10 CFR Part 21 reports applicable to 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.

7. A list of any temporary non-code repairs in service (e.g., pinhole leaks).

8. Please provide copies of the most recent self-assessments for the inservice inspection, welding, and Alloy 600 programs.

9. Copy of the procedures for welding techniques, and NDE that will be used during the outage.

A.2 Boric Acid Corrosion Control Program

1. 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.

2. 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.

A.3 Steam Generator Tube Inspections

1. A detailed schedule of:

   - Steam generator tube inspection, data analyses, and repair activities for the upcoming outage (if occurring).

   - Steam generator secondary side inspection activities for the upcoming outage (if occurring).

2. Copy of SG history documentation given to vendors performing eddy current (ET) testing of the SGs during the upcoming outage.

3. Copy of procedure containing screening criteria used for selecting tubes for in-situ pressure testing and the procedure to be used for in-situ pressure testing.

4. Copy of previous outage SG tube operational assessment. Also include a copy of the following documents as they become available:

   - Degradation assessment

   - Condition monitoring assessment

5. Copy of the document defining the planned SG ET scope (e.g., 100 percent of unrepaired tubes with bobbin probe and 20 percent sample of hot leg expansion transition regions with rotating probe) and identify the scope expansion criteria, which will be applied. Also identify and describe any deviations in this scope or expansion criteria from the EPRI Guidelines.

6. Copy of the document describing the ET acquisition equipment to be applied including ET probe types. Also identify the extent of planned tube examination coverage with each probe type (e.g. rotating probe -0.080 inches, 0.115 inches pancake coils and mid-range +point coil applied at the top-of-tube-sheet plus 3 inches to minus 12 inches).

7. Identify and quantify any SG tube leakage experienced during the previous operating cycle. Also provide documentation identifying which SG was leaking and corrective actions completed and planned for this condition.

8. Copy of steam generator eddy current data analyst guidelines and site validated eddy current technique specification sheets. Additionally, please provide a copy of EPRI Appendix H, "Examination Technique Specification Sheets," qualification records.

9. 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.).

   Indicate where the primary, secondary, and resolution analyses are scheduled to take place.

A.4 Additional Information Related to all Inservice Inspection Activities

1. A list with a brief description of inservice inspection, and boric acid corrosion control program related issues (e.g., PVAR) entered into your corrective action program since the beginning of the last refueling outage. For example, a list based upon data base searches using key words related to piping such as: inservice inspection, ASME Code, Section XI, NDE, cracks, wear, thinning, leakage, rust, corrosion, boric acid, or errors in piping examinations.

2. Provide training (e.g. Scaffolding, Fall Protection, FME, Confined Space) if they are required for the activities described in A.1 through A.3.

3. 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
   Steam generator inspection activities (site lead and vendor contact)

B. Information to be Provided Onsite to the Inspector(s) at the Entrance Meeting (April 9, 2018):

B.1 Inservice Inspection / Welding Programs and Schedule Information

1. Updated schedules for inservice inspection/nondestructive examination activities, including planned welding activities, and schedule showing contingency repair plans, if available.

2. For ASME Code Class 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:

   - Weld data sheet (traveler).

- Weld configuration and system location.
- Applicable Code Edition and Addenda for weldment.
- Applicable Code Edition and Addenda for welding procedures.
- Applicable welding procedures used to fabricate the welds.
- Copies of procedure qualification records (PQRs) supporting the weld procedures from B.1.b.v.
- Copies of welder's performance qualification records (WPQ).
- Copies of the nonconformance reports for the selected welds (If applicable).
- Radiographs of the selected welds and access to equipment to allow viewing radiographs (if radiographic testing was performed).
- Copies of the preservice examination records for the selected welds.
- Readily accessible copies of nondestructive examination personnel qualifications records for reviewing.

3. For the inservice inspection related corrective action issues selected by the inspector from section A of this enclosure, provide a copy of the corrective actions and supporting documentation.

4. For the nondestructive examination reports with relevant conditions on an ASME Code Class components selected by the inspector from Section A above, provide a copy of the examination records, examiner qualification records, and associated corrective action documents.

5. A copy of (or ready access to) most current revision of the inservice inspection program manual and plan for the current interval.

6. For the nondestructive examinations selected by the inspector 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 Code, 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 Boric Acid Corrosion Control Program

1. Please provide boric acid walk down 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.

2. 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.3 Steam Generator Tube Inspections

1. Copies of the Examination Technique Specification Sheets and associated justification for any revisions.

2. Please provide a copy of the eddy current testing procedures used to perform the steam generator tube inspections (specifically calibration and flaw characterization/sizing procedures, etc.).

3. Copy of the guidance to be followed if a loose part or foreign material is identified in the steam generators.

4. Identify the types of SG tube repair processes which will be implemented for defective SG tubes (including any NRC reviews/evaluations/approvals of this repair process). Provide the flaw depth sizing criteria to be applied for ET indications identified in the SG tubes.

5. Copy of documents describing actions to be taken if a new SG tube degradation mechanism is identified.

6. Provide procedures with guidance/instructions for identifying (e.g. physically locating the tubes that require plugging) and plugging SG tubes.

7. List of corrective action documents generated by the vendor and/or site with respect to steam generator inspection activities.

B.4 Codes and Standards

1. 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):

2. Copy of the performance demonstration initiative (PDI) generic procedures with the latest applicable revisions that support site qualified ultrasonic examinations of piping welds and components (e.g., PDI-UT-1, PDI-UT-2, PDI-UT-3, PDI-UT-10, etc.).

3. Boric Acid Corrosion Guidebook Revision 1 – EPRI Technical Report 1000975.

SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION - NRC INTEGRATED INSPECTION REPORT 05000498/2018002 AND 05000499/2018002 – August 8, 2018

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ADAMS ACCESSION NUMBER: ML18221A385

■ SUNSI Review By: NTaylor | ADAMS: ■Yes ☐ No | ☐ Non-Publicly Available ■Publicly Available | ■Non-Sensitive ☐ Sensitive | Keyword: NRC-002

| OFFICE | SRI:DRP/B | RI:DRP/B | RI:DRP/B | C:DRS/PSB2 | C:DNMS/FCD | C:DRS/OB |
|---|---|---|---|---|---|---|
| NAME | ASanchez | NHernandez | JChoate | HGepford | JKatanic | VGaddy |
| SIGNATURE | ***AAS*** | NAH | JMC | hjg | JFK | vgg |
| DATE | 08/06/2018 | 8/7/18 | 08/01/18 | 07/26/18 | 7/31/18 | 7/26/18 |
| OFFICE | C:DRS/IPAT | C:DRS/EB1 | SPE:DRP/B | C:DRS/EB2 | BC:DRP/B | |
| NAME | GGeorge | TFarnholtz | DProulx | JDrake | NTaylor | |
| SIGNATURE | HAF for | TRF | DLP | JFD | NHT | |
| DATE | 07/31/18 | 07/27/2018 | 8/2/18 | 7/31/18 | 8/8/18 | |

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