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

February 27, 2020

Mr. G. T. Powell
President and CEO
STP Nuclear Operating Company
P.O. Box 289
Wadsworth, TX 77483

SUBJECT: SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION, UNITS 1 AND 2 – REVISED INTEGRATED INSPECTION REPORT 05000498/2019004 AND 05000499/2019004

Dear Mr. Powell:

On January 29, 2020, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at South Texas Project Electric Generating Station, Units 1 and 2. The results of this inspection were originally issued in a report, dated January 29, 2020 (Agencywide Document Access and Management System (ADAMS) Accession No. ML20029F018).

The NRC staff subsequently determined that one of the samples for the inspection activity Inspection Procedure 71111.11Q "Licensed Operator Requalification Program and Licensed Operator Performance" (specifically IP Section 03.02), was incorrectly included with the previous inspection activity. The revised inspection report correcting this error is enclosed. This change had no impact on the findings documented in this report, but consistent with NRC processes, this report is being reissued in whole.

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 Title 10 of the *Code of Federal Regulations* 2.390, “Public Inspections, Exemptions, Requests for Withholding.”

Sincerely,

/RA/

Jeffrey E. Josey, Chief
Reactor Projects Branch A
Division of Reactor Projects

Docket Nos. 05000498 and 05000499
License Nos. NPF-76 and NPF-80

Enclosure:
As stated

cc w/ encl: Distribution via LISTSERV®

SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION, UNITS 1 AND 2 – REVISED INTEGRATED INSPECTION REPORT 05000498/2019004 AND 05000499/2019004 – February 27, 2020

DISTRIBUTION:
SMorris, RA
MShaffer, DRA
AVegel, DRP
MHay, DRP
RLantz, DRS
GMiller, DRS
DCylkowski, RC
OLópez-Santiago, RIV/OEDO
VDricks, ORA
JWeil, OCA
DGalvin, NRR
AMoreno, RIV/OCA
BMaier, RSLO
AAgrawal, IPAT
JJosey, DRP
HFreeman, DRP
FSanchez, DRP
CStott, DRP
LReyna, DRP
PJayroe, IPAT
BCorrell, IPAT
MHerrera, DRMA
R4Enforcement

ADAMS ACCESSION NUMBER: ML20058F926

■ SUNSI Review	■ Non-Sensitive ☐ Sensitive	■ Publicly Available ☐ Non-Publicly Available

OFFICE	SPE:DRP/A	BC:DRP/A			
NAME	HFreeman	JJosey			
DATE	02/27/2020	02/27/2020			

OFFICIAL RECORD COPY

U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report

Docket Numbers:	05000498 and 05000499
License Numbers:	NPF-76 and NPF-80
Report Numbers:	05000498/2019004 and 05000499/2019004
Enterprise Identifier:	I-2019-004-0004
Licensee:	STP Nuclear Operating Company
Facility:	South Texas Project Electric Generating Station, Units 1 and 2
Location:	Wadsworth, TX 77483
Inspection Dates:	October 1, 2019, to December 31, 2019
Inspectors:	B. Baca, Health Physicist J. Choate, Resident Inspector K. Clayton, Senior Operations Engineer R. Kopriva, Senior Reactor Inspector J. O'Donnell, Health Physicist A. Sanchez, Senior Resident Inspector
Approved By:	Jeffrey E. Josey, Chief Reactor Projects Branch A Division of Reactor Projects

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting an integrated inspection at South Texas Project Electric Generating Station, 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.

List of Findings and Violations

Failure to Report a Change in Medical Condition of a Licensed Operator			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Not Applicable	NCV 05000499,05000498/2019004-01 Open/Closed	Not Applicable	71111.11B
The inspectors identified a Severity Level IV non-cited violation of 10 CFR 55.25, "Incapacitation Because of Disability or Illness," for the licensee's failure to notify the NRC within 30 days of a change in a licensed operator's medical condition.			

Failure to Perform a Risk Assessment Prior to Performing Maintenance			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Initiating Events	Green NCV 05000498/2019004-02 Open/Closed	[H.5] - Work Management	71152
The inspectors identified a Green finding and associated non-cited violation of 10 CFR 50.65(a)(4) when the licensee failed to perform a risk assessment prior to performing maintenance. Specifically, inspectors identified breaker relay calibrations being performed on protected equipment in Unit 1 during the 345kV North bus outage.			

Inadequate Work Instruction Results in Loss of Spent Fuel Pool Cooling			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Barrier Integrity	Green NCV 05000499/2019004-03 Open/Closed	[H.8] - Procedure Adherence	71152
A self-revealed Green finding and associated non-cited violation of Technical Specification 6.8.1.a, Regulatory Guide 1.33, Section 9, was identified for the failure to provide adequate work instruction for maintenance associated with an emergency diesel generator sequencer and resulted in a loss of spent fuel pool cooling. Specifically, the licensee failed to identify the correct replacement part for the train C sequencer and once installed, resulted in a loss of all train C electrical loads, including the operating train of spent fuel pool cooling.			

Inadequate Work Instructions Result in Reactor Coolant System Leaks			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Initiating Events	Green NCV 05000499,05000498/2019004-04	[H.5] - Work Management	71152

	Open/Closed		
A self-revealed Green finding and associated non-cited violation of Technical Specification 6.8.1.a was identified for the failure to provide adequate work instruction for compression fitting connections that resulted in reactor coolant system leakage. Specifically, the licensee failed to provide adequate work instructions for reconnecting high-pressure RCS instrument tubing compression fittings. This resulted in RCS leaks which required a temporary modification and a high-risk work activity to stop the leaks that threatened stable plant operations.			

Failure to Follow Procedure Results in Two Inoperable Emergency Diesel Generators			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000499,05000498/2019004-05 Open/Closed	[H.11] - Challenge the Unknown	71152
A self-revealed Green finding and associated non-cited violation of Technical Specification 6.8.1.a, Regulatory Guide 1.33, Section 3.s.2.a, was identified for the failure to follow an emergency diesel generator (EDG) testing procedure, which resulted in two EDGs becoming inoperable at the same time. Specifically, the licensee failed to follow Procedure 0POP02-DG-0001, “Emergency Diesel Generator 11(21),” Checklist 1, “DG Standby Operation Checklist,” Revision 70, Step 29.2, such that the train B EDG became inoperable while the train A EDG was inoperable.			

Additional Tracking Items

None.

PLANT STATUS

Unit 1 operated at or near rated thermal power for the entire period.

Unit 2 began the inspection period at 98 percent thermal power due to coast down operations. On October 4, 2019, Unit 2 commenced rector shutdown to being refueling outage 2RE20 and entered Mode 3. Unit 2 entered Mode 1 on November 4, 2019, and reached rated thermal power on November 7, 2019. Unit 2 operated at or near rated power for the rest of the 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

External Flooding Sample (IP Section 03.04) (1 Sample)

(1) The inspectors evaluated readiness to cope with external flooding for the following areas:
- Units 1 and 2 flood panels for component cooling water heat exchangers
- Unit 1 reactor containment building
- Electrical auxiliary building flood doors
- Essential cooling water intake structure

71111.04Q - Equipment Alignment

Partial Walkdown Sample (IP Section 03.01) (3 Samples)

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

(1) Unit 1, train B essential chilled water system while train C was out of service for planned maintenance on December 16, 2019
(2) Unit 1, condenser air removal pumps 11 and 13 while condenser air removal pump 12 was out of service due to emergent maintenance on December 17, 2019
(3) Unit 2, train A component cooling water while train B was out of service for planned maintenance on December 18, 2019

71111.04S - Equipment Alignment

Complete Walkdown Sample (IP Section 03.02) (1 Sample)

(1) The inspectors evaluated system configurations during a complete walkdown of the Unit 2, train C component cooling water, with train B out of service, while train C was relied upon for decay heat removal during the refueling outage on October 17, 2019.

71111.05Q - Fire Protection

Quarterly Inspection (IP Section 03.01) (5 Samples)

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

(1) Unit 2, reactor containment building, Fire Area 63, on October 18, 2019
(2) Unit 2, train A essential cooling water intake structure, Fire Area 58, on December 30, 2019
(3) Unit 1, train A component cooling water, Fire Area 02 and 20, on December 30, 2019
(4) Unit 1, train A essential cooling water intake structure, Fire Area 58, on December 31, 2019
(5) Unit 2, train A component cooling water, Fire Area 02 and 20, on December 31, 2019

71111.06 - Flood Protection Measures

Inspection Activities - Internal Flooding (IP Section 02.02a.) (1 Sample)

The inspectors evaluated internal flooding mitigation protections in the:

(1) The inspectors evaluated internal flooding mitigation protections in Unit 2, train B, 4160 volt switchgear room on November 20, 2019.

71111.08P - Inservice Inspection Activities (PWR)

PWR Inservice Inspection Activities Sample (IP Section 03.01) (1 Sample)

(1) The inspectors verified that the reactor coolant system boundary, steam generator tubes, reactor vessel internals, risk-significant piping system boundaries, and containment boundary are appropriately monitored for degradation and that repairs and replacements were appropriately fabricated, examined and accepted by reviewing the following activities from October 15 to 28, 2019:

03.01.a - Nondestructive Examination and Welding Activities.

- 1 - Magnetic Particle Examination
- 2 - Dye Penetrant Examinations
- 6 - Ultrasonic Examinations
- 1 - Visual Examination

On October 16, 2019, during Unit 2 refueling outage 2RE20, inservice inspections of the pressurizer 2A upper head safety nozzle N4C (nozzle designation per ISI Figure A-PRZ-1; see Attachment B) to shell weld discovered one ultrasonic testing (UT) indication. The subject indication was processed in accordance with Addendum 2 of Procedure OPGP04-ZE-0304 "Inservice Inspection Program for Welds and Component Supports." The indication was determined to be a subsurface flaw and subsequently characterized within Ultrasonic Examination Reports UT-2019-031 and UT-2019-032. Article IWB-3000 of Section XI contains the criteria for the acceptance of flaws or other relevant conditions found during examination with the Acceptance Standards summarized within Table IWB-3410-1 "Acceptance Standards." For this particular location, this weld falls into Examination Category B-D (full penetration and welded nozzles in vessels); therefore, IWB-3512 acceptance standards apply. Using the flaw dimensions summarized above, and the Allowable Flaws given in Table IWB-3512-1, the flaw does not meet the acceptance standards for the aspect ratio calculated. Given this, the indication requires the use of IWB-3132.3 requiring an analytical evaluation per IWB-3600. Indications that are rejectable based on IWB-3500 can be evaluated per a detailed fracture mechanics evaluation based on IWB-3600 to demonstrate flaw acceptability. By Letter LTR-SDA-19-095-P, Westinghouse has performed a detailed fracture mechanics evaluation in accordance with IWB-3612 and Non-Mandatory Appendix A, "Analysis of Flaws," and has shown that the indication found during 2RE20 inservice inspections is acceptable for at least 36 months (two full fuel cycles).

One gas tungsten arc welding activity was observed (control volume and chemical control system valve replacement under Work Orders 96017307 and 598944 for Weld Nos. RW0027 and FW0028).

03.01.b - Pressurized-Water Reactor Vessel Upper Head Penetration Examination Activities.

- The bare metal visual inspection of the reactor vessel upper head penetrations was required to be performed during this outage, 2RE20. The inspector reviewed the following reactor head penetration visual examinations: penetration nozzles 1-9, 14-23, 25-27, 29-61, 66, 68, 70, 72, 75-78, including vent pipe and general head area. Also, a direct visual was performed in those areas that had limitations for the crawler. No concerns were identified.

- The bare metal visual inspection of the bottom mounted instrumentation nozzles was performed during this outage, 2RE20. The inspector reviewed the following reactor head penetration visual examinations: Penetration nozzles 1-58. No concerns were identified.

03.01.c – Pressurized-Water Reactor Boric Acid Corrosion Control Activities.

- The inspector reviewed the following documents associated with boric acid leaks and evaluations:

  - Evaluations: 17-18419-2, 18-11258-2, 18-6471, 19-7578-3, 19-7950

- Corrective Actions: 19-10796, 19-10798, 19-11061, 19-11062, 19-11065, 19-11066, 19-11067, 19-11072, 19-11074, 19-11075, 19-11076, 19-11111, 19-11112, 19-11113, 19-11114, 19-11160, 19-11161, 19-11163, 19-11202, 19-11219, 19-11220, 19-11221, 19-11222, 19-11223,19-11224, 19-11225

03.01.d - Mechanical Stress Improvement Process used on Reactor Vessel Hot and Cold Leg Nozzle to Safe-End Welds.

- During the 2019 Refueling Outage for Unit 2, 2RE20, the inspector witnessed the license's performance of mechanical stress improvement on the reactor vessel hot and cold leg nozzle to safe-end, dissimilar metal welds. This mechanical process helps prevent and mitigate primary water stress corrosion cracking in piping by minimally contracting the pipe on one side of the weldment, replacing residual tensile stresses with compressive stresses. This removal of as-welded tensile stresses is an effective and permanent means to prevent or mitigate primary water stress corrosion cracking.

71111.11B - Licensed Operator Requalification Program and Licensed Operator Performance

Licensed Operator Requalification Program (IP Section 03.04) (1 Sample)

(1) Biennial Requalification Written Examinations

The inspectors evaluated the quality of the licensed operator biennial requalification written examination administered on August 5, 2019.

Annual Requalification Operating Tests

The inspectors evaluated the adequacy of the facility licensee’s annual requalification operating test.

Administration of an Annual Requalification Operating Test

The inspectors evaluated the effectiveness of the facility licensee in administering requalification operating tests required by 10 CFR 55.59(a)(2) and that the facility licensee is effectively evaluating their licensed operators for mastery of training objectives.

Requalification Examination Security

The inspectors evaluated the ability of the facility licensee to safeguard examination material, such that the examination is not compromised.

Remedial Training and Re-examinations

The inspectors evaluated the effectiveness of remedial training conducted by the licensee, and reviewed the adequacy of re-examinations for licensed operators who did not pass a required requalification examination.

Operator License Conditions

The inspectors evaluated the licensee's program for ensuring that licensed operators meet the conditions of their licenses.

Control Room Simulator

The inspectors evaluated the adequacy of the facility licensee's control room simulator in modeling the actual plant, and for meeting the requirements contained in 10 CFR 55.46.

Problem Identification and Resolution

The inspectors evaluated the licensee's ability to identify and resolve problems associated with licensed operator performance.

71111.11Q - Licensed Operator Requalification Program and Licensed Operator Performance

Licensed Operator Performance in the Actual Plant/Main Control Room (IP Section 03.01) (1 Sample)

(1) The inspectors observed a evaluated the performance of a Unit 1 operating crew while in an alternate 13.8kV bus alignment due to an emergent issue with the main generator output breaker preventing automatic trip of that breaker on December 11, 2019.

The inspectors observed and evaluated the performance of a Unit 1 operating crew during a high risk evolution to replace two power supplies in the train R solid state protection system on December 18, 2019.

Licensed Operator Requalification Training/Examinations (IP Section 03.02) (1 Sample)

(1) The inspectors observed and evaluated an operating crew annual exam on November 26, 2019.

71111.12 - Maintenance Effectiveness

Routine Maintenance Effectiveness Inspection (IP Section 02.01) (3 Samples)

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

(1) Units 1 and 2, essential cooling water systems on November 30, 2019
(2) Units 1 and 2, component cooling water system on December 30, 2019
(3) Units 1 and 2, emergency safeguards sequencer on December 30, 2019

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Risk Assessment and Management Sample (IP Section 03.01) (4 Samples)

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

(1) Unit 2, planned risk due to train C essential cooling water, essential chilled water, emergency core cooling, containment spray, and emergency diesel generator maintenance the week of October 1, 2019
(2) Unit 2, emergent risk due to train C engineered safety feature load sequencer requiring a card replacement on October 28, 2019
(3) Unit 2, emergent risk due to train A engineered safety feature load sequencer failure during a large train B work week and resulted in the use of the Configuration Risk Management Program on November 20, 2019
(4) Units 1 and 2, planned risk due to the maintenance on the 345kV south bus and Unit 2, standby transformer and use of the Configuration Risk Management Program the week of December 4, 2019

71111.15 - Operability Determinations and Functionality Assessments

Operability Determination or Functionality Assessment (IP Section 02.02) (6 Samples)

The inspectors evaluated the following operability determinations and functionality assessments:

(1) Unit 2, turbine-driven auxiliary feedwater governor stem nut missing on October 21, 2019
(2) Unit 1, train A essential chilled water due to a degraded temperature control module that failed to keep the output temperature less than 48 degrees Fahrenheit on November 8, 2019
(3) Unit 2, damaged control room envelope door on November 11, 2019
(4) Unit 2, train B emergency diesel generator jacket water leak on November 14, 2019
(5) Unit 1, train A essential cooling water due to a through wall indication on flange EW-1006 due to aluminum bronze dealloying phenomenon on November 20, 2019
(6) Unit 2, train C high head safety injection pump bearing oil level indicator installed upside down following motor replacement on November 27, 2019

71111.18 - Plant Modifications

Temporary Modifications and/or Permanent Modifications (IP Section 03.01 and/or 03.02) (3 Samples)

The inspectors evaluated the following temporary or permanent modifications:

(1) Units 1 and 2, temporary diesel-driven fire pump during repair and replacement of diesel-driven fire pump components on April 15, 2019
(2) Unit 2, temporary modification to power spent fuel pool cooling pump 2A during refueling outage 2RE20 on October 18, 2019

(3) Units 1 and 2, permanent modification to install a quick exhaust valve to reduce the time required to close the valve on a main steam actuation signal on December 31, 2019

71111.19 - Post-Maintenance Testing

Post-Maintenance Test Sample (IP Section 03.01) (4 Samples)

The inspectors evaluated the following post maintenance tests:

(1) Unit 2, local leak rate test of the auxiliary containment airlock following maintenance on the sealing surfaces on October 24, 2019
(2) Unit 2, local leak rate test of the normal containment purge exhaust isolation damper, 2-HC-9, following emergent maintenance following a failed local leak rate test on October 27, 2019
(3) Unit 2, nuclear instrumentation NI-35 following the replacement of the log amplifier module on November 3, 2019
(4) Unit 1, reactor coolant system leak check and flow transmitter FT-0419 following the replacement of the reactor coolant system instrument tubing due to an increasing leak on December 6, 2019

71111.20 - Refueling and Other Outage Activities

Refueling/Other Outage Sample (IP Section 03.01) (1 Sample)

(1) The inspectors evaluated refueling outage 2RE20 activities from October 4 through November 5, 2019.

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

Surveillance Tests (other) (IP Section 03.01) (3 Samples)

(1) Unit 1, train C essential cooling water pump surveillance test on December 14, 2019
(2) Unit 1, train C emergency diesel generator monthly surveillance test on December 17, 2019
(3) Unit 1, train C auxiliary feedwater pump surveillance test on December 18, 2019

FLEX Testing (IP Section 03.02) (1 Sample)

(1) Unit 1, FLEX diesel generator surveillance test on December 12, 2019

71114.04 - Emergency Action Level and Emergency Plan Changes

Inspection Review (IP Section 02.01-02.03) (1 Sample)

(1) The licensee submitted "South Texas Project Emergency Plan," Revision ICN 20-21, as well as a copy of Revision ICN 20-22, to the NRC on August 8, 2019. The inspectors conducted an in-office review of the changes from November 13 to November 25, 2019. This evaluation does not constitute NRC approval.

RADIATION SAFETY

71124.01 - Radiological Hazard Assessment and Exposure Controls

Radiological Hazard Assessment (IP Section 02.01) (1 Sample)

The inspectors evaluated radiological hazards assessments and controls.

(1) The inspectors reviewed the following:

Radiological Surveys

- Spent Fuel Pool Cell Inventory
- Concentrate Transfer Pump 1B
- Fuel Transfer Tube Access
- Radwaste Truck Bay
- Reactor Cavity Walkway

Risk Significant Radiological Work Activities

- In-Core (Thimble Tube)
- Head Lift
- Lift Rig

Air Sample Survey Records

- 22373
- 21434
- 21441
- 21468
- 21505

Instructions to Workers (IP Section 02.02) (1 Sample)

The inspectors evaluated instructions to workers including radiation work permits used to access high radiation areas.

(1) The inspectors reviewed the following:

Radiation Work Packages

- 2019-2-0165, 2RE20 – Maintenance and Support Work – Room 307 (LHRA)
- 2019-2-0173, 2RE20 – Maintenance on N2CVPSV3100 (LHRA)
- 2019-2-0158, 2RE20 – Reactor Head Lift Activities (LHRA)

Electronic Alarming Dosimeter Alarms

- Dose Rate Alarm – 18-04050
- Dose Rate Alarm – 18-04757
- Dose Rate Alarm – 18-11562
- Dose Rate Alarm – 18-12585

Labeling of Containers

- Box 300437
- Radwaste Bags
- 55 Gallon Barrel
- Box #20-2466
- OSSC #26

Contamination and Radioactive Material Control (IP Section 02.03) (1 Sample)

The inspectors evaluated licensee processes for monitoring and controlling contamination and radioactive material.

(1) The inspectors verified the following sealed sources are accounted for and are intact:

- MS-0042
- MS-0132
- NAM-1335
- NCF-0604
- NCS 0114/0115
- NCS-0008

Radiological Hazards Control and Work Coverage (IP Section 02.04) (1 Sample)

The inspectors evaluated in-plant radiological conditions during facility walkdowns and observation of radiological work activities.

(1) The inspectors also reviewed the following radiological work package for areas with airborne radioactivity:

- Unanticipated airborne radioactivity during 2RE20 flood-up
  - RWP 2019-2-0158, 2RE20 – Reactor Head Lift Activities (LHRA)
  - ALARA Review Package 19-3165-7, 2RE20 Non-Rapid Refuel
  - DAC-hr Assessment for Condition Report 19-11442

High Radiation Area and Very High Radiation Area Controls (IP Section 02.05) (1 Sample)

(1) The inspectors evaluated risk-significant high radiation area and very high radiation area controls.

Radiation Worker Performance and Radiation Protection Technician Proficiency (IP Section 02.06) (1 Sample)

(1) The inspectors evaluated radiation worker performance and radiation protection technician proficiency.

71124.03 - In-Plant Airborne Radioactivity Control and Mitigation

Engineering Controls (IP Section 02.01) (1 Sample)

The inspectors evaluated airborne controls and radioactive monitoring.

(1) The inspectors reviewed the following:

Installed Ventilation Systems

- Control room envelope
- Technical Support Center

Temporary Ventilation System Setups

- Radwaste sorting vent hoods and associated HEPA units
- Reactor head HEPA units

Portable or Installed Monitoring Systems

- Room specific AMS-4 units: Radwaste sorting room and seal table (thimble) room
- General containment monitoring with AMS-4
- Low volume filter air samples covering reactor head, cavity, and thimble work

Use of Respiratory Protection Devices (IP Section 02.02) (1 Sample)

The inspectors evaluated the licensee's use of respiratory protection devices by:

(1) Observing in-field applications; verifying the licensee validated the level of protection provided by the devices; inspecting the material condition of devices, reviewing records and certification of devices issued for use; reviewing the qualifications of workers that use the devices; and observing workers' donning, doffing and testing devices.

Self-Contained Breathing Apparatus for Emergency Use (IP Section 02.03) (1 Sample)

The inspectors evaluated self-contained breathing apparatus program implementation.

(1) The inspectors reviewed the following:

Status and Surveillance Records for Self-Contained Breathing Apparatus

- SCBA kit #433
- SCBA kit #434
- SCBA kit #462
- SCBA kit #514
- SCBA kit #551

Self-Contained Breathing Apparatus Fit for On-Shift Operators

The inspectors selected two on-shift Unit 2 reactor operators for verification of fit testing, medical approval, donning/doffing practical, and bottle change out protocol.

Self-Contained Breathing Apparatus Maintenance Check

- SCBA kit #434
- SCBA kit #462
- SCBA kit #514

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

MS09: Residual Heat Removal Systems (IP Section 02.08) (2 Samples)

(1) Unit 1, October 1, 2018, through September 30, 2019
(2) Unit 2, October 1, 2018, through September 30, 2019

MS10: Cooling Water Support Systems (IP Section 02.09) (2 Samples)

(1) Unit 1, October 1, 2018, through September 30, 2019
(2) Unit 2, October 1, 2018, through September 30, 2019

OR01: Occupational Exposure Control Effectiveness Sample (IP Section 02.15) (1 Sample)

(1) January 1, 2018, through September 30, 2019

PR01: Radiological Effluent Technical Specifications/Offsite Dose Calculation Manual Radiological Effluent Occurrences (RETS/ODCM) Radiological Effluent Occurrences Sample (IP Section 02.16) (1 Sample)

(1) January 1, 2018, through September 30, 2019

71152 - Problem Identification and Resolution

Semiannual Trend Review (IP Section 02.02) (1 Sample)

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

Annual Follow-up of Selected Issues (IP Section 02.03) (4 Samples)

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

(1) The increase in the number of reactor coolant system leaks for high pressure compression fitting leading to reactor coolant system loop flow transmitters in Units 1 and 2
(2) The failure to assess risk prior to performing maintenance on protected 13.8kV supply breaker to the train B 4.16kV switchgear while the 345kV North bus and the Unit 1 standby transformer were out of service for planned maintenance
(3) Inadequate work instruction on Unit 2, train C engineered safety feature load sequencer results in the loss of spent fuel pool cooling
(4) The Unit 1, train B emergency diesel generator was rendered inoperable by a human performance error

INSPECTION RESULTS

Failure to Report a Change in Medical Condition of a Licensed Operator			
Cornerstone	Severity	Cross-Cutting Aspect	Report Section
Not Applicable	Severity Level IV NCV 05000499,05000498/2019004-01 Open/Closed	Not Applicable	71111.11B

The inspectors identified a Severity Level IV non-cited violation of 10 CFR 55.25, "Incapacitation Because of Disability or Illness," for the licensee's failure to notify the NRC within 30 days of a change in a licensed operator's medical condition.

Description: On June 19, 2014, a senior reactor operator self-reported to the site medical department the diagnosis of a new medical condition. The licensee recorded the new medical condition in the operator's site medical record and drafted a new NRC Form 396 to report a "no solo" condition was being added on the license. The new Form 396 was lost in the review and approval process on site, and at the time there was not a tracking mechanism in place to ensure the review and approval process was completed. As a result, the new Form 396 was never provided to the NRC.

While reviewing a license renewal application, an inspector identified that a "no solo" restriction that had not previously been reported to the NRC was included on the NRC Form 396 that was submitted with the license renewal application. The NRC notified the licensee of the discrepancy on October 8, 2019. The licensee confirmed that site records reflected a "no solo" condition had been added for the individual. The licensee determined that the senior reactor operator had not been on shift since the condition was reported in 2014.

Corrective Actions: On October 17, 2019, the South Texas Project Nuclear Operating Company submitted a letter to the NRC with a revised NRC Form 396, "Certification of Medical Examination by Facility Licensee," that prohibited solo operation of the controls. The "no solo" condition was required for fitness-for-duty reasons in accordance with the American National Standards Institute (ANSI)-3.4-1983, "Medical Certification and Monitoring of Personnel Requiring Operator Licenses for Nuclear Power Plants,"

Corrective Action References: Condition Report 2019-11414

Performance Assessment: The inspectors determined this violation was associated with a minor performance deficiency.

Enforcement: The ROP's significance determination process does not specifically consider the regulatory process impact in its assessment of licensee performance. Therefore, it is necessary to address this violation which impedes the NRC's ability to regulate using traditional enforcement to adequately deter non-compliance.

Severity: The inspectors determined the violation to be a Severity Level IV violation, similar to Example 6.4.d.1.b in the NRC Enforcement Policy because it was a nonwillful compromise of an examination required by 10 CFR Part 55. Specifically, the licensee nonwillfully failed to inform the NRC of a change in an operator's medical condition. The individual did not perform the functions of a senior reactor operation while having a disqualifying medical condition.

Violation: Title 10 CFR 55.25 requires, in part, that if a licensed senior reactor operator develops a permanent physical condition that causes the licensee to fail to meet the requirements of 10 CFR 55.21, the facility shall notify the Commission within 30 days of learning of the diagnosis. For conditions where a license condition is required, the facility licensee must provide medical certification on NRC Form 396, "Certification of Medical Examination by Facility Licensee." Contrary to the above from June 9, 2014, to October 17, 2019, the licensee failed to notify the Commission, within 30 days of learning the diagnosis of a change in medical condition of a licensed senior reactor operator that developed a permanent physical condition that caused the licensed senior reactor operator to fail to meet the requirements of 10 CFR 55.21. Specifically, on June 9, 2014, a senior reactor operator self-reported a new medical condition, the medical department determined that the individual required a “no solo” condition on his license, but the NRC did not receive the revised NRC Form 396 until October 17, 2019.

Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

Failure to Perform a Risk Assessment Prior to Performing Maintenance			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Initiating Events	Green NCV 05000498/2019004-02 Open/Closed	[H.5] - Work Management	71152

The inspectors identified a Green finding and associated non-cited violation of 10 CFR 50.65(a)(4) when the licensee failed to perform a risk assessment prior to performing maintenance. Specifically, inspectors identified breaker relay calibrations being performed on protected equipment in Unit 1 during the 345kV North bus and Unit 1 standby transformer planned maintenance.

Description: The South Texas Project 345kV switchyard consists of two 345kV buses, North and South. Each of the buses in the switchyard supplies offsite power to the Units 1 and 2 standby transformers. These transformers constitute an offsite power source. On April 30, 2018, while the North bus and the Unit 1 standby transformer were out of service for planned maintenance activities, which placed the station in the configuration risk management program, the inspectors performed a walkdown of the protected equipment due to the maintenance. Specifically, the inspectors walked down all protected electrical power supplies, including the 13.8kV Standby bus in Unit 1. There, inspectors discovered two electricians performing relay calibrations on the 13.8kV standby bus 1G to the 4.16kV Aux EAB XFMR E1B breaker. The inspectors determined that the work could have resulted in a trip of the breaker and would present a loss of offsite power to the train B 4. 16kV switchgear which would result in an auto start signal to the train B emergency diesel generator. The inspectors observed the work activity for a while to ensure the activity was being performed with quality before heading to the work start desk to inquire why the work was allowed to take place.

The inspector asked if the work start personnel were aware of the current plant condition and the heightened level of awareness for protected equipment due to the maintenance and why the observed relay work was approved. The work start personnel stated that it was in the approved work schedule, so permission was granted. The inspector then spoke with the work week coordinator and presented the situation observed. The work week coordinator stated that the work should not have been given permission to start and that the work activity

should not be on the schedule. It had somehow been missed in the work schedule scrub for the work week for the given plant condition. The work week coordinator initiated Condition Report 2018-6019.

The licensee determined that the relay calibration for the supply breaker should not have been allowed and should not have been on the schedule. The work planning schedule reviews (multiple reviews) by maintenance, engineering, planning, and operations failed to identify and remove the activity from the schedule.

Corrective Actions: The licensee held discussions with work control specifically to inform them of the condition report, the NRC observation, and stressed the need to thoroughly review work during the work planning process.

Corrective Action References: Condition Report 2018-6019

Performance Assessment:

Performance Deficiency: The failure to perform a risk assessment prior to performing maintenance activities was a performance deficiency. Specifically, the licensee failed to perform a risk assessment prior to allowing relay work on the Unit 1 13.8kV standby bus 1G to 4.16kV Aux EAB XFMR E1B (train B 4.16kV switchgear) while these components were protected for 345kV North bus and Unit 1 standby transformer planned maintenance.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the human performance attribute of the Initiating Events cornerstone and adversely affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the failure to perform a risk assessment on the relay calibration activity prevented proper controls to be implemented if the work activity was deemed necessary, as such the licensee unknowingly increased the likelihood of upsetting the stability of the plant.

Significance: The inspectors assessed the significance of the finding using Appendix K, "Maintenance Risk Assessment and Risk Management SDP." In accordance with Step 4.1.1, "Licensee Evaluation of Risk," the inspectors reviewed the licensee's risk evaluation that indicated no additional numerical risk as a result of the additional maintenance activity because the activity was not intended to open the associated breaker. The licensee's risk assessment tools do not include an increase in the probability that equipment being worked on will be lost from a postulated maintenance error. Given this notable limitation with the licensee's configuration risk assessment tool, the inspectors requested the regional senior reactor analyst to independently evaluate the risk. The analyst evaluated the bounding risk related to a loss of offsite power to Bus E1B. The analyst determined this failure would not result in a plant transient and would not affect the other two Unit 1 trains being supplied by offsite power. The analysis indicated that the availability of other redundant trains, emergency onsite power, and the short period of time that offsite power would have been unavailable given a maintenance error, resulted in a very low risk deficit (incremental core damage probability). Therefore, this finding is of very low safety significance (Green).

Cross-Cutting Aspect: H.5 - Work Management: The organization implements a process of planning, controlling, and executing work activities such that nuclear safety is the overriding priority. The work process includes the identification and management of risk commensurate to the work and the need for coordination with different groups or job activities. Specifically,

the licensee failed to implement the process of planning, controlling and executing work activities such that nuclear safety is the overriding priority. The work control process did not identify and manage the risk for the 13.8kV standby bus 1G breaker to the 4.16kV Aux EAB XFMR EIB relay work activity.

Enforcement:

Violation: Title 10 CFR 50.65 (a)(4) states, in part, "before performing maintenance activities, the licensee shall assess and manage the increase in risk that may result from the proposed maintenance activities…" Contrary to the above, on April 30, 2018, before performing maintenance, the licensee failed to assess and manage the increase in risk that may result from proposed maintenance activities. Specifically, the inspectors discovered that the licensee performed relay calibration maintenance activities on the Unit 1, 13.8kV standby bus 1G to 4.16kV Aux EAB XFMR E1B (train B 4.16kV switchgear) without a risk assessment as required by 10 CFR 50.65(a)(4).

Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

Inadequate Work Instruction Results in Loss of Spent Fuel Pool Cooling			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Barrier Integrity	Green NCV 05000499/2019004-03 Open/Closed	[H.8] - Procedure Adherence	71152

A self-revealed Green finding and associated non-cited violation of Technical Specification 6.8.1.a, Regulatory Guide 1.33, Section 9, was identified for the failure to provide adequate work instruction for maintenance associated with an engineered safety feature load sequencer and resulted in a loss of spent fuel pool cooling. Specifically, the licensee failed to identify the correct replacement part for the train C engineered safety feature load sequencer, and once installed resulted in a loss of all train C electrical loads, including the operating train of spent fuel pool cooling.

Description: On October 24, 2019, Unit 2 was in Mode 6 coming out of the refueling outage with the core reloaded and one of two trains of spent fuel pool cooling in service when an annunciator in the control room indicated an issue with the train C engineered safety feature load sequencer. Work Planning developed a work order to remove and replace opto-isolators in the sequencer as part of troubleshooting. Work Planning wrote the work order procedure and ordered the parts from the warehouse to be delivered to the craft in their shop but used the wrong stock code. Per the vendor drawings, opto-isolator model ODC-24A was supposed to be used (stock code 596-849). Instead, the work order and parts order referenced stock code 596-775 which is for opto-isolator model ODC-24. While the two models appear very similar, ODC-24A allows an output of 125VDC while the ODC-24 allows only 24VDC.

Instrumentation and control technicians went to the sequencer to replace the opto-isolators as part of troubleshooting. When they removed the original opto-isolators (ODC-24A), the technicians noted the "A" on the original components which were not present on their replacements (ODC-24). Neither of the technicians could recall what the "A" represented, and the work order did not explicitly provide the opto-isolator model (ODC-24A vs. ODC-24), only the stock code which is not printed on the actual parts. The technicians installed the replacement opto-isolator into the engineered safety feature load sequencer and the

sequencer immediately shed all electrical loads from the train C electrical bus. With the train C EDG in pull-to-stop for the sequencer troubleshooting, all train C electrical loads were lost including the single train of spent fuel pool cooling that was in operation at the time.

Annunciators in the control room alerted operators the loads on the train C electrical bus were lost, and one of those loads was spent fuel pool cooling. Operators restored spent fuel pool cooling within 30 minutes with no rise in spent fuel pool water temperature. Operators took the train C EDG out of pull-to-stop the EDG automatically started and loaded the bus without issue. The core never lost residual heat removal as trains A and B were in service at this time. The licensee made an 8-hour report to the NRC on October 25, 2019, at 3:24 a.m. for a valid engineered safety feature actuation signal (Event Notification 54351).

The licensee initiated Condition Report 2019-12401 to investigate the event. The apparent cause determined that work control failed to provide adequate work instruction by identifying the wrong part to be installed in the Unit 2, train C engineered safety feature load sequencer. The licensee determined that the planners failed to use a reference Procedure, WCG-0003, "Planner's Guide," Revision 39, that would have required this issue to be elevated to an emergent issue requiring multiple stakeholders to meet to review the planned work. Furthermore, the cause evaluation determined that maintenance technicians failed to follow the maintenance conduct of operations procedure and compare parts and stop work if there are any discrepancies.

Corrective Actions: The licensee counseled the technicians and work planners involved and a lessons learned document was written and discussed with planning and maintenance. The licensee has also included this event as a case study for their mechanical maintenance training with an emphasis on verifying like-for-like parts.

Corrective Action References: Condition Reports 2019-12372 and 2019-12401

Performance Assessment:

Performance Deficiency: The failure to provide adequate work instruction for maintenance associated with an engineered safety feature load sequencer, which resulted in a loss of spent fuel pool cooling, was a performance deficiency. Specifically, the licensee failed to identify and incorporate accurate component information when planning work on the train C engineered safety feature load sequencer.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the SSC performance attribute of the Barrier Integrity cornerstone and adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, the failure to properly pre-plan and perform maintenance on the train C engineered safety feature load sequencer caused a loss of all electrical loads associated with the train C electrical bus. As a result, the single operating train of spent fuel pool cooling was lost.

Significance: The inspectors assessed the significance of the finding using Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." Specifically, the finding did not cause the spent fuel pool (SFP) temperature to exceed its maximum analyzed temperature limit, did not result in a detectible release of radionuclides, did not result in a loss of SFP water inventory below the SFP's minimum analyzed level limit, and did not affect the

SFP neutron absorber, fuel bundle loading pattern, or soluble boron concentration; therefore, the findings were determined to be of very low safety significance, Green .

Cross-Cutting Aspect: H.8 - Procedure Adherence: Individuals follow processes, procedures, and work instructions. Specifically, work planning failed to follow appropriate procedures to ensure multi-discipline participation to determine a proper plan of action and in assembling adequate work instructions to repair the Unit 2, train C engineered safety feature load sequencer without challenging the plant equipment.

Enforcement:

Violation: Technical Specification 6.8.1.a, requires, in part, that written procedures shall be established, implemented, and maintained in accordance with Appendix A of Regulatory Guide 1.33, Revision 2, February 1978. Section 9 of Appendix A to Regulatory Guide 1.33, Revision 2, requires that "maintenance that can affect the performance of safety-related equipment should be properly pre-planned and performed in accordance with written procedures, documented instructions, or drawings appropriate to the circumstances." Contrary to the above on October 24, 2019, the licensee failed to properly pre-plan maintenance that can affect the performance of safety-related equipment. Specifically, the licensee failed to identify and request the correct replacement parts for the Unit 2, train C engineered safety feature load sequencer. As a result, Unit 2, lost all train C electrical loads, including the single operating train of spent fuel pool cooling.

Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

Inadequate Work Instructions Result in Reactor Coolant System Leaks			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Initiating Events	Green NCV 05000499,05000498/2019004-04 Open/Closed	[H.5] - Work Management	71152

A self-revealed Green finding and associated non-cited violation of Technical Specification 6.8.1.a was identified for the failure to provide adequate work instruction for compression fitting connections that resulted in reactor coolant system (RCS) leakage. Specifically, the licensee failed to provide adequate work instructions for reconnecting high-pressure RCS instrument tubing compression fittings. This resulted in RCS leaks which required a temporary modification and a high-risk work activity to stop the leaks that threatened stable plant operations.

Description: At South Texas Project, each RCS primary loop has three independent flow transmitters that would input into the reactor protection system to trip the reactor if 2 out of 3 flow transmitters in a single loop were to read less than 92 percent. Per Technical Specification 3.3.1, each channel could be bypassed for up to 72 hours then the channel would have to be restored or placed into a "Trip" condition.

On August 29, 2018, Unit 2, field operators inside containment identified an active RCS leak at RCS flow transmitter RC-FT-0428 (loop B flow transmitter). Specifically, the leak was almost a steady stream of fluid, apparently emanating from a tubing fitting. Condition Report 2018-10183 was written to note the deficiency. Later that year, a temporary modification was installed to encapsulate the leaking tube fitting and injected with leak stop until the leak was arrested. Operations installed a camera to periodically monitor the leak for

degradation. The modification was planned to be removed, and tubing and fittings replaced during the next Unit 2, refueling outage in October 2019.

On November 14, 2018, Unit 1 field operators inside containment identified an active RCS leak at RCS flow transmitter RC-FT-0419 (loop A flow transmitter). Specifically, the leak was approximately a two-foot steam plume. Condition Report 2018-13993 was written to note the deficiency. The licensee gained alignment to tighten the tubing connection, which was a high-risk work activity. The tubing connection was successfully tightened, which reduced the steam plume to several milliliters per minute leak. Operations installed a camera to periodically monitor the leak for degradation. In addition, operations collected actual leak rates from this tube connection. Due to the tubing configuration, a temporary modification to install an encapsulating box as was done for the loop B flow transmitter was not feasible and would have to be repaired in the next Unit 1, refueling outage in March 2020. However, prior to the refueling outage, the leak began to get worse and engineering was tasked with developing a repair solution. On December 6, 2019 the licensee successfully replaced the leaking connection and tubing while at 100 percent power without perturbating the Unit. This was a high-risk evolution that could have resulted in a reactor trip.

On November 24, 2018, Unit 1 operators identified that RCS flow transmitter RC-FT-0449 (loop D flow transmitter) would periodically exceed its three percent channel checks with the other two loop D flow transmitters, RC-FT-0447 and RC-FT-0448. Condition Report 2018-14266 was written to document the deficiency. It was determined that the flow transmitter RC-FT-0449 was over ranged following a repair of a fitting leak identified at the end of the refueling outage, while in Mode 3. This issue would have to be addressed in the next Unit 1, refueling outage in March 2020.

The licensee initiated Condition Report 2018-14369 to evaluate the current trend of RCS tubing compression fitting leaks as well as search for tubing leaks for the last four refueling outages. The licensee's evaluation identified approximately 44 compression fitting issues dating back to 2015. The common cause concluded that the leaks were a result of improper assembly of Parker CPI compression fittings due to inadequate guidance in procedure 0PGP03-ZE-0056, "Instrumentation Installation," Addendum 7, "Installation Instructions for Compression Fittings." In addition, the licensee determined that there was inconsistent work instruction rigor for re-making these fittings in maintenance packages and some relied on skill of the craft. It was also determined that the procedure did not incorporate vendor recommendations on reassembly and did not use proper gages and other reassembly tools.

Corrective Actions: The licensee enhanced procedure 0PGP03-ZE-0056, "Tubing and Instrumentation" to reflect vendor recommendations for reassembly and the use of proper tools. Training was identified and implemented to those maintenance workers who have this certification. Lastly, the licensee revised portions of the procedure to "in-hand" use to ensure compliance.

Corrective Action References: Condition Reports 2018-10183, 2018-13993, 2018-14266, and 2018-14369.

Performance Assessment:

Performance Deficiency: The failure to provide adequate work instruction for reassembly of tubing compression fittings was a performance deficiency. Specifically, maintenance activities of installing and reinstalling Parker tubing compression fittings without adequate guidance resulted in repetitive RCS tubing leaks, which challenged stable plant operations.

Screening: The performance deficiency was determined to be more than minor because it was associated with the equipment performance attribute of the Initiating Events cornerstone and affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the failure to provide adequate work instructions to repair, remake, replace Parker tubing compression fittings, resulted in RCS tubing leaks and instrument inaccuracies that unduly challenged stable plant operations and high risk work evolutions to mitigate and repair during the operational cycle.

Significance: The inspectors assessed the significance of the finding using Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." Specifically, the finding (1)could not result in exceeding RCS leak rate for a small LOCA; (2) could not have affected other systems used to mitigate a LOCA (LOCA Initiator); and (3) did not cause a reactor trip and the loss of mitigating equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition (Transient Initiators), therefore, the finding was determined to be of very low safety significance, Green.

Cross-Cutting Aspect: H.5 - Work Management: The organization implements a process of planning, controlling, and executing work activities such that nuclear safety is the overriding priority. The work process includes the identification and management of risk commensurate to the work and the need for coordination with different groups or job activities. Specifically, the work planning organization failed to ensure that quality work instruction products were provided to the workforce to execute activities such that nuclear safety was the overriding priority.

Enforcement:

Violation: Technical Specification 6.8.1.a, requires in part, that written procedures shall be established, implemented, and maintained in accordance with Appendix A of Regulatory Guide 1.33, Revision 2, February 1978. Section 9, "Procedures for Performing Maintenance," of Appendix A to Regulatory Guide 1.33, Revision 2, requires, in part, that maintenance that can affect the performance of safety-related equipment should be properly pre planned and performed in accordance with written procedures, documented instructions, or drawings appropriate to the circumstances. The licensee established procedure 0PGP03-ZE-0056, "Instrumentation Installation," Addendum 7, "Installation Instructions for Compression Fittings," to meet that requirement for installing compression fitting on safety-related, reactor coolant system tubing connections. Contrary to the above, from March 23, 2015 to August 14, 2019, the licensee failed provide adequate work instructions to properly install compression fittings on safety-related reactor coolant system tubing connections. As a result, multiple leaks were discovered on both units which challenged stable plant operations.

Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

Failure to Follow Procedure Results in Two Inoperable Emergency Diesel Generators			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000499,05000498/2019004-05 Open/Closed	[H.11] - Challenge the Unknown	71152

A self-revealed Green finding and associated non-cited violation of Technical Specification 6.8.1.a, Regulatory Guide 1.33, Section 3.s.2.a, was identified for the failure to follow an emergency diesel generator (EDG) testing procedure, which resulted in two EDGs becoming inoperable at the same time. Specifically, the licensee failed to follow procedure 0POP02-DG-0001, "Emergency Diesel Generator 11(21)," Checklist 1, "DG Standby Operation Checklist," Revision 70, Step 29.2, such that the train B EDG became inoperable while the train A, EDG was inoperable.

Description: Unit 1 at South Texas Project has three trains of EDGs. On May 23, 2019, operations personnel began restoring the train A, EDG following planned maintenance using 0POP02-DG-0001, "Emergency Diesel Generator 11(21)," Checklist 1, "DG Standby Operation Checklist," Revision 70. A non-licensed operator was sent to the train A, EDG local panel to perform step 29.2, which states "DEPRESS both 'EMERGENCY STOP CIRCUIT' RESET pushbuttons." However, the non-licensed operator inadvertently went to the train B, EDG local panel, depressed the "STOP" pushbuttons after depressing the "RESET" pushbuttons, and did not receive an expected response. The control room immediately received unexpected alarms indicating a malfunction with the starting circuit for the train B, EDG and causing the EDG to become inoperable. With both the trains A and B, EDGs inoperable, Unit 1 entered Technical Specification 3.8.1.1.e with a 24-hour LCO action statement to restore at least one inoperable EDG to operable status, or apply the requirements of the Configuration Risk Management Program, or be in at least hot standby within the next 6 hours.

The control room staff immediately investigated the unexpected alarms and identified that the issue with the starting circuit for the train B EDG was the result of human error. Another non-licensed operator restored the starting circuit for the train B EDG. The control room declared the train operable within 30 minutes of the train being made inoperable, exiting the 24-hour LCO action statement.

Corrective Actions: Operations counseled the non-licensed operator and issued a site wide Lessons Learned emphasizing the importance of taking the correct action on the correct train.

Corrective Action References: Condition Report 2019-5842

Performance Assessment:

Performance Deficiency: The failure to implement maintenance procedures involving safety-related equipment was a performance deficiency. Specifically, a non-licensed operator failed to implement procedure 0POP02-DG-0001, "Emergency Diesel Generator 11(21)," on the correct EDG train and failed to manipulate the correct pushbuttons on the EDG local panel.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the equipment performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to implement maintenance procedures

involving the emergency diesel generators caused a second train of EDG to be made inoperable. As a result, on May 23, 2019, Unit 1 entered into an unplanned 24-hour shutdown action statement for both train A and B emergency diesel generators being inoperable.

Significance: The inspectors assessed the significance of the finding using Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." Specifically, the finding did not cause an actual loss of function of at least a single train for greater than 24 hours. The train B emergency diesel generator was restored to operable within 30 minutes.

Cross-Cutting Aspect: H.11 - Challenge the Unknown: Individuals stop when faced with uncertain conditions. Risks are evaluated and managed before proceeding. Specifically, the non-licensed operator failed to stop after depressing the "RESET" pushbuttons on the emergency diesel generator local panel and not receiving an expected response. Operations also failed to evaluate and manage the risk of sending a newly qualified non-licensed operator to perform a first-time evolution without supervision or assistance.

Enforcement:

Violation: Technical Specification 6.8.1.a, requires, in part, that written procedures shall be established, implemented, and maintained in accordance with Appendix A of Regulatory Guide 1.33, Revision 2, February 1978. Section 3.s.2.a of Appendix A to Regulatory Guide 1.33, Revision 2, requires, in part, that instructions for energizing, startup, shutdown, and changing modes of operation should be prepared for emergency power sources (e.g., diesel generators). The licensee established 0POP02-DG-0001, "Emergency Diesel Generator 11(21)," Revision 70, to meet the Regulatory Guide 1.33 requirement. Checklist 1, "DG Standby Operation Checklist," step 29.2 of the 0POP02-DG-0001 procedure states, "DEPRESS both 'EMERGENCY STOP CIRCUIT' RESET pushbuttons." Contrary to the above, on May 23, 2019, a non-licensed operator depressed both "EMERGENCY STOP CIRCUIT" RESET pushbuttons for the incorrect EDG train and depressed an additional set of pushbuttons after not receiving the expected response from the RESET pushbuttons. Specifically, the licensee depressed the RESET and STOP pushbuttons for the Unit 1, train B EDG. As a result, the train B, EDG was made inoperable during a time period where train A, EDG was inoperable for maintenance, and operations made an unplanned entry into Technical Specification 3.8.1.1.e, a 24-hour shutdown action statement.

Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

Observation: Semi-annual Trend Review	71152

The inspectors reviewed the licensee's corrective action program entries, maintenance activities, emergent maintenance issues, plant health reports, outage performance reviews, NRC generated condition reports, and NRC inspector walk downs.

The inspectors noted and documented the following issues and trends:

- There are site wide issues with procedure use and adherence. Inspectors have identified numerous issues while performing inspections (minor violations). Some of these include signing work order steps complete before the step was complete, equipment for risk significant work requiring entry into the Configuration Risk Management Program were not properly protected, inadequate independent verification of procedure steps, and failure to construct scaffolding in accordance with procedural guidance. In addition to these observations, the licensee identified similar

issues as illustrated in the South Texas Project 2019 mid-cycle review. The licensee completed a common cause evaluation and is in the process of implementing corrective actions.

- There have been several nuclear instrumentation issues and challenges, especially during the last few outages. These issues have resulted in issuance of a Licensee Event Report; an NRC-identified technical specification violation; and several emergent issues that have challenged operations (making technical specification calls), maintenance resources, and outage schedule delays and changes. The licensee has entered the issues into the corrective action program to perform an analysis and prescribe corrective actions, which is scheduled for completion in February 2020.

- The licensee has recently experienced several issues involving engineered safety feature load sequencers. Apart from one self-revealed technical specification violation (documented in this report in Section 71152), the licensee handled each issue appropriately and without issue. In conjunction with the inspector observations, the licensee had also identified a possible trend and entered the issue into the corrective action program for analysis. The analysis is scheduled for completion in February 2020.

EXIT MEETINGS AND DEBRIEFS

The inspectors verified no proprietary information was retained or documented in this report.

- On October 24, 2019, the inspectors presented the Occupational Radiation Safety inspection results to Ms. K. Harshaw, Vice President Regulatory Affairs and General Counsel, and other members of the licensee staff.
- On October 28, 2019, the inspectors presented the in service inspection results to Mr. J. Connolly, Executive Vice President and Chief Nuclear Officer, and other members of the licensee staff.
- On November 25, 2019, the inspectors presented the Emergency Plan In-Office Review inspection results to Mr. J. Enoch, Manager, Emergency Response, and other members of the licensee staff.
- On December 17, 2019, the inspectors presented the failure to report a change in medical condition of a licensed operator inspection results to Mr. L. Sterling, Regulatory Affairs Manager, and other members of the licensee staff.
- On December 19, 2019, the inspectors presented the biennial operator requalification inspection results to Mr. D. Breland, Supervisor, Operations Training, and other members of the licensee staff.
- On January 23, 2020, the inspectors presented the integrated inspection results to Ms. K. Harshaw, Vice President Regulatory Affairs and General Counsel, and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.04Q	Drawings	5R209F05017#2	Piping and Instrumentation Diagram Component Colling Water System	20
		5R289F05038#1	Piping and Instrumentation Diagram Essential Cooling Water System Train 1B	20
		5V119V10001#1	Piping and Instrumentation Diagram Essential Chilled Water System	35
		8T219F00031#1	Piping and Instrumentation Diagram Condenser Air Removal	26
	Procedures	0POP02-CC-0001	Component Cooling Water	51
		0POP02-CH-0001	Essential Chilled Water System	57
		0POP02-CR-0001	Main Condenser Air Removal	71
71111.04S	Corrective Action Documents	CR-YYYY-NNNN	2019-11970 2019-12022 2019-11969 2019-12023	
	Drawings	5R209F05019#2	Piping and Instrumentation Diagram Component Cooling Water System	18
		5R209F05020#2	Piping and Instrumentation Diagram Component Cooling Water System	17
71111.05A	Procedures	0MAB02-FP-0128	Fire Preplan Mechanical Auxiliary Building CCW Pump and Chiller, Train A	4
		0MAB20-FP-0129	Fire Preplan Mechanical Auxiliary Building Non-Radioactive Pipe Chase	3
		0MAB27-FP-0142	Fire Preplan Mechanical Auxiliary Building CCW Heat Exchangers	3
		1ECW53-FP-0600	Fire Preplan Essential Cooling Water Intake Structure Pump Room Train A	5
71111.05Q	Procedures	0MAB02-FP-0128	Fire Preplan Mechanical Auxiliary Building CCW Pump and Chiller, Train A	4
		0MAB20-FP-0129	Fire Preplan Mechanical Auxiliary Building Non-Radioactive Pipe Class	3
		0RCB63-FP-0211	Fire Preplan Reactor Containment Building SW Peripheral Area	3
		0RCB63-FP-0212	Fire Preplan Reactor Containment Building NW Peripheral Area	3

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		0RCB63-FP-0213	Fire Preplan Reactor Containment Building NE Peripheral Area	3
		2ECW58-FP-0605	Fire Preplan Essential Cooling Water Intake Structure Pump Room Train A	5
71111.06	Calculations	NC9701	Flooding Analysis: Electrical Auxiliary Building	5
	Drawings	6M-18-9-N-5039	Mechanical & Electrical Auxiliary Building Section C-C Area H	2
		6M18-9-N-5023	Mechanical Electrical Auxiliary Building Plan @ EL. 35'-0" Area H	6
		6M189N05024	Mechanical Electrical Auxiliary Building Plan @ EL. 35'-0", Area J	6
		9M-06-9-B-0155	Plumbing – M.E.A.B. Floor Plan EL. 35'-0" Area 18 & 19	6
		9M131A01030	Mechanical and Electrical Auxiliary Floor Plan EL. 10'-0" Unit 1	17
		9M131A01033	Mechanical and Electrical Auxiliary Building Floor Plan at Elev. 35'-0" and 41'-0	17
71111.08P	Corrective Action Documents	CR -YYYY-NNNN	2015-20733, 2017-13869, 2017-18341, 2018-6845, 2019-6008, 2019-7950, 2019-11368, 2019-11675, 2019-11865, 2019-12194, 2019-12243, 2019-12291, 2019-12444	
	Drawings	E10025E58	South Texas Units 1 & 2 Closure Head General Assembly Interface Inf. for RRVCH	4
		SB-9406-HL5007	Snubber and Mounting Supports	2
	Miscellaneous		South Texas Project, Units 1 AND 2 -Request for Relief RR-ENG-3-02 from ASME Code Requirements for Reactor Pressure Vessel Insert Non-Destructive Examination (TAC NOS. ME4764 AND ME4765)	04/05/2011
			South Texas Project, Unit 2 - Request for Relief NO. RR-ENG-3-20 for Extension of the Inspection Frequency of the Reactor Vessel Cold-Leg Nozzle to Safe-End Welds with Flaw Analysis (CAC NO. MF7428)	06/30/2016
		AE-NOC-12002347	South Texas Project, Units 1 and 2 - Request for Relief RR-ENG-3-04 to Apply Alternative to the American Society of Mechanical Engineers Boiler and Pressure Vessel Code	09/10/2012

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			Section XI Requirements for Examination of Class 1 and Class 2 Piping Welds (TAC NOS. ME70SS AND ME70S6)	
		MRP-058	Materials Reliability Program: Boric Acid Corrosion Guidebook, Revision 2: Managing Boric Acid Corrosion Issues at PWR Power Stations	2
		PQR-003	Procedure Qualification Record	0
		PQR-016	Procedure Qualification Record. P8-T-Ag-1	0
		PQR-035	Procedure Qualification Record for P8-T-Ag.	2
		PQR-037	Procedure Qualification Record for WPS P8-T-Ag, P8-A, P8-AT-Ag	09/05/1989
		PQR-040	Procedure Qualification Record for WPS P1-A/P1-A-LLh/P1-AT-Lh	11/17/1989
		PQR-046	Procedure Qualification Record for WPS P8-T-Ag and P8-AT-Ag	01/24/1990
		PQR-087A	Procedure Qualification Record for WPS P1-AT-Lh (CVN)	10/28/1991
		PQR-126	Procedure Qualification Record for WPS P1-T (CVN)	03/16/1995
		PQR-127	Procedure Qualification Record for WPS P1-T (CVN)	03/16/1995
		PQR-197	Procedure Qualification Record for WPS P8-T-Ag	04/10/2003
		PQR-199	Procedure Qualification Record for WPS P1-A-Lh	10/14/2003
		WPS P1-A-Lh	ASME Welding Procedure Specification (WPS). Single and Double Welded Groove, Fillet Welds Socket Welds, and other joint designs specified In WPS WJD (Weld Joint Design).	Revision 8
		WPS P1-T	ASME Welding Procedure Specification (WPS). Single and Double Welded Groove, Fillet Welds, Socket Welds, and other joint designs specified In WPS WJD (Weld Joint Design).	Revision 9
	NDE Reports	MT-2019-030 through MT-2019-65	Closure Head Bolting/ Closure Stud 1B through 36B	10/18/2019
		PT-2019-049	CVCS Low Pressure Letdown ORC Isolation Test Valve. FW0027 (Pipe to VLV CV0391).	10/16/2019
		PT-2019-052	CVCS Low Pressure Letdown ORC Isolation Test Valve. FW0028 (Pipe to Elbow)	10/16/2019

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		PT-2019-054	CVCS Low Pressure Letdown ORC Isolation Valve CV-0391. FW0009.	10/18/2019
		PT-2019-057	Flange to Upper Case / SIAPLH-2A0PCW1 / Pump 2A	10/21/2019
		PT-2019-059	Upper Case to Lower Case / SIAPLH-2A-PCW2 / Pump 2	10/20/2019
		PT-2019-060	Lower Case Seam Weld / SIAPLH-2A-PCW5 / Pump 2A	10/20/2019
		PT-2019-061	Nozzle to Upper Case / SIAPLH-2A-PCW4 / Pump 2A	10/21/2019
		UT-2019-031	PRZ-2-N4C/Safety Nozzle to Shell	10/16/2019
		UT-2019-042	PRZ-2-N4A/Relief Nozzle to Shell	10/19/2019
		UT-2019-043	PRZ-2-N2/Spray Nozzle to Shell	10/19/2019
		UT-2019-044	PRZ-2-N3/Safety Nozzle to Shell	10/19/2019
		UT-2019-048	RSG-2A-T1 / Tube plate to Lower Shell Barrel A	10/22/2019
		VCT-2019-041	EW-2188-HL5001 / U-Strap Support	10/24/2019
		VE-2019-001	BMI Penetration / No. 1-58	10/07/2019
		VE-2019-002	Reactor Vessel Closure Head/Bare Metal Visual Penetration Nozzles, 1-9, 14-23, 25-27, 29-61, 66, 68, 70, 72, 75-78, including vent pipe and general head area.	10/15/2019
		VE-2019-003	Reactor Vessel Closure Head/Bare Metal Visual Penetration Nozzles, 1-9, 14-23, 25-27, 29-61, 66, 68, 70, 72, 75-78, including vent pipe and general head area.	10/16/2019
		VE-2019-004	Reactor Vessel Closure Head/Bare Metal Visual Penetration Nozzles, 1-9, 14-23, 25-27, 29-61, 66, 68, 70, 72, 75-78, including vent pipe and general head area.	10/17/2019
		VE-2019-005	Reactor Vessel Closure Head/Bare Metal Visual Penetration Nozzles, 1-9, 14-23, 25-27, 29-61, 66, 68, 70, 72, 75-78, including vent pipe and general head area.	10/18/2019
		VT1/3-2019-094	Lower Case to Bottom Head / SIAPLH-2A-PCW3 / Pump 2A	10/21/2019
	Procedures	0PEP10-ZA-0004	General Ultrasonic Examination	8
		0PEP10-ZA-0010	Liquid Penetrant Examination (Color Contrast Solvent Removable)	6
		0PEP10-ZA-0019	Wet Fluorescent Magnetic Particle Examination For ASME Section XI PSI/ISI	4
		0PEP10-ZA-0024	ASME XI Examination for VT-1 and VT-3	5
		0PEP10-ZA-0054	ASME Section XI VE Visual Examinations	2
		0PGP03-ZE-0033	RCS Pressure Boundary Inspection for Boric Acid Leaks	13

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		0PGP03-ZE-0133	Boric Acid Corrosion Control Program	12
		0PM02-ZW-0005	Control of Postweld Heat Treat	5
		0PMP02-0001C	AWS-HVAC Welding Requirements	1
		0PMP02-ZW-0001	General Welding Requirements	12
		0PMP02-ZW-0001A	ASME Repair Replacement Welding Requirements	2
		0PMP02-ZW-0001B	ASME-ANSI B31.1 Welding Requirements	2
		0PMP02-ZW-0001D	Welding Documentation Requirements	2
		0PMP02-ZW-0002	Welding procedure Specification Preparation and Qualification	8
		0PMP02-ZW-0003	Welder Qualification and Certification	11
		0PMP02-ZW-0004	Control of Filler Materials	19
		0PMP02-ZW-0006	Arc Wire Thermal Spray Coatings	2
	Self-Assessments	CR 14-10410	Risk-Informed ISI Periodic Evaluation for South Texas Project Electric Generating Station Units 1 & 2 in Conjunction with End of the Third Interval, First Period.	06/24/2014
	Work Orders	W.O. 96011721	(IMB) LOOP 2 RCS Flow Transmitter FT-0429 ISOL VLV	0
		W.O. 96011791	CVCS Letdown Orifice Header Isolation Valve	0
		W.O. 96013680	Main Steam Isolation Valve 2D Above Seat Drain Isolation	0
		W.O.576310	Centrifugal Charging Pump 2A Discharge Vent Valve	0
71111.11B	Corrective Action Documents	2019-10407	MSIV Operability Surveillance Procedure not followed	09/20/2019
		2019-10562	Totalizer Event on 9/22/2019	09/24/2019
		2019-4962	Train A CRE/HVAC Inoperable	05/02/2019
		2019-8301	Inoperable Reactor Head Vent Valves	08/01/2019
		2019-9357	Inadequate Control Room Log entries	08/29/2019
	Miscellaneous	None	Simulator Differences List	09/10/2019
		None	2019 Biennial NRC Written Exams weeks 1 and 3	11/18/2019

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		None	NRC Annual Operating Tests Weeks 1 and 3	11/18/2019
		TT01	Simulator Transient Test 01 Manual Reactor Trip	11/04/2019
		TT02	Simulator Transient Test 2 Trip of all Main Feed Pumps	11/04/2019
	Procedures	0P0P01-ZA-0014	Licensed Operator License Maintenance	Revision 30
		0PGP03-ZA-0128A	Medical Exams-NRC Regulated	Revision 0
		0PGP03-ZT-0132	Licensed Operator Requalification	Revision 13
		0PNT01-TQ-1001	Examination Security	Revision 1
		0PNT01-ZA-0037	Simulator Configuration Control	Revision 13
		LOR-GL-0001	LOR Training Program Guidelines	Revision 35
		LOR-GL-0002	Licensed Operator Requal Annual/Biennial Evaluation Guidelines	Revision 28
		LOR-GL-0006	LOR Conduct of Simulator Training Guidelines	Revision 32
71111.11Q	Corrective Action Documents	CR-YYYY-NNNN	2019-14056 2014-12615 1995-13955 2004-4336	
	Miscellaneous		Maintenance Rule Expert Panel Meeting Minutes, March, May, June, July, August, September November 2019	
		17-YU-003, 2017	Essential Cooling Pond (ECP) Seepage Calculations	0
		MC-6498	Essential Cooling Pond Thermal Performance Analysis	1
		VTD-R165-0029	Instruction Manual for Essential Cooling Water Pump Motor	1
		VTD-STP1-0001	Rotating Equipment Oil Level Limits and Labels	4
		VTD-W120-0108	Large AC Motors – Lice Line D Vertical Induction Motors	5
	Procedures	0PMP04-EW-0001A	Essential Cooling Water Pump Maintenance	30
		0PMP05-EW-0001	Essential Cooling Water Pump Motor Inspection	13
		0PSP04-ZE-0313	Maintenance Rule Program	9
		SEG-0009	Maintenance Rule Basis Document Guideline	6
	Work Orders	Work Authorization Numbers	574254 592053 585021 612238	
71111.12	Corrective Action Documents	CR-YYYY-NNNN	2019-1762, 2019-2357, 2019-2393, 2019-4652, 2019-9269, 2019-8512, 2019-13994, 2019-4359,	

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			2019-13709, 2019-8052	
71111.13	Calculations	RA RICTCal	3505	
	Corrective Action Documents	CR-YYYY-NNNN	2019-14338	
	Procedures	0PGP03-ZO-0055	Protected Components	13
		0POP01-ZO-0006	Risk Management Actions (RMAs)	27
71111.15	Corrective Action Documents	CR-YYYY-NNNN	2019-12034, 2019-13137, 2019-13079, 2009-18939 2019-8731, 2014-8012, 2019-7580, 2019-5498 2019-13150, 2018-6459, 2019-13477	
	Drawings	5Q159F22540#2	Piping and Instrumentation Diagram Standby Diesel Jacket Water	22
	Miscellaneous	VTD-T147-0001	Terry Steam Turbine Manual	2
		VTD-T147-0008	Terry Turbine Maintenance Guide, Auxiliary Feedwater AFW Application	7
		VTD-W290-0029	Installation and Operation Manual Overspeed Trip Test Device for PG Governors	0
	Procedures	0PGP03-AZ-0133	Fluid Leak Management Program	6
		0PGP03-ZA-0514	Controlled System or Barrier Impairment	17
		0PGP03-ZE-0030	Control Room Envelope Habitability Program	4
		0PGP03-ZO-0046	RCS Leakage Monitoring	11
		0PMP04-AF-0002	Auxiliary Feedwater Pump Turbine and Governor Valve Maintenance	42
		0POP02-HE-0001	Electrical Auxiliary Building HVAC System	40
	Work Orders	Work Authorization Numbers	556056 489463	
71111.18	Corrective Action Documents	CR-YYYY-NNNN	2019-11901 2019-4165 2019-11971	
	Drawings	5R219F05028#2	Spent Fuel Pool Cooling and Cleanup System	31
	Procedures	0PMP09-PM-000B	Temporary Configuration Changes to Support Class 1E Train B MCC Outages	0
71111.19	Corrective Action Documents	CR-YYYY-NNNN	2019-11348, 2019-11348	
	Procedures	0PEP07-ZE-0002	LLRT Rig Operation	10

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		0PEP07-ZE-0003	Normal/Supplementary Purge Valve Failure/Troubleshooting	7
		0PEP07-ZE-0003	Normal/Supplementary Purge Valve Failure/Troubleshooting	7
		0PMP04-ZG-0093	Fisher Butterfly 12 and 48 in. Valve Maintenance	6
		0PSP05-RC-0417T	RCS Flow Transmitter Calibration	13
		0PSP11-HC-0001	LLRT M-41 Normal Containment Purge Exhaust	17
		0PSP11-HC-0001	LLRT M-41 Normal Containment Purge Exhaust	17
		0PSP11-XC-0004	LLRT Penetration: M-91 Auxiliary Airlock Door Seals	16
	Work Orders	Work Authorization Numbers	523127, 550267, 548433, 601368, 548433	
71111.20	Miscellaneous		2RE20 Shutdown Risk Assessment Report	08/27/2019
	Procedures	0POP02-RC-0003	Filling and Venting the Reactor Coolant System	45
		0POP03-ZG-0006	Plant Shutdown from 100% to Hot Standby	74
		0POP03-ZG-0007	Plant Cooldown	88
		0POP03-ZG-0007	Plant Cooldown	80
		0POP03-ZG-0010	Refueling Operations	81
		0POP08-FH-0001	Refueling Machine Operating Instruction	53
		0POP08-FH-0009	Core Refueling	50
71111.22	Corrective Action Documents	CR-YYYY-NNNN	2019-9708 2019-14780 2019-3044	
	Drawings	00009E0DJAA#1	Single Line Diagram 125VDC Class IE Distribution SWBD. E1A11 (Channel 1) (E.A.B.) Sheet 01	20
	Procedures	0POP07-FR-0006	FLEX Diesel Generator Performance Test	12
		0POP07-FR-0006	FLEX Diesel Generator Performance Test	12
		0PSP03-AF-0003	Auxiliary Feedwater Pump 13(23) Inservice Test	43
		0PSP03-DG-0003	Standby Diesel 13(23) Operability Test	64
		0PSP03-EW-0019	Essential Cooling Water System Train C Testing	56
71114.04	Corrective Action Documents	CR-YYYY-NNNN	2019-14047	
	Miscellaneous	NOC-AE-19003676	South Texas Project, Units 1 and 2; Docket Nos. STN 50-498; STN 50-499; Supplement to Changes to the South	8/8/2019

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			Texas Project Emergency Plan	
		NOC-AE-19003678	South Texas Project, Units 1 and 2; Docket Nos. STN 50-498; STN 50-499; Changes to the South Texas Project Emergency Plan	8/8/2019
	Procedures	0ERP01-ZV-IN10	Administration of Potassium Iodide	0
71124.01	Corrective Action Documents	CR-YYYY-NNNN	2018-03911, 2018-03912, 2018-04050, 2018-04527, 2018-04528, 2018-04757, 2018-04761, 2018-04933, 2018-06016, 2018-08247, 2018-09871, 2018-11562, 2018-11664, 2018-12157, 2018-12381, 2018-12559, 2018-12585, 2018-13229, 2018-14735, 2019-01215, 2019-03426, 2019-03573, 2019-07939, 2019-11659, 2019-12327	
	Miscellaneous		StandFast WB Count Report – (reporting in nCi)	10/23/2019
		18-12339	Ag-110 in CVCS during 1RE21	10/16/2018
		19-11442-1	DAC-hr Assessment for Condition Report 19-11442	10/18/2019
		19-3165-7	ALARA Review Package – 2RE20 Non-Rapid Refuel	10/01/2019
		19-3165-9	ALARA Review Package – 2RE20 Room 003 Activities	10/01/2019
	Procedures	0PEP02-ZM-0009	Spent Fuel Pool Storage and Work	10
		0PGP03-ZR-0048	Personnel Dosimetry Program	21
		0PGP03-ZR-0050	Radiation Protection Program	14
		0PGP03-ZR-0051	Radiological Access Controls/Standards	43
		0PRP01-ZA-0010	Radiation Protection Task Schedule	16
		0PRP01-ZA-0042	Job Coverage	1
		0PRP04-ZR-0013	Radiological Survey Program	39
		0PRP04-ZR-0015	Radiological Postings and Warning Devices	37
		0PRP04-ZR-0019	High Radiation Area Access Controls	0
		0PRP07-ZR-0016	Lockdown and Posting for Transfer of Spent Fuel/Irradiated Material Through Transfer Tube	10
	Radiation Surveys	21434	Air Sample Data Sheet - Room 4 B/C Enclosure – Change Out Filter	04/06/2018
		21441	Air Sample Data Sheet - B/C HEPA Enclosure Pre-Filter Change Out	04/07/2018
		21468	Air Sample Data Sheet - Reactor Cavity Decontamination	04/14/2018
		21498	Air Sample Data Sheet - “B” S/G Platform – Job Coverage of	04/19/2018

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			Nozzle Dams	
		21505	Air Sample Data Sheet - “B” S/G Platform – Job Coverage of Nozzle Dams	04/19/2018
		22373	Air Sample Data Sheet - Near S. Stairwell – Verify Conditions	10/01/2019
		Survey #	97442, 98130, 99286, 99321, 102863, 104598, 105041, 105049, 105646, 105785, 105796, 105992, 106223, 106234, 106258, 106397, 106565, 106797, 106801, 106824, 106862	
	Radiation Work Permits (RWPs)	2019-2-0145	2RE20 – Maintenance Support for Work In and Around Reactor Cavity, Spent Fuel Pool, and Transfer Canal (HRA)	0
		2019-2-0158	2RE20 – Reactor Head Lift Activities (LHRA)	0
		2019-2-0164	2RE20 – Retract / Re-Insert Thimble Tubes (LHRA)	0
		2019-2-0165	2RE20 – Maintenance and Support Work – Room 307 (LHRA)	0
		2019-2-0167	2RE20 – Mechanical Stress Improvement Process (MSIP) Work Activities (HRA)	0
		2019-2-0173	2RE20 – Maintenance on N2CVPSV3100 (LHRA)	0
	Self-Assessments	18-10431	Self-Assessment: FT-0428 Radiological Surveys	10/07/2018
		18-11300-1	Self-Assessment: 1RE21 Survey Snapshot	10/18/2018
		19-02643	RP Program Formal Self-Assessment	06/06/2019
71124.03	Corrective Action Documents	CR-YYYY-NNNN	2017-13657, 2017-13733, 2017-15060, 2017-16403, 2017-16501, 2017-17137, 2017-17894, 2017-19406, 2017-20490, 2017-24212, 2017-24235, 2018-01438, 2018-01607, 2018-01824, 2018-01837, 2018-04227, 2018-06620, 2018-08647, 2018-10747, 2019-05126, 2019-11442	
	Corrective Action Documents Resulting from Inspection	CR-YYYY-NNNN	2019-12240, 2019-12368	
	Miscellaneous		AirHawk SCBA Personnel Fit Test, Medical, and Respiratory Training dates for cost centers 87, 840, 841, 842, and 843	
			MSA CARE Certification for Darryl Malone (Vallen Freeport)	06/08/2018

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		000107	Vallen Freeport: Bauer Compressor Air Quality from February 1, 2018 - October 23, 2019	
		2019, Q3	Department of Transportation Audit: Vallen Freeport	09/23/2019
		Respirator Review	453, 537, 569, 574, 606, 1210, 3709, 3715, 3716, 3718, 3721, 3725, 3727, 3733, 3736	
	Procedures	0PEP05-ZH-0005	Non-Safety Related Filter Airflow Test	8
		0PEP05-ZH-0008	MAB, TSC and RCB HV AC In-Place HEPA Filter Leak Test	9
		0PG03-ZE-0004	Plant Surveillance Program	29
		0PGP-ZR-0050	Radiation Protection Program	14
		0PGP03-ZI-0015	Control and Use of Industrial Compressed Air and Gases	6
		0PGP03-ZR-0054	Respiratory Protection Program	17
		0PRP04-ZR-0016	Radiological Air Sampling and Analysis	32
		0PRP05-RA-0007	Grab Sample Collection of the (PIG) Continuous Atmospheric Monitors	16
		0PRP05-ZR-0030	Portable Air Monitor Instruments (AMS-4)	24
		0PRP06-ZR-0002	Respiratory Protection Equipment Issue and Return	27
		0PRP06-ZR-0004	Cleaning and Sanitizing of Respiratory Protection Equipment	9
		0PRP06-ZR-0005	Maintenance, Inspection, and Storage of Respiratory Protection Equipment	16
		0PRP06-ZR-0008	Air Quality Evaluation for Compressors or Pressurized Gas Cylinders	5
		0PRP06-ZR-0013	Respirator Fit Testing	9
		0PRP06-ZR-0016	Charging Breathing Air Cylinders	7
		0PSP11-HE-0001	Control Room Envelop Filter Airflow Capacity Test	12
		0PSP11-HF-0001	FHB Exhaust Filter Airflow Capacity Test	13
		0PSP11-ZH-0008	CRE and FHB HVAC In-Place HEPA Falter Leak Test	21
	Radiation Surveys	21434	Air Sample Data Sheet: Change Out of HEPA Pre-filter	04/11/2018
		21441	Air Sample Data Sheet - Pre-filter Change Out	04/11/2018
		21468	Air Sample Data Sheet - Cavity Decontamination	04/14/2018
		21498	Air Sample Data Sheet - Nozzle Dam Job Coverage	04/22/2018
		21505	Air Sample Data Sheet - Nozzle Dam Job Coverage	05/03/2018
		21669	Air Sample Data Sheet - Routine Unit 1 Radwaste Truck Bay	08/28/2018

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			(RWTB)	
		21882	Air Sample Data Sheet - Unit 1 Reactor Cavity	11/01/2018
		21884	Air Sample Data Sheet - Unit 1 Reactor Cavity	11/01/2018
		22338	Air Sample Data Sheet - RT-8011 Particulate Channel Alarm	09/23/2019
		22373	Air Sample Data Sheet - FT-0419 Leaking Transmitter	10/02/2019
		22476	Air Sample Data Sheet - Unit 2 Reactor Building 68' Grab Sample	10/10/2019
		22482	Air Sample Data Sheet - Unit 2 Reactor Building 68' Grab Sample	10/10/2019
	Radiation Work Permits (RWPs)	2018-0-0159	Preventative Maintenance and Repair of Equipment in the FHB Fuel Transfer Canal including RP Surveys and Decontamination	3
		2019-2-0115	2RE20 - Mini Decontamination of Reactor Cavity and Initial LISA and Tilt Pit Decontamination (LHRA)	0
		2019-2-0117	2RE20 - Major Decontamination of Reactor Cavity and LISA (LHRA)	0
		2019-2-0151	2RE20 - Perform Maintenance and Inspection in RCB/FHB Fuel Transfer Canals (LHRA)	0
		2019-2-0155	2RE20 - Refuel - Inspect/Clean/Measure Upper/Lower O-ring Grooves (LHRA)	0
		2019-2-0158	2RE20 - Reactor Head Lift Activities (LHRA)	0
		2019-2-0163	2RE20 - Disconnect/Reconnect Seal Table (LHRA)	0
		2019-2-0171	2RE20 - Remove/Reinstall Reactor Cavity Stairwell (HRA)	0
	Self-Assessments		Assessment/Benchmark Report: Respiratory Program 2018	08/29/2018
		MN-17-1-105942	Quality Monitoring Report: Radiological Instrumentation/Protective Equipment	04/02/2017
		MN-18-1-107276	Quality Monitoring Report: Radiological Surveys	10/23/2018
	Work Orders	WAN 546352	EAB and FHB HVAC In-Place Adsorber Leak Test: Unit 2 - CRE TRN "A" Clean Up Filter 21A/ 3V112VXV001	09/24/2019
		WAN 546353	EAB and FHB HVAC In-Place Adsorber Leak Test: Unit 2 CRE TRN "A" Clean Up Filter 21A / 3V112VXV001	09/24/2019
71151	Procedures	0PGP05-ZN-0007	Preparation and Submittal of NRC Performance Indicators	9
		Chapter 23	Conduct of Operations for Radiation Protection: Radiation Protection Performance Improvement Guideline	0

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71152	Corrective Action Documents	CR-YYYY-NNNN	2010-13994, 2019-13709, 2019-8052, 2019-4359, 2017-1786, 2017-17817, 2018-1529, 2018-3276, 2018-14380, 2019-9018, 2019-9019, 2019-7971, 2019-7483, 2019-12401, 2019-6155, 2019-5150, 2019-376, 2019-13709, 2019-8062, 2019-8052, 2019-4359, 2019-14697, 2019-13386, 2019-13436, 2019-14208, 2019-14736, 2019-14208, 2019-14743, 2019-13614, 2019-13950, 2019-14279, 2019-12597, 2019-9119, 2019-10504, 2019-11054, 2018-11855, 2018-3518, 2018-3559, 2019-7508, 2015-18703, 2017-15034, 2019-10837, 2019-2558, 2019-4575	