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

July 31, 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 – INTEGRATED INSPECTION REPORT 05000498/2020002 AND 05000499/2020002

Dear Mr. Powell:

On June 30, 2020, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at South Texas Project Electric Generating Station, Units 1 and 2. On July 9, 2020, 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.

Three findings of very low safety significance (Green), that involved violations of NRC requirements, are documented in this report. We are treating these findings as non-cited violations (NCVs) consistent with Section 2.3.2 of the Enforcement Policy.

Licensee-identified violations which were determined to be of very low safety significance are documented in this report. We are treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2 of the Enforcement Policy.

If you contest the violations or the significance or severity of the violations documented in this inspection report, 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 South Texas Project Electric Generating Station, Units 1 and 2.

If you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region IV; and the NRC Resident Inspector at South Texas Project Electric Generating Station, Units 1 and 2.

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,

Jeffrey Josey

Digitally signed by Jeffrey Josey
Date: 2020.07.31 11:32:19 -05'00'

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

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SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION, UNITS 1 AND 2 – INTEGRATED INSPECTION REPORT 05000498/2020002 AND 05000499/2020002 – July 31, 2020

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U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report

Docket Numbers:	05000498 and 05000499
License Numbers:	NPF-76 and NPF-80
Report Numbers:	05000498/2020002 and 05000499/2020002
Enterprise Identifier:	I-2020-002-0012
Licensee:	STP Nuclear Operating Company
Facility:	South Texas Project Electric Generating Station, Units 1 and 2
Location:	Wadsworth, TX 77483
Inspection Dates:	April 1, 2020 to June 30, 2020
Inspectors:	I. Anchondo-Lopez, Reactor Inspector J. Drake, Senior Reactor Inspector M. Holmberg, Senior Reactor Inspector G. Kolcum, Senior Resident Inspector A. Sanchez, Senior Resident Inspector C. Stott, Resident Inspector F. Thomas, Reactor 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. A licensee-identified non-cited violation is documented in report section 71152.

List of Findings and Violations

Inadequate Design Change Modification for Reactor Vessel Head Vent Solenoid Valves			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000498/2020002-01 Open/Closed	[H.14] - Conservative Bias	71111.17T
The inspectors identified a self-revealed, Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to recognize critical differences between the replacement controllers for the new solenoid valves that rendered both trains of the reactor vessel head vent system vulnerable to a common mode failure. Specifically, the licensee installed a modification in the reactor vessel head vent system that resulted in a loss of the system safety function for greater than the technical specification allowed outage time.			

Failure to Follow Procedure During A Surveillance Results in an Inoperable Train of Essential Cooling Water			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000498,05000499/2020002-02 Open/Closed	[H.12] - Avoid Complacency	71111.22
A self-revealed Green non-cited violation of Technical Specification 6.8.1.a, Regulatory Guide 1.33, Section 3.m, "Service Water System," was documented for the failure to follow the surveillance procedure for the Unit 2, train A, essential cooling water (ECW) which challenged system operability. Specifically, plant equipment operators in the ECW pump room failed to implement step 5.2.2 of Procedure 0PSP03-EW-0017, "Essential Cooling Water System Train A Testing," Revision 41, to verify ECW self-cleaning strainer was running, instead, the plant equipment operator performed step 5.4.2 that secured the ECW self-cleaning strainer.			

Inadequate Risk Assessment of Switchyard Activities Results in Loss of 345kV South Bus			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Initiating Events	Green NCV 05000498,05000499/2020002-03 Open/Closed	[H.1] - Resources	71153
The inspectors reviewed a self-revealing Green non-cited violation of 10 CFR 50.65(a)(4) for the failure to perform an adequate risk assessment to manage the increase in risk of performing activities in the switchyard. Specifically, on March 24, 2020, the licensee failed to			

implement risk mitigative actions during switchyard maintenance activities, and the result was the loss of the 345kV south bus, partial loss of offsite power to both Units 1 and 2.

Additional Tracking Items

Type	Issue Number	Title	Report Section	Status
LER	05000498,05000499/ 2020-001-00	LER 2020-001-00 for South Texas Project, Units 1 and 2, Automatic Actuation of Emergency Diesel Generators due to Lockout of Switchyard Electrical Bus	71153	Closed
LER	05000499/2019-002-00	LER 2019-002-000 for South Texas Project, Unit 2, Incorrect Sequencer Part Replacement Leads to Undervoltage Signal and Valid Actuation of Emergency Diesel Generator.	71153	Closed
LER	05000499/2019-001-00	LER 2019-001-00 for South Texas Project, Unit 2, Equipment Clearance Order Error Leads to Loss of Primary Containment Integrity	71153	Closed
LER	05000498/2019-002-00	LER 2019-002-00 for South Texas Project, Unit 1, Condition Prohibited by Technical Specifications and Loss of Safety Function due to Inoperable Reactor Head Vent Throttle Valves	71153	Closed
LER	05000498/2019-002-01	LER 2019-002-01 for South Texas Project, Unit 1, Condition Prohibited by Technical Specifications and Loss of Safety Function due to Inoperable Reactor Head Vent Throttle Valves	71153	Closed

PLANT STATUS

Unit 1 began the inspection period in Mode 6 during refueling outage 1RE22. The main generator breaker was closed on April 17, 2020, ending the refueling outage. Unit 1 reached rated thermal power on April 22, 2020, and remained there for the rest of the period.

Unit 2 operated at rated thermal power for the entire 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/readingrm/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 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.

Starting on March 20, 2020, in response to the National Emergency declared by the President of the United States on the public health risks of the coronavirus (COVID-19), resident inspectors were directed to begin telework and to remotely access licensee information using available technology. During this time the resident inspectors performed periodic site visits each week and during that time conducted plant status activities as described in IMC 2515, Appendix D; observed risk-significant activities: and completed on site portions of IPs. In addition, resident and regional baseline inspections were evaluated to determine if all or portions of the objectives and requirements stated in the IP could be performed remotely. If the inspections could be performed remotely, they were conducted per the applicable IP. In some cases, portions of an IP were completed remotely and on site. The inspections documented below met the objectives and requirements for completion of the IP.

REACTOR SAFETY

71111.01 - Adverse Weather Protection

Seasonal Extreme Weather Sample (IP Section 03.01) (2 Samples)

(1) The inspectors evaluated readiness for seasonal extreme weather conditions prior to the onset of hurricane season for the following systems:

- The Units 1 and 2, essential cooling water pond (ultimate heat sink)
- The South Texas Project 345kV switchyard

(2) The inspectors evaluated readiness for seasonal extreme weather conditions prior to the onset of summer heat conditions for the following systems:

- Units 1 and 2, standby transformers
- Units 1 and 2, engineered safety features transformers

External Flooding Sample (IP Section 03.03) (1 Sample)

(1) The inspectors evaluated flood protection barriers, mitigation plans, procedures, and equipment are consistent with the licensee's design requirements and risk analysis assumptions for coping with external flooding:

Units 1 and 2, essential cooling water intake structure, emergency diesel generator flood panel areas on May 26, 2020, and this closes out the partial sample documented in inspection report STP2020001, Section 71111.01

71111.04 - Equipment Alignment

Partial Walkdown Sample (IP Section 03.01) (6 Samples)

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

(1) Unit 1, train C emergency diesel generator following restoration from surveillance activities May 5, 2020
(2) Unit 1, train B low head safety injection while train C equipment was out of service for planned maintenance on May 8, 2020
(3) Unit 2, train B component cooling water while train C was out of service for maintenance on May 12, 2020
(4) Unit 1, train B emergency diesel generator while train C was out of service for maintenance on May 12, 2020
(5) Unit 1, train C main steam system while train D was out of service for planned maintenance May 14, 2020
(6) Unit 2, turbine driven auxiliary feedwater pump while train C emergency diesel generator was out of service for planned maintenance on June 11, 2020

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

(1) The inspectors evaluated system configurations during a complete walkdown of the Unit 2 trains A, B, and C emergency diesel generators during the week of June 22, 2020

71111.05 - Fire Protection

Fire Area Walkdown and Inspection Sample (IP Section 03.01) (5 Samples)

The inspectors evaluated the implementation of the fire protection program by conducting a walkdown and performing a review to verify program compliance, equipment functionality, material condition, and operational readiness of the following fire areas:

(1) Unit 2, train C component cooling water pump and heat exchanger rooms, Fire Area 27 on May 19, 2020
(2) Unit 2, train B essential cooling water pump and traveling water screen rooms, Fire Area 57, on May 27, 2020
(3) Unit 2, standby transformer, Fire Area 99, on May 27, 2020

(4) Unit 2, electrical auxiliary building train B cable spreading/power cabling area, Fire Area 31 on June 22, 2020
(5) Unit 2, electrical auxiliary building train A electrical penetration area, Fire Area 02 on June 22, 2020

71111.07A - Heat Sink Performance

Annual Review (IP Section 03.01) (1 Sample)

The inspectors evaluated readiness and performance of:

(1) Unit 1, train B emergency diesel lube oil and jacket water heat exchangers the week of May 1, 2020, and this closes out the partial sample documented in inspection report STP2020001, Section 71111.07A

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 March 18, to April 3, 2020:

03.01.a - Nondestructive Examination and Welding Activities

- Magnetic Particle Examinations: Main Steam System - Pipe Lug Welds 30-MS-1001-GA2/ 27PL1-27PL8/30-MS-1001-GA2 and Reactor Vessel Closure Head Stud 2A
- Ultrasonic Examinations: Pressurizer Pipe-to-Safe-end Overlay Weld 14-WOL-N2, Pressurizer Spray Nozzle-to-Safe End Weld PRZ-1-N2-SE-WOL, Control Rod Drive Housing No. 68 Lower Weld RRVH-CRD-68L, Reactor Coolant System: Branch Connection-to-Bent Pipe 2-RC-1220-BB1, Reactor Coolant System: Pipe-to-Branch Connection 4-RC-1323-BB1 Weld 4 and Reactor Coolant System: Pipe-to-Branch Connection 4-RC-1126-BB1 Weld 6
- Visual Examinations (VT-1): Reactor Vessel Closure Head Nuts 1A through 36A
- Gas Tungsten Arc Weld (Manual): Essential Cooling Water System - Pipe welds HFW-1402, 1405, 1408 - Repair Plan 1-18-003, Work Order 6009129 and Work Authorization No. 68994

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

- Evaluations: 19-3869-3 - Centrifugal Charging Pump 1B Outboard Seal is leaking, 20-62-2 - Leakage from High Head Safety Injection Pump 1C Mechanical Seal and Condition Report Engineering Evaluation (CREE) No. 17-16232-2 - Code Case N-566-2 Engineering Evaluation Residual Heat Removal System Heat Exchanger 1B Flange

- Corrective Actions: 19-3645 - Wet and Discolored Deposits at the Packing Gland of 1-RH-0067A, 19-7057- Dry and White Deposits at the Tubesheet to Flange of the 1B Residual Heat Removal Heat Exchanger and 19-7066 - Significant Dry and Discolored Deposits at the Packing Gland of 1-SI-FCV-0852

03.01.d – Pressurized-Water Reactor Steam Generator Tube Examination Activities.

- Eddy current examination of the tubes in the Unit 1 steam generators A, B, C and D

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 Unit 1 operations crew respond to a degraded condition which caused an increase of unidentified reactor coolant leakage on June 18, 2020.

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

(1) The inspectors observed and evaluated a Unit 1 operations crew in the simulator for a training scenario involving a steam leak in containment and a loss-of-coolant accident on June 29, 2020.

71111.12 - Maintenance Effectiveness

Maintenance Effectiveness (IP Section 03.01) (1 Sample)

The inspectors evaluated the effectiveness of maintenance to ensure the following structures, systems, and components (SSCs) remain capable of performing their intended function:

(1) Unit 1, train B emergency diesel generator's status in 10 CFR 50.65(a)(1) due to continued unavailability time as a result of maintenance, scheduling, and equipment issues and closes out the partial sample documented in Inspection Report STP2020001, Section 71111.12

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Risk Assessment and Management Sample (IP Section 03.01) (7 Samples)

The inspectors evaluated the accuracy and completeness of risk assessments for the following planned and emergent work activities to ensure configuration changes and appropriate work controls were addressed;

(1) Unit 1, unplanned risk due to train B essential cooling water maintenance resulting in entering the Configuration Risk Management Program (CRMP) on February 9, 2020, and this closes out the partial sample documented in Inspection Report STP2020001, Section 71111.13

(2) Unit 1, unplanned risk due to maintenance on train B emergency diesel generator going longer than expected and resulted in entering the CRMP on February 17, 2020, and this closes out the partial sample documented in Inspection Report STP2020001, Section 71111.13
(3) Unit 1, train D 125vdc battery and inverter maintenance that resulted in the planned entry into the CRMP on February 19-20, 2020, and this closes out the partial sample documented in inspection report STP2020001, Section 71111.13
(4) Unit 1, train A 125vdc battery and inverter maintenance that resulted in the planned entry into the CRMP on February 26-27, 2020, and this closes out the partial sample documented in Inspection Report STP2020001, Section 71111.13
(5) Unit 1, train B 125vdc battery and inverter maintenance that resulted in the planned entry into the CRMP on March 4-5, 2020, and this closes out the partial sample documented in Inspection Report STP2020001, Section 71111.13
(6) Unit 1 entered the CRMP for isolating the 1A safety injection accumulator due to leakage through check valve RH-32A on April 30, 2020
(7) Unit 1, train D battery installation of a temporary modification that jumpered out battery cell number 5 and resulted in entry into the CRMP on June 13, 2020

71111.15 - Operability Determinations and Functionality Assessments

Operability Determination or Functionality Assessment (IP Section 03.01) (4 Samples)

The inspectors evaluated the licensee's justifications and actions associated with the following operability determinations and functionality assessments:

(1) Unit 1, operability determination of the reactor vessel head studs that exceeded the preload elongation tolerances during reactor vessel head tensioning on April 5, 2020
(2) Unit 1, operability evaluation of train C diesel generator that failed to complete its 5-minute cooldown period after a surveillance run on April 9, 2020
(3) Unit 1, operability evaluation of the train A high head safety injection pump that failed to meet acceptance criteria during comprehensive pump test on March 19, 2020
(4) Unit 1, train A residual heat removal (RHR) and low head safety injection systems due to the train A safety injection accumulator leakage into the RHR heat exchanger

71111.17T - Evaluations of Changes, Tests, and Experiments

Sample Selection (IP Section 02.01) (27 Samples)

The inspectors reviewed the following evaluations, screenings, and/or applicability determinations for 10 CFR 50.59 from May 2017 through May 2020.

(1) 15-22176-3 “Use of Speed Crete as welded joint sealant in prestressed concrete embedded cylinder pipe.”
(2) 17-118-148 “Engineering Evaluation of Parker Fitting 48F-5-2 for use in the Standby Emergency Diesel Generator Starting Air System Air Starting Valve”
(3) T1-12-26471-1 “Installation of an Upstream Pressure Control Valve to Prevent Cavitation of N1CPPCV5805N (Mixed Bed Service Vessel N Sample Cooler Inlet Pressure Control Valve)”
(4) T1-20-45-1 “Auxiliary Feedwater Pump 14 Terry Turbine Alternate Drain line”
(5) 20-2312-6 “Installation of Metal Oxide Varistors (MOV's) For Unit 1 Rx Vessel Head Vent Throttle Valves Positioners HY0601 and HY0602”

(6) TL2-18-10183 “High Side Tubing Crimp on Unit 2 Reactor Coolant System Loop 2B Flow Transmitter D2RCFT0428”
(7) 17-23295-3 “Install Pipe Cap Downstream of Safety Injection Accumulator Nitrogen Supply Vent Valve, A1SIHCV0900”
(8) 16-128-325 “Evaluation of Belleville Washer”
(9) 19-872-1 “Extend the Quality Life (QL) of the Primary Sampling System’s Target Rock Solenoid Valves and Reed Switches”
(10) 18-5242-2 “Replacement Valve for Application 2R172TCV0392”
(11) 18-11062-2 “Update Vendor Drawing and Setpoint List for CCP 1B Lube Oil Pressure Switch”
(12) 15-14074-4 “Create Environment Data Table for Rosemount Transmitters in EQDB Database”
(13) 15-20773-1 “Validate and Update Loading for 125 VDC Distribution Panel PL039A”
(14) 15-20773-2 “Validate and Update Loading for remaining circuits on Class 1E 125 VDC Distribution Panels PL039B, PL039C, PL040A, PL 139A, PL 139B, and PL 139C”
(15) 16-128-30 “Rosemount Differential Pressure Transmitter 1151DP Replacement Part”
(16) 16-128-94 “Alternate Replacement Limitorque Actuator for B320-10”
(17) 16-2214-10 “Revise Environmental Qualification DBD to address QDPS On-going Qualification in Mild Environment”
(18) 12-31926-43 “Class 1E 4.16 KV Circuit Breaker Replacements”
(19) 17-20542-7 “Replace Emergency Transformer 138 KV Circuit Switch Operator; ## 81”
(20) 17-22335-2 “Replace 27C Relay (ITE J13) Associated in Control Circuit for Containment Spray Pump 1B”
(21) 15-16599-37 “Application of The Mechanical Stress Improvement Process (MSIP) To Reactor Vessel Nozzles”
(22) 15-110072-2 “Replace Unit 1 Reactor Vessel Head Vent Throttle Valves with Upgraded Bolted Bonnet Design”
(23) 14-12285-20 “Perform a 50.59 Screen/Evaluation to address concerns raised in NSAL 14-5”
(24) 16-5792-13 “Update UFSAR 15.1.5 to incorporate revised HZP MSLB core response analysis due to RCCA D-6 removal”
(25) 18-2757-11 “Temporary Installation of a Portable Heater/Fan Unit in Doorway (Door 307) of Room 321 (E1C11 125 Volt QC Battery Rack Room) on the 60-foot Elevation of the Electrical Auxiliary Building (EAB)”
(26) 19-10118-9 “Replace Primary Fuses in Aux Relay Panel for Unit 1 Reactor Vessel Head Vent Valve HCV0601 and 602”
(27) 18-88-275 “Replacement Size 3 and 4 Magnetic Motor Starters for Class 1E Application”

71111.18 - Plant Modifications

Temporary Modifications and/or Permanent Modifications (IP Section 03.01 and/or 03.02) (2 Samples)

The inspectors evaluated the following temporary or permanent modifications:

(1) Unit 1, implementation of the exigent Technical Specification change to lower pressure in all three trains of safety injection accumulators to stop nitrogen gas accumulation in the train A RHR heat exchanger on May 29, 2020

(2) Unit 1, train D 125Vdc battery cell number 5 jumper due to degraded cell voltage on June 13, 2020

71111.19 - Post-Maintenance Testing

Post-Maintenance Test Sample (IP Section 03.01) (6 Samples)

The inspectors evaluated the following post maintenance test activities to verify system operability and functionality:

(1) Unit 1, train A steam generator narrow range level set 3 L-0518 following card replacement on February 8, 2020
(2) Unit 1, train C residual heat removal heat exchanger component cooling water return flow valve FV-4565 following solenoid valve replacement on March 11, 2020
(3) Unit 1, auxiliary air lock following hydraulic solenoid valve replacement on April 9, 2020
(4) Unit 1, train A low head safety injection pump discharge to cold leg check valve following repair on April 14, 2020
(5) Unit 1, train C essential chiller 12C following emergent maintenance to replace the temperature element and temperature control module on May 11, 2020
(6) Unit 1, operating crew respond to a degraded condition which caused an increase of unidentified reactor coolant leakage on June 18, 2020

71111.20 - Refueling and Other Outage Activities

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

(1) The inspectors evaluated refueling outage 1RE22 activities from March 13 through April 17, 2020, which completes the partial sample documented in Inspection Report STP2020001, Section 71111.20

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

Surveillance Tests (other) (IP Section 03.01) (7 Samples)

(1) Unit 1, train C emergency diesel generator surveillance test on March 11, 2020, and this closes out the partial sample documented in Inspection Report STP2020001, Section 71111.22
(2) Unit 1, trains A, B, and C emergency diesel interdependence test on April 2, 2020
(3) Unit 1, high pressure turbine load swing test on April 20, 2020.
(4) Unit 1, train B 125Vdc battery monthly surveillance test on May 11, 2020
(5) Unit 2, train S reactor trip breaker testing on May 22, 2020
(6) Unit 1, loop 4 set 4 delta T and T average calibration on June 4, 2020
(7) Unit 1, loop 2 set 2 delta T and T average calibration on June 9, 2020

Inservice Testing (IP Section 03.01) (3 Samples)

(1) Unit 1, train B residual heat removal inservice test on March 11, 2020, and this closes out the partial sample documented in inspection report STP2020001, Section 71111.22
(2) Unit 2, turbine driven auxiliary feedwater pump surveillance test on June 18, 2020
(3) Unit 2, train A essential cooling water in-service surveillance test on June 20, 2020

Containment Isolation Valve Testing (IP Section 03.01) (1 Sample)

(1) Unit 2, auxiliary air lock local leak rate test on May 11, 2020

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

MS05: Safety System Functional Failures (SSFFs) Sample (IP Section 02.04) (2 Samples)

(1) Unit 1, April 1, 2019 through March 31, 2020
(2) Unit 2, April 1, 2019 through March 31, 2020

BI01: Reactor Coolant System (RCS) Specific Activity Sample (IP Section 02.10) (2 Samples)

(1) Unit 1, April 1, 2019 through March 31.2020
(2) Unit 2, April 1, 2019 through March 31, 2020

BI02: RCS Leak Rate Sample (IP Section 02.11) (2 Samples)

(1) Unit 1, April 1, 2019 through March 31, 2020
(2) Unit 2, April 1, 2019 through March 31, 2020

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) (1 Sample)

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

(1) An electrical supervisor manipulated plant equipment without permission and procedure during walkdown of Unit 1 train C essential chiller as documented in Condition Report CR 2019-10223

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

Event Report (IP Section 03.02) (4 Samples)

The inspectors evaluated the following licensee event reports (LERs):

(1) LER 05000499/2019-001-00, "Equipment Clearance Order Error Leads to Loss of Primary Containment Integrity" (ADAMS Accession No.: ML19119A270). This licensee event report is closed.
(2) LER 05000499/2019-002-00, "Incorrect Sequencer Part Replacement Leads to Under voltage Signal and Valid Actuation of Emergency Diesel Generator" (ADAMS Accession No.: ML19353C818). The circumstances surrounding this LER were previously documented in Inspection Report 05000498/2019004 and 05000499/2019004 in the Inspection Results Section of that report. This licensee event report is closed.
(3) LER 05000498;05000499/2020-001-00 "Automatic Actuation of Emergency Diesel Generators due to Lockout of Switchyard Electrical Bus" (ADAMS Accession Number ML20143A188). This licensee event report is closed.
(4) LER 05000498/2019-002-01, Condition Prohibited by Technical Specifications and Loss of Safety Function due to Inoperable Reactor Head Vent Throttle Valves (ADAMS Accession No. ML19331A039) The inspection conclusions associated with this LER are documented in this report under Inspection Results Section 71111.17T.

INSPECTION RESULTS

<table>
<tr><td colspan="4">Inadequate Design Change Modification for Reactor Vessel Head Vent Solenoid Valves</td></tr>
<tr><td>Cornerstone</td><td>Significance</td><td>Cross-Cutting Aspect</td><td>Report Section</td></tr>
<tr><td>Mitigating Systems</td><td>Green
NCV 05000498/2020002-01
Open/Closed</td><td>[H.14] - Conservative Bias</td><td>71111.17T</td></tr>
<tr><td colspan="4">The inspectors identified a self-revealed, Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to recognize critical differences between the replacement controllers for the new solenoid valves that rendered both trains of the reactor vessel head vent system vulnerable to a common mode failure. Specifically, the licensee installed a modification in the reactor vessel head vent system that resulted in a loss of the system safety function for greater than the technical specification allowed outage time.</td></tr>
<tr><td colspan="4">Description: On October 30, 2018, the licensee replaced A1RCHCV0601 and B1RCHCV0602, the solenoid operated valves for the reactor vessel head vent system, with a new bolted bonnet design and new positioner controllers. The engineering change package failed to recognize that the new controller circuitry had overvoltage protection system that shorted the power supply to ground when voltage limits for the controller card were exceeded. Additionally, the licensee failed to recognize that the DC power supply in use was not well regulated and was subject to large voltage spikes under varying conditions. On November 2, 2018, the licensee noted that power supply fuses for HCV0601 had again blown.

On December 31, 2018, reactor head vent throttle valve (RHVTV) 'A' (HCV0601) unexpectedly auto transferred to the auxiliary shutdown panel and the control room declared</td></tr>
</table>

the valve inoperable. With one train of the reactor vessel head system inoperable, the licensee failed to establish additional operator actions to verify the operability of the remaining train.

On July 30, 2019, a training instructor with students discovered that reactor vessel head vent valve 'B' (HCV0602) control unit had a blown fuse and the control room declared valve HCV0602 inoperable. Following a review of records and logs, Engineering determined that the fuse to reactor vessel head vent valve 'B' had blown on or about June 24, 2019. This failure would have prevented the fulfillment of the safety function needed to mitigate the consequences of an accident (both vent valves being declared inoperable at the same time) and exceeded the technical specification action statement allowed outage time of 30 days. This event is considered a loss of a safety function.

The licensee implemented multiple corrective actions attempting to correct the condition before the underlying cause was fully understood. These included installing higher amperage fuses, replacing the terminal box noise suppressors, installing metal oxide varistor at the positioners, and installing an RC (resistive capacitive) filter across the 125VDC at the positioners HCV0601 and HCV0602 as additional protection. After contacting the vendor, the licensee determined that the underlying cause of the failures was an inadequately regulated DC power supply and decided that installation of a better regulated DC power supply, to filter any voltage transients caused by electromagnetic or radio frequency interference, was necessary to correct the problem.

Corrective Actions: This condition has been entered into the corrective action program as Condition Report CR-2020-5798. As an interim action, the licensee powers down the reactor vessel head vent positioners before any planned start of the emergency diesel generators or their fans and checks the power fuses after any unplanned start of the emergency diesel generators or their fans.

Corrective Action References: Condition Report CR-2020-5798

Performance Assessment:

Performance Deficiency: The licensee's failure to recognize critical differences between the replacement controller's overvoltage protection system was a performance deficiency. Specifically, the failure to understand the differences between the original valve controller and the replacement introduced a common mode failure to both trains. This combined with a failure to implement adequate compensatory measures following inadequate corrective actions resulted in a loss of safety function for greater than technical specification allowed outage time.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the design control 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.

Significance: The inspectors assessed the significance of the finding using Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." This failure could have prevented the fulfillment of the safety function needed to mitigate the consequences of an accident (both vent valves being declared inoperable at the same time) and exceeded the

technical specification action statement allowed outage time of 30 days. This event is considered a loss of a safety function, but the finding did not result in a loss of PRA function of a single train, or multiple trains of a technical Specification piece of equipment for greater than 24 hours or allowed outage time, and is therefore of very low safety significance, Green.

Cross-Cutting Aspect: H.14 - Conservative Bias: Individuals use decision-making-practices that emphasize prudent choices over those that are simply allowable. A proposed action is determined to be safe in order to proceed, rather than unsafe in order to stop. The licensee failed to fully evaluate the design of the overvoltage protection system for the new controllers and assumed it functioned similar to the overvoltage protection of the original controllers., .

Enforcement:

Violation: Violation: 10 CFR Part 50, Appendix B, Criterion III, "Design Control," requires, in part, that the design control measures shall provide for verifying or checking the adequacy of design by the performance of a suitable testing program. The verifying or checking process shall be performed by individuals or groups other than those who performed the original design, but who may be from the same organization. Where a test program is used to verify the adequacy of a specific design feature in lieu of other verifying or checking processes, it shall include suitable qualifications testing of a prototype unit under the most adverse design conditions. Design changes, including field changes, shall be subject to design control measures commensurate with those applied to the original design and be approved by the organization that performed the original design unless the applicant designates another responsible organization.

Contrary to the above, the licensee failed to ensure that the design changes that replaced the reactor vessel head vent valve position controllers were fully evaluated to fully evaluate the design of the overvoltage protection system for the new controllers and assumed it functioned similar to the overvoltage protection of the original controllers. This evaluation should have ensured that the circuitry was compatible with the DC power supply providing power to the valves and controllers.

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 During a Surveillance Results in an Inoperable Train of Essential Cooling Water

Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000498,05000499/2020002-02 Open/Closed	[H.12] - Avoid Complacency	71111.22

A self-revealed Green non-cited violation of Technical Specification 6.8.1.a, Regulatory Guide 1.33, Section 3.m, "Service Water System," was documented for the failure to follow the surveillance procedure for the Unit 2, train A, essential cooling water (ECW) which challenged system operability. Specifically, plant equipment operators in the ECW pump room failed to implement step 5.2.2 of procedure 0PSP03-EW-0017, "Essential Cooling Water System Train A Testing," Revision 41, to verify ECW self-cleaning strainer was running, instead, the plant equipment operator performed step 5.4.2 that secured the ECW self-cleaning strainer.

Description: On June 20, 2020, during a Unit 2, train A, ECW surveillance, 0PSP03-EW-0017, "Essential Cooling Water System Train A Testing," Revision 41, the control room requested the plant equipment operator to perform step 5.2.2 to verify the ECW strainer was running. The plant equipment operator (PEO1) repeated the request back to the control room operator correctly, to perform Step 5.2.2. With the concurrence of an experienced plant equipment operator (PEO2) in the field peer checking, PEO1 performed step 5.4.2 to remove the strainer from service. A visual and audible alarm immediately sounded in the control indicating that the train was in an abnormal alignment. Operations immediately declared the train A ECW inoperable. Control room operators immediately asked the plant equipment operators (PEO1 and PEO2) to stop any further actions, and using the 0POP02-EW-0001, "Essential Cooling Water Operations," Revision 83, promptly restored the ECW train to an operable status.

The license determined that the PEOs (performer and peer checker) were both present at the pre-job brief. During the brief, operations discovered that PEO1 had never performed this surveillance, so PEO2 was assigned to peer-check the evolution. PEO1 was seen highlighting steps to be performed in the field. After the issue, PEO1 stated that it was loud and could not hear very well, the first step highlighted was step 5.4.2, not step 5.2.2, and the peer-checker was rendered useless by not providing appropriate oversight of this activity.

The licensee's prompt human performance checklist determined that the PEO1 performed the wrong step, therefore failed to operate the plant in accordance with the procedure and was over reliant on the highlighted portions of the procedure. The high noise level challenged communications.

Corrective Actions: Unit 2 control room operations suspended the surveillance, restored train A ECW to an operable status within 4-minutes per a normal system operating procedure. Following an investigation, a lesson's learned was distributed to the rest of the operations department.

Corrective Action References: Condition Report CR 2020-6765

Performance Assessment:

Performance Deficiency: The failure to follow an operations surveillance procedure involving safety-related equipment, which operability, was a performance deficiency. Specifically, while performing a surveillance on the Unit 2 train A ECW, plant equipment operators in the field performed step 5.4.2 of Procedure 0PSP03-EW-0017, "Essential Cooling Water System Train A Testing," Revision 41, to secure the essential cooling water self-cleaning strainer instead of the directed step 5.2.2 which was to ensure that the essential cooling water self-cleaning strainer was running. This inappropriate action challenged train A ECW operability. Unit 2 operators restored the train to its original configuration within 4 minutes.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the human 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 plant equipment operator's human performance error resulted in an inoperable ECW train and an unexpected entry into a 7-day Technical Specification action statement.

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 result in a loss of PRA function of a single train, or multiple trains of a technical specification piece of equipment for greater than 24 hours or allowed outage time, and is therefore of very low safety significance, Green.

Cross-Cutting Aspect: H.12 - Avoid Complacency: Individuals recognize and plan for the possibility of mistakes, latent issues, and inherent risk, even while expecting successful outcomes. Individuals implement appropriate error reduction tools. Specifically, the Unit 2 plant equipment operators did not consider potential undesirable consequences of their actions before performing surveillance procedure steps and did not implement appropriate error-reduction tools.

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.m, "Procedures for Startup, Operation, and Shutdown of Safety-Related PWR Systems," of that appendix, requires, in part, that that the instructions for energizing, startup, shutdown, and changing mode of operation should be prepared for the service water system (essential cooling water at South Texas Project). The licensee established 0PSP03-EW-0017, "Essential Cooling Water System Train A Testing," Revision 41, to meet the Regulatory Guide requirement. Step 5.2.2 states, "Verify "ECW SELF CLEANING STRAINER 1A(2A)" is running."

Contrary to the above, on June 20, 2020, plant equipment operators failed to follow the step 5.2.2 and actually performed step 5.4.2 which secured the essential cooling water self-cleaning strainer, thereby challenging train A inoperability. This was an unplanned 7-day shutdown action statement of Technical Specification 3.7.7.

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

Licensee-Identified Non-Cited Violation	71152

This violation of very low safety significance was identified by the licensee and has been entered into the licensee corrective action program and is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

Violation: This violation of very low safety significance was identified by the licensee and 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.

Technical Specification 6.8.1.a, Regulatory Guide 1.33, Appendix A, 1978, Section 9, states 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.

Contrary to the above, on September 17, 2019, maintenance (troubleshooting) was performed on the Unit 1 train C essential chiller without written instructions or procedures. Specifically, an electrical supervisor was contacted by Unit 1 control room and asked to look at the chiller due to apparent drifting chiller output temperature discovered on an operator round. The electrical supervisor actually manipulated the operable and protected

safety-related essential chiller and left a temperature control switch in “off” position. Operations returned, with the electrical supervisor, a short time later to procedurally verify the temperature control loop operation and discovered the switch out of position. At that time the electrical supervisor voluntarily admitted to manipulating the component without permission or procedure.

Significance/Severity: Green. Using Inspection Manual Chapter 0609, Appendix A, “The Significance Determination Process For Findings At-Power,” dated December 13, 2019, the inspectors determined that the performance deficiency did not result in a loss of PRA function of a single train, or multiple trains of a technical specification piece of equipment for greater than 24 hours or allowed outage time and is therefore of very low safety significance.

Corrective Action References: Condition Report CR 2019-10223

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 walkdowns.

The inspectors noted and documented the following issues and trends:

- As documented in NRC Inspection Report IR 2019-004, there continues to be issues with station personnel consistently and reliably following station procedures. Recent examples are: 1) failure to follow the correct procedure step which resulted in making the Unit 1 train A ECW inoperable (CR 2020-6765), 2) an electrical supervisor failed to get permission or follow any applicable procedure to troubleshoot and manipulate the Unit 1 train C essential chiller temperature control module vein switch and resulted in making the train inoperable (CR 2019-10223), 3) during the Unit 1 train B emergency diesel generator 6-year maintenance electricians wired relays incorrectly, which led to an extra 2 days of unavailability and contributed to an unplanned entry into the Configuration Risk Management Program (CR 2020-1854), and 4) a plant equipment operator performing a restoration procedure on the wrong diesel generator resulted in making the Unit 1 train B emergency diesel generator inoperable (CR 2019-5842). While the licensee has taken action to lower the number of events, the inoperability of equipment with a failure to implement and follow procedures is an unacceptable trend.

- The resident inspectors as well as the licensee, both recognize a trend related to vendor performance due to a lack of adequate vendor oversight. Recent examples to support the trend are: 1) vendor involved in the loss of the 345kV south bus (CR 2020-3665), vendor at the main cooling reservoir river make up facility that leaked hydraulic fluid into the Colorado River which required three notifications to the state of Texas (CR 2020-1924, -3285, -5777), 3) main turbine vendor that inadvertently closed on instrument air valve (which was a near miss for a reactor trip) and issues with high pressure turbine replacement which resulted in an unnecessary heavy lift of plant equipment (CR 2020-5491, -2349), 4) vendor issues with reactor vessel head tensioning which extended the time with reactor coolant system level at head flange level (CR 2020-4352), 5) the vendor maintenance on check valve RH-32 that failed to resolve leak by and resulted in a significant challenge to Unit 1 operation and required a license amendment to temporarily resolve (CR 2020-4781), and

6) vendor failed to fabricate an adequate ECW travelling screen replacement (20-1490). The licensee initiated Condition Reports CR 2020-5829 and 2020-5911 to note the trend and the quality department elevating the trend for additional focus and resolution, respectively.

- The inspectors identified a trend in the number of persistent issues in the emergency diesel generator systems. Recent examples include: 1) multiple issues with emergency diesel generators failing to enter into their cooldown mode - after unloading the diesel and shutting it off, the diesel is, by design, run for 5-minutes before completely securing. This function is not safety-related and failure is indicative of a failed relay, but in order to prove operability the diesel must be fast started, which can impact service life due to unnecessary wear on the diesels, 2) repeated air leaks from the starting air system, 3) issues with remote monitoring of fuel oil tank levels from the control room, 4) maintenance rule unavailability for the Unit 1 train B diesel, which has been in 10 CFR 50.65(a)(1) status since June 2019 due to unavailability hours, but has continued to accumulate unavailability due to a combination of equipment issues, inadequate maintenance scheduling and human performance issues, and 5) a cracked exhaust manifold that has required a significant amount of engineering, maintenance, and operations resources to justify operability, as well as persistent NRC inspector challenges. The licensee failed to take advantage of opportunities to replace the exhaust manifold and have rescheduled the proper repair of the manifold several times and is now scheduled in November 2020 due to summer peak operations and COVID-19. If the schedule holds, the station will have been living with this issue, on a highly risk-significant plant component, for 15 months. The residents had discussions with engineering and maintenance on June 11, 2020, to express the concern of these numerous issues and the possibility that they could cloud and make future issues more difficult to diagnose. The licensee acknowledged the trend and initiated Condition Report CR 2020-7746 to further evaluate and resolve the trend.

Licensee-Identified Non-Cited Violation	71153

This violation of very low safety significance was identified by the licensee and has been entered into the licensee 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 3.6.1.1, “Primary Containment,” requires that primary containment integrity shall be maintained.

Contrary to the above, from September 3, 2019, until September 5, 2019, Unit 2 primary containment integrity was not maintained. Specifically, the Unit 2 inside containment hydrogen monitoring sample inlet test valve (2-CM-0005) was open at the same time as outside containment post-accident sampling system (PASS) test vent valve (2-AP-0004). The outside containment PASS air sample isolation valve (2-AP-2456) located between these two valves was being replaced due to leakage. This configuration provided a pathway through containment penetration M-82D which is comprised of one-inch diameter piping.

Significance/Severity: Green. Using Inspection Manual Chapter 0609, Appendix H, “Containment Integrity Significance Determination Process,” dated April 30, 2020, the inspectors determined that this performance deficiency did not appreciably increase the Large Early Release Frequency for Unit 2 due to the small size of the piping involved. For

this reason, the inspectors concluded that the finding is of very low safety significance (Green).

Corrective Action References: Condition Report CR 19-9764

This finding closes LER 05000499/2019001, "Equipment Clearance Order Error Leads to Loss of Primary Containment Integrity."

Inadequate Risk Assessment of Switchyard Activities Results in Loss of 345kV South Bus			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Initiating Events	Green NCV 05000498,05000499/2020002-03 Open/Closed	[H.1] - Resources	71153

The inspectors reviewed a self-revealing Green non-cited violation of 10 CFR 50.65(a)(4) for the failure to perform an adequate risk assessment to manage the increase in risk of performing activities in the switchyard. Specifically, on March 24, 2020, the licensee failed to implement risk mitigative actions during switchyard maintenance activities because of an inadequate risk assessment, which resulted in the loss of the 345kV south bus, which was a partial loss of offsite power to both Units 1 and 2.

Description: On March 24, 2020, Unit 1 was defueled during Refueling Outage 1RE22, while Unit 2 was in Mode 1 at full power. Unit 1 had train B emergency diesel generator (EDG) in operation carrying the 4160kV bus due to planned maintenance. Unit 2 had no Technical Specification components out of service. Transmission and distribution service provider (TDSP) personnel were performing transmission line relay testing on a 345kV line. At 10:46 a.m., TDSP personnel had a human performance error while performing relay testing caused by applying test equipment to the wrong relay which resulted in the south bus and standby transformer 2 lockouts. The effects on the units are as follows (All equipment responded and functioned as designed without issue.):

Unit 1

Unit 1 experienced an undervoltage condition on trains A and C engineered safety features (ESF) buses, both associated EDGs started and powered the ESF buses. The 1B spent fuel pool cooling pump lost power leaving only the 1A pump in service. The time-to-boil in spent fuel pool was 11 hours. Operators restored full spent fuel pool cooling at 10:56 a.m., 10 minutes following the loss of one train of cooling, with a non-detectable increase in spent fuel pool temperature. One fuel bundle was also in the process of being moved and was suspended due to the loss of power. On the turbine deck, a small load was suspended over the deck. Unit 1 had all three EDGs in operation carrying all ESF buses, and all outage activities were ceased.

Unit 2

Unit 2 experienced an undervoltage condition on the train B ESF bus and its associated EDG started and powered the ESF bus. The 2A spent fuel pool cooling pump was lost leaving only the 2B pump in service. The time-to-boil in the spent fuel pool was 45 hours. Full spent fuel pool cooling was restored at 12:31 p.m.

The three ESF buses (Unit 1 trains A and C, and Unit 2 train B) were re-aligned to the Unit 1

standby transformer 1, which is powered by the 345kV north bus, and EDGs were secured. TDSP replaced the damaged components and the 345 south bus was restored at 9:32 p.m. The Unit 2 train B ESF bus was then realigned to standby transformer 2 at 10:05 p.m. Both units were completely restored to normal configuration at this time.

The inspectors reviewed the licensee's root cause evaluation. The evaluation identified the direct root cause of the event to be a human performance error by TDSP employees in the switchyard. The TDSP employees energized and began testing the wrong relay which resulted in the lockout of the 345kV south bus and the standby transformer 2. Because the human performance error belonged to the TDSP employees and corrective action to prevent recurrence was determined to be unfeasible, corrective actions were focused on South Texas Project programs and processes to correct and prevent a similar issue from re-occurring.

The inspectors determined that the evaluation was thorough and reviewed the long-standing history of issues with switchyard work management going as far back as the early 1990's. There was a similar event in 2010, in which the 345kV north bus was lost due to a TDSP employee human performance issue. Corrective actions from that event appear to have been mildly effective and short lived. The procedure at the center of the event is 0PGP03-XS-0001, "Switchyard Management'" and its eight revisions since 2010. The procedure's purpose is to define and facilitate the process for scheduling and performing maintenance in the switchyard as well assessing the risk for any given work activity. Over the years, the licensee vaguely adhered to the switchyard management procedure and it is evident that South Texas Project management has not supported the procedure and program well enough to consistently maintain a well-qualified switchyard coordinator who can properly implement the program. The initial work that was scheduled during this most recent Unit 1 refueling outage (1RE22) was initially presented by a switchyard coordinator in April 2019. That switchyard coordinator retired and was replaced with a coordinator that was not fully qualified in August 2019. The switchyard work was reviewed again prior to the outage and the new coordinator determined that the maintenance work by TDSP would not be an "Impactive Activity" in accordance with the vague definition of an "Impactful Activity" in the switchboard management procedure. As a result, STP did not implement risk mitigative actions, such as conducting a pre-job brief with TDSP personnel providing direct oversight of the vendor, which failed to prevent the unexpected partial loss of offsite power.

Corrective Actions: Immediate actions were to stand down the TDSP work in the switchyard, to implement human performance error reduction tools to further possible errors in the switchyard, restore spent fuel pool cooling in both units, and to restore the 345kV south bus and normal ESF bus alignments. The corrective actions from the root cause evaluation involve strengthening the 0PGP03-XS-0001, "Switchyard Management" procedure, specifically focusing on the roles and responsibilities for the Switchyard Coordinator and reinvigorating the South Texas Project management participation in re-establishing a collaborative working relationship with the TDSP.

Corrective Action References: Condition Report CR 2020-3665

Performance Assessment:

Performance Deficiency: The failure to adequately assess maintenance risk for switchyard relay testing was a performance deficiency.

Screening: The inspectors determined that the performance deficiency was more than minor because it was associated with the protection against external factors attribute and adversely affected the Initiating Events Cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. Specifically, while TDSP workers were performing maintenance activities in the 345kV switchyard, a human performance error resulted in a loss of the 345kV south bus which was a partial loss of power for both units.

Significance: The inspectors assessed the significance of the finding using IMC 0609, Appendix K, "Maintenance Risk Assessment and Risk Management SDP." A note in the appendix given below:

> Note: This guidance does not apply to the following situations: (1) those licensees who only perform qualitative analyses of plant configuration risk due to maintenance activities, or (2) performance deficiencies related to maintenance activities affecting SSCs needed for fire or seismic mitigation. When performance deficiencies are identified with either 1 or 2 above, the significance of the deficiencies must be determined by an internal NRC management review using risk insights where possible in accordance with IMC 612, "Power Reactor Inspection Reports."

Because the licensee uses qualitative analyses for all switchyard work, Situation 1 above applies. Therefore, the significance of this performance deficiency must be determined by "internal NRC management review." It should be noted that the internal management review was an artifact of the early significance determination process that was superseded by Inspection Manual Chapter 0609, Appendix M, "Significance Determination Process Using Qualitative Criteria," issued in December of 2006 after the current revision of Appendix K. Therefore, the inspectors requested that the senior reactor analyst initiate a review in accordance with Appendix M.

Appendix M, step 4.1, "Initial Evaluation," directs the user to determine if there are any significance colors that can reasonably be excluded from further consideration using available quantitative and/or qualitative methods and best available information. The senior reactor analyst reviewed the licensee's risk evaluation of the event that occurred on March 24, 2020. While this evaluation was mostly qualitative, it specifically addressed the impact to core damage frequency from the event. The performance deficiency was the failure to perform a risk assessment prior to the work in the switchyard. The analyst noted that, while risk management actions are used to protect redundant equipment, wrong-component events are not explicitly modeled when performing a maintenance rule risk assessment. Therefore, the analyst determined that the licensee's assessment would bound the appropriate maintenance rule evaluation. Based on the licensee's assessment and other information available to the analyst, the analyst determined that the finding was of, at most, very low safety significance, Green.

Cross-Cutting Aspect: H.1 - Resources: Leaders ensure that personnel, equipment, procedures, and other resources are available and adequate to support nuclear safety. Specifically, South Texas Project site management failed to ensure they adequately

supported the switchyard management program, procedure and to provide an adequately trained switchyard coordinator without collateral responsibilities to ensure error free maintenance in the 345kV switchyard.

Enforcement:

Violation: 10 CFR 50.65 (a)(4) states, in part, before performing maintenance activities (including but not limited to surveillance, post-maintenance testing, and corrective and preventive maintenance), the licensee shall assess and manage the increase in risk that may result from the proposed maintenance activities. The licensee uses Procedure 0PGP03-XS-0001, "Switchyard Management," Revision 8, to assess and manage the risk from switchyard maintenance activities.

Contrary to the above, on March 24, 2020, licensee personnel failed to adequately assess and manage the risk from switchyard maintenance activities. Specifically, the failure to recognize the increased risk and take risk mitigative actions for maintenance activities in the 345kV switchyard, which resulted in a loss of the 345kV south bus, which represented a partial loss of offsite power to both units.

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

EXIT MEETINGS AND DEBRIEFS

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

- On April 3, 2020, the inspectors presented the Inservice inspection results to Mr. J. Connolly, Executive Vice President and Chief Nuclear Officer, and other members of the licensee staff.
- On May 15, 2020, the inspectors presented the Evaluations of Changes, Tests, and Experiments inspection results to Mr. J. Connolly, Executive Vice President and Chief Nuclear Officer, and other members of the licensee staff.
- On May 21, 2020, the inspectors presented revised results for the Evaluations of Changes, Tests, and Experiments to Mr. L. Sterling, Regulatory Affairs Manager, and other members of the licensee staff.
- On July 9, 2020, the inspectors presented the integrated inspection results to G. T. Powell, President and CEO, and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.04	Corrective Action Documents	CR-YYYY-NNNN	2020-5447	
71111.04	Procedures	0POP02-CC-0001	Component Cooling Water	52
71111.04	Procedures	0POP02-DG-0003	Emergency Diesel Generator 13(23)	71
71111.04	Procedures	0POP02-MS-0001	Main Steam System	64
71111.04	Procedures	0POP02-SI-0002	Safety Injection Initial Lineup	47
71111.05	Procedures	0EAB02-FP-0006	Fire Preplan Electrical Auxiliary Building, Electrical Penetration Area Train A	2
71111.05	Procedures	0EAB31-FP-0047	Fire Preplan Electrical Auxiliary Building Cable Spreading/Power Cabling Area, Train B	7
71111.05	Procedures	0MAB27-FP-0139	Fire Preplan Mechanical Auxiliary Building CCW Pump and Chiller, Train C	4
71111.05	Procedures	0MAB27-FP-0139	Fire Preplan Mechanical Auxiliary Building CCW Pump and Chiller, Train C	4
71111.05	Procedures	0MAB27-FP-0142	Fire Preplan Mechanical Auxiliary Building CCW Heat Exchangers	3
71111.05	Procedures	0MAB27-FP-0142	Fire Preplan Mechanical Auxiliary Building CCW Heat Exchangers	3
71111.05	Procedures	0PGP03-ZF-0018	Fire Protection System Functionality Requirements	21
71111.05	Procedures	0SBX99-FP-0750	Fire Preplan for the Standby Transformer	1
71111.05	Procedures	0SBX99-FP-0750	Fire Preplan for the Standby Transformer	1
71111.05	Procedures	2ECW57-FP-0604	Fire Preplan Essential Cooling Water Intake Structure Pump Room Train B	5
71111.05	Procedures	2ECW57-FP-0604	Fire Preplan Essential Cooling Water Intake Structure Pump Room Train B	5
71111.07A	Calculations	MC-6476		
71111.07A	Miscellaneous		ESF Diesel Generator 12 Lube Oil Cooler Tube Scale Inspections	02/2020
71111.07A	Miscellaneous		ESF Diesel Generator 12 Jacket Water Cooler Tube Scale Inspection	02/2020

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.08P	Calibration Records	ACTS TGX-001-020	0.560” Bobbin @ 80IPS	Revision 0
71111.08P	Calibration Records	ACTS TGX-002-020	0.560” Bobbin @ 40IPS	Revision 0
71111.08P	Calibration Records	ACTS TGX-003-020	0.540” Bobbin @ 30IPS	Revision 0
71111.08P	Calibration Records	ACTS TGX-004-020	3 Coil +PT	Revision 0
71111.08P	Calibration Records	ACTS TGX-006-020	Single Coil +PT – Non-Mag Biased	Revision 0
71111.08P	Calibration Records	ACTS TGX-007-020	Single Coil +PT - Mag Biased	Revision 0
71111.08P	Calibration Records	ANTS TGX-A-020	Bobbin Coil	Revision 0
71111.08P	Calibration Records	ANTS: TGX-B-020	3 coil +PT RPC	Revision 0
71111.08P	Calibration Records	ANTS: TGX-C-020	RPC – U-bend, midrange frequency +PT	Revision 0
71111.08P	Calibration Records	ANTS: TGX-E-020	Bobbin Coil and Rotating Coil	Revision 0
71111.08P	Calibration Records	UTCAL-2020-012	Ultrasonic Calibration - Examination Report UT-2020-015	03/19/2020
71111.08P	Calibration Records	UTCAL-2020-013	Ultrasonic Calibration - Examination Report UT-2020-015	03/19/2020
71111.08P	Calibration Records	UTCAL-2020-020	Ultrasonic Calibration - Examination Report UT-2020-021	03/24/2020
71111.08P	Calibration Records	UTCAL-2020-021	Ultrasonic Calibration - Examination Report UT-2020-021	03/24/2020
71111.08P	Calibration Records	UTCAL-2020-034	Ultrasonic Calibration - Examination Report UT-2020-028	03/27/2020
71111.08P	Calibration Records	UTCAL-2020-035	Ultrasonic Calibration - Examination Report UT-2020-028	03/27/2020
71111.08P	Calibration Records	UTCAL-2020-036	Ultrasonic Calibration - Examination Report UT-2020-028	03/27/2020

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71111.08P	Calibration Records	UTCAL-2020-037	Ultrasonic Calibration - Examination Report UT-2020-028	03/27/2020
71111.08P	Calibration Records	UTCAL-2020-038	Ultrasonic Calibration - Examination Report UT-2020-028	03/27/2020
71111.08P	Calibration Records	UTCAL-2020-041	Ultrasonic Calibration - Examination Report UT-2020-036	03/30/2020
71111.08P	Calibration Records	UTCAL-2020-042	Ultrasonic Calibration - Examination Report UT-2020-036	03/30/2020
71111.08P	Corrective Action Documents	CA 19-3869-3	Centrifugal Charging Pump 1B Outboard Seal is Leaking Greater than 5 dpm with the Pump Running (Tier 1 Evaluation)	5/2/2019
71111.08P	Corrective Action Documents	CA 20-62-2	Leakage from High Head Safety Injection Pump 1C Mechanical Seal Leakage has Accumulated on Pump Housing Base (Tier 1 Evaluation)	01/30/2020
71111.08P	Corrective Action Documents	CR 18-14004	Enhancements of the Contract Welding Requirements to STP	11/14/2018
71111.08P	Corrective Action Documents	CR 18-2694	Increased Trend of Failures with Controllers on the New Hydrazine Pumps	03/04/2018
71111.08P	Corrective Action Documents	CR 19-1891	Internal Erosion on the 6” Alum. Bronze Piping Tee and Flanges of EW-0189	02/17/2019
71111.08P	Corrective Action Documents	CR 19-1966	WE NSAL-05-2- Steam Generator Secondary Side 2.5 Inch or Less Diameter Un-Reinforced Penetration Cover Plate Stress Report Error	02/19/2019
71111.08P	Corrective Action Documents	CR 19-3645	Wet and Discolored Deposits at the Packing Gland of 1-RH-0067A Indicative of an Active Packing Leak	03/28/2019
71111.08P	Corrective Action Documents	CR 19-4031	DG-12 Crack on Exhaust Piping- Weld Repair Filler	04/05/2019
71111.08P	Corrective Action Documents	CR 19-5705	When Boric Acid Conditions are Screened, the 3Q CR Action Template is not Being Completed	05/21/2019
71111.08P	Corrective Action Documents	CR 19-7057	Dry and white deposits at the tubesheet to HX flange of RHR HX 1B	06/27/2019
71111.08P	Corrective Action Documents	CR 19-7066	Significant Dry and Discolored Deposits at the Packing Gland of 1-SI-FCV-0852	06/27/2019
71111.08P	Corrective Action	CR 19-9714	Evaluate Reclassifying Reactor Vessel flange Leak-off Lines	09/04/2019

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	Documents			
71111.08P	Corrective Action Documents Resulting from Inspection	CA 20-3934-1	Condition Report Engineering Evaluation 20-3934-1, IWA-2240 demonstration of PDI-UT-10	03/31/2020
71111.08P	Corrective Action Documents Resulting from Inspection	CR 20-3934	Document Usage and Demonstration of Generic Procedure PDI-UT-10 in a Condition Report Engineering Evaluation	03/28/2020
71111.08P	Drawings	404490	Construction Drawing Spray Line, STP Unit 1	Revision 2
71111.08P	Engineering Evaluations	CREE No. 10-21733-1	Replacement Reactor Vessel Head (RRVH) Internal Disconnect Device (IDD) Penetrations (weld build-up location), a Technical Position	Revision 0
71111.08P	Engineering Evaluations	CREE No. 17-16232-2	Code Case N-566-2 Engineering Evaluation- System Heat Exchanger (HX) 1B Flange	11/16/2017
71111.08P	Miscellaneous		South Texas Project 1 RE22 Outage Eddy Current Certification Review	03/24/2020
71111.08P	Miscellaneous		NDE–PQ-2015-002, Procedure Qualification (Procedure 0PEP10-ZA-0017)	10/26/2015
71111.08P	Miscellaneous		Certificate of Qualification- David R. Kleinjan	01/17/2020
71111.08P	Miscellaneous		Certificate of Qualification- James H. Hoover	01/16/2020
71111.08P	Miscellaneous		Certificate of Qualification - Mary Matteson	01/30/2020
71111.08P	Miscellaneous		Certificate of Qualification - Eduardo M. Barrera	01/16/2020
71111.08P	Miscellaneous		STP Nuclear Operating Company, Certification Record No. 298	06/27/17
71111.08P	Miscellaneous		STPEGS Units 1 and 2 In-service Inspection Program Plan	Revision 9
71111.08P	Miscellaneous	MRS-TRC-1790	Omni 200 to TC6700 Digital Tester Equivalency	12/18/2006
71111.08P	Miscellaneous	MRS-TRC-1850	Omni 200 Tester Basis for Equivalency, Appendix H Essential Variable Characterization and ASME Code Compliance	Revision 1
71111.08P	Miscellaneous	MRS-TRC-2371	Site Validation of Appendix H / I Inspection Techniques for South Texas Unit -1 (1RE22), Spring 2020	03/23/2020
71111.08P	Miscellaneous	PDQS 322	David R. Kleinjan	09/30/2013
71111.08P	Miscellaneous	PQR 254	Weld Procedure Qualification for WPS P45 (F43)-T-AG	06/14/2017

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71111.08P	Miscellaneous	SG-CDMP-19-21	South Texas 1RE22 Steam Generator Degradation Assessment	Revision 0
71111.08P	Miscellaneous	SG-SGMP-15-18	South Texas Project Unit 1 -Steam Generator Cycle 19 Condition Monitoring and Cycles 20, 21, and 22 Preliminary Operational Assessment	Revision 0
71111.08P	Miscellaneous	Welder No. C44	Certification Record	01/25/1996
71111.08P	Miscellaneous	Welder No. J76	Certification Record	07/06/2011
71111.08P	Miscellaneous	Welder No. L35	Certification Record	07/06/2011
71111.08P	Miscellaneous	Work Order No. 96009129	CMTR - ARCOS Industries - 3/32 X 36” Wire LotNo./ Heat No. CP0447-QU946	03/22/2017
71111.08P	Miscellaneous	Work Order No. 96009129	CMTR - Energy & Process Corporation - 4” Butt Welded Elbows	09-08-2017
71111.08P	Miscellaneous	Work Order No. 96009129	CMTR - Energy & Process Corporation – 4” Butt Welded Pipe	09-08-2017
71111.08P	Miscellaneous	Work Order No. 96009129	Butt Weld Inspection Checklist, Weld HFW1402	08/15/2018
71111.08P	Miscellaneous	Work Order No. 96009129	Butt Weld Inspection Checklist, Weld HFW1405	08/15/2018
71111.08P	Miscellaneous	Work Order No. 96009129	Butt Weld Inspection Checklist, Weld HFW1408	08/15/2018
71111.08P	NDE Reports	MT-2020-010	Main Steam Pipe Lugs 27PLl-27PL8/30-MS-1001-GA2	03/16/2020
71111.08P	NDE Reports	MT-2020-014	RPV Closure Stud 2A	03/24/2020
71111.08P	NDE Reports	PT-2018-029	Liquid Penetrant Examination - Weld EW-1130-HFW-1408	04/09/ 2018
71111.08P	NDE Reports	PT-2018-041	Liquid Penetrant Examination - Weld EW-1130-HFW-1402	04/09/ 2018
71111.08P	NDE Reports	PT-2018-043	Liquid Penetrant Examination - Weld EW-1130-HFW-1405	04/09/2018
71111.08P	NDE Reports	UT-2020-015	Branch Connection-to-Bent Pipe 2-RC-1220-BB1	03/21/2020
71111.08P	NDE Reports	UT-2020-020	Pressurizer Pipe to Safe-end Overlay 14-WOL-N2	03/24/2020
71111.08P	NDE Reports	UT-2020-021	Pressurizer Spray Nozzle to Safe End weld Overlay PRZ-1-N2-SE-WOL	03/24/2020
71111.08P	NDE Reports	UT-2020-023	Pipe-to-Branch Connection 4-RC-1126-BB1 Weld 6	03/27/2020
71111.08P	NDE Reports	UT-2020-032	CRD NO. 68 Housing Lower Weld/ RRVH-CRD-68L	03/27/2020
71111.08P	NDE Reports	UT-2020-036	Pipe-to-Branch Connection 4-RC-1323-BB1 Weld 4	03/30/2020
71111.08P	NDE Reports	VTI/3-2020-009	RPV Washers 1A through 36A	03/28/2020

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71111.08P	NDE Reports	WCD No. EW-96009129	ASME Section XI Repair/Replacement Activity Pressure Testing - ISLT Post-Maintenance Pressure Test Traveler-1EWSYSTEM	08/16/2018
71111.08P	Procedures		Steam Generator Eddy Current Testing Data Analysis Guidelines	03/09/2020
71111.08P	Procedures	0PEP10-ZA-0004	General Ultrasonic Examination	Revision 8
71111.08P	Procedures	0PEP10-ZA-0017	Magnetic Particle Examination (Dry Powder Yoke Method)	Revision 6
71111.08P	Procedures	0PEP10-ZA-0024	ASME XI Examination for VT-1 and VT-3	Revision 5
71111.08P	Procedures	0PGP03-ZE-0027	ASME Section XI Repair/Replacement Activities	Revision 31
71111.08P	Procedures	0PGP03-ZE-0033	RCS Pressure Boundary Inspection for Boric Acid Leaks	Revision 13
71111.08P	Procedures	0PGP03-ZE-0133	Boric Acid Corrosion Control Program	Revision 12
71111.08P	Procedures	0PGP04-ZE-0304	Inservice Inspection Program For Welds and Component Supports	Revision 14
71111.08P	Procedures	MRS 2.4.2 GEN-35	Eddy Current Inspection of Pre-service and In-service Heat Exchanger Tubing	Revision 19
71111.08P	Procedures	MRS-GEN-1127	Guideline for Steam Generator Eddy Current Data Quality Requirements	Revision 16
71111.08P	Procedures	MRS-GEN-1214	Steam Generator Channel Head Video Inspection	Revision 5
71111.08P	Procedures	MRS-GEN-1240	Position Verification Procedure	Revision 7
71111.08P	Procedures	MRS-SSP-1619-TGX/THX	Steam Generator Eddy Current Data Analysis Guidelines for Inservice Inspections at South Texas Units 1 and 2	Revision 7
71111.08P	Procedures	OPEPIO-ZA-0019	Wet Fluorescent Magnetic Particle Examination For ASME Section XI PSI/ISI	Revision 5
71111.08P	Procedures	PDI-UT-10	Generic Procedure for the Ultrasonic Examination of Dissimilar Metal Welds	Revision G
71111.08P	Procedures	PDI-UT-2	Generic Procedure for the Ultrasonic Examination of Austenitic Piping Welds	Revision H
71111.08P	Procedures	PDI-UT-8	Generic Procedure for the Ultrasonic Examination of Weld Overlaid Similar and Dissimilar Metal Welds	Revision I
71111.08P	Procedures	UTI-065	Ultrasonic Examination of Small-Diameter Piping Butt Welds and Components for Thermal Fatigue Damage	Revision 0
71111.08P	Procedures	WPS P45 (F43)-T-AG	Manual GTAW	06/14/17
71111.08P	Self-Assessments	CR 14-10410	Risk-Informed ISI Periodic Evaluation for South Texas	06/24/14

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			Project Electric Generating Station Units 1 & 2 in Conjunction with End of the Third Interval, First Period	
71111.13	Procedures	0PGP03-ZG-0091	Configuration Risk Management Program	14
71111.13	Procedures	0POP01-ZO-0011	Operability, Functionality, and Responsibility Guidance	11
71111.15	Corrective Action Documents	CR-YYYY-NNNN	2010-21759, 2017-17317, 2018-8223, 2018-12121, 2018-2084, 2019-7235, 2019-8208, 2019-14780, 2020-4561, 2020-5447, 2020-3414, 2020-4352	
71111.15	Miscellaneous		Unit 1 and 2 Pump and Valve Inservice Test Plan, Third Ten-Year Interval	71
71111.15	Procedures	0PMP04-RX-0018A	Non-Rapid Refueling Mechanical Support	20
71111.15	Procedures	0POP02-DG-0002	Emergency Diesel Generator 12(22)	79
71111.15	Procedures	0POP02-DG-0003	Emergency Diesel Generator 13(23)	17
71111.15	Work Orders	Work Authorization Numbers	574847, 601789, 601790	
71111.17T	Corrective Action Documents	CR-YYYY-NNNN	2012-31926, 2014-12285, 2015-14074, 2015-16599, 2015-20773, 2015-22176, 2015-110072, 2016-00128, 2016-02214, 2016-05792, 2017-00118, 2017-22335, 2017-20542, 2017-23295, 2018-02757, 2018-05242, 2018-11062, 2018-88275, 2019-00872, 2019-10118, 20-02312	
71111.17T	Corrective Action Documents Resulting from Inspection	CR-YYYY-NNNN	2020-5748, 2020-5794, 2020-5795, 2020-5796, 2020-5797, 2020-5798, 2020-5800, 2020-5801, 2020-5802	
71111.17T	Drawings	204298-0100005T3 34577698	Target Rock 810000	G
71111.17T	Drawings	5N129F05016	Piping and Instrumentation Diagram Safety Injection System	15
71111.17T	Drawings	79AB-003BB	1 Inch Modulating Valve Assembly And Controller	E
71111.17T	Drawings	79AB-003BB	Target Rock	F

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.17T	Drawings	VTD-T020-0052	Vendor Technical Document For Target Rock 810000-X Positioner Technical And Installation Manual TRP 9375 For South Texas Project Nuclear Operating Company	0
71111.17T	Engineering Changes	14-12-285	Modify use of WRB-2M DNB Correlation in UFSAR Accident Analyses	0
71111.17T	Engineering Changes	15-22176	Use of Speed Crete as welded joint sealant in prestressed concrete embedded cylinder pipe	0
71111.17T	Engineering Changes	16-128-325	Evaluation of Belleville Washer	01/29/2018
71111.17T	Engineering Changes	16-2214-10	Revise Environmental Qualification DBD to Address QDPS On-going Qualification in Mild Environment	07/25/2017
71111.17T	Engineering Changes	16-5792	Update UFSAR 15.1.5 to Incorporate Revised HZP MSLB Core Response Analysis Due to RCCA D-6 Removal	0
71111.17T	Engineering Changes	17-118-148	Engineering Evaluation of Parker Fitting 48F-5-2 for use in the Standby Emergency Diesel Generator Starting Air System Air Starting Valve	0
71111.17T	Engineering Changes	17-20542-7	Replace Emergency Transformer 138KV Circuit Switch Operator	05/09/2018
71111.17T	Engineering Changes	17-22335-2	Replace 27C Relay (ITE J13) Associated in Control Circuit for Containment Spray Pump 1B	10/19/2017
71111.17T	Engineering Changes	17-23295-3	Install Pipe Cap Downstream of Safety Injection Accumulator Nitrogen Supply Vent Valve, A1SIHCV0900	09/20/2018
71111.17T	Engineering Changes	18-11062-2	Update Vendor Drawing and Setpoint List for CCP 1B Lube Oil Pressure Switch	10/02/2018
71111.17T	Engineering Changes	18-5242-2	Replacement Valve for Application 2R172TCV0392	04/20/2018
71111.17T	Engineering Changes	18-88-275	Replacement Size 3 & 4 Magnetic Motor Starters for Class 1E Application	12/05/2019
71111.17T	Engineering Changes	19-10118-9	Replace Primary Fuses in Aux Relay Panel for Unit 1 Reactor Vessel Head Vent Valve HCV0601 & 602.	0
71111.17T	Engineering Changes	19-872-1	Extend the Quality Life (QL) of the Primary Sampling System’s Target Rock Solenoid Valves and Reed Switches	04/30/2019
71111.17T	Engineering Changes	20-2312-6	Installation Of Metal Oxide Varistors (MOV's) For Unit 1 Rx Vessel Head Vent Throttle Valves Positioners HY0601 and	03/19/20

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			HY0602	
71111.17T	Engineering Changes	20-2312-6	Installation of Metal Oxide Varistors (MOVs) for Unit 1 RX Vessel Head Vent Throttle Valves Positioners HY0601 and HY0602	0
71111.17T	Miscellaneous		10 CFR 50.59 Resource Manual	4
71111.17T	Miscellaneous	12-31926-43	Class 1E 4.16KV Circuit Breaker Replacements	11/27/2018
71111.17T	Miscellaneous	15-14074-4	Create Environment Data Table for Rosemount Transmitters in EQDB database	01/30/2019
71111.17T	Miscellaneous	15-20773-1	Validate and Update Loading for 125 Volt DC Distribution Panel PL039A	09/18/2018
71111.17T	Miscellaneous	15-20773-2	Validate and Update Loading for Remaining Circuits on Class 1E 125 Volt DC Distribution Panels PL039B, PL039C, PL040A, PL139A, PL139B and PL139C	12/17/2019
71111.17T	Miscellaneous	16-128-30	Rosemount Differential Pressure Transmitter 1151DP Replacement Part	07/09/2018
71111.17T	Miscellaneous	16-128-94	Alternate replacement Limitorque actuator for B320-10	10/08/2018
71111.17T	Miscellaneous	18-2757-11	Temporary Installation of a Portable Heater/Fan Unit in Doorway (Door 307) of Room 321 (E1C11 125 Volt QC Battery Rack Room) on the 60 foot Elevation of the Electrical Auxiliary Building (EAB)	05/22/2018
71111.17T	Miscellaneous	NSAL-14-5	Lower Than Expected Critical Heat Flux Results Obtained During Departure from Nucleate Boiling Testing	06/17/2014
71111.17T	Miscellaneous	QDPS Life 001	QDPS Ongoing 1E Qualification Beyond 5 Years	1
71111.17T	Miscellaneous	Report No.: 9375	810000-x Positioner Technical And Installation Manual	A
71111.17T	Miscellaneous	TB-17-3	7300 NAL Board Influenced by Voltage Transients Caused by Unsuppressed Solid State Protection System Input Relay Coil	10/23/2017
71111.17T	Miscellaneous	TRP No.: 9918	Design Report For Target Rock Modulating Solenoid Operated Valve Model 79AB-003BB	A
71111.17T	Procedures	0PAP01-ZA-0103	License Compliance Review	15
71111.17T	Procedures	0PGP03-ZA-0109	Configuration Management Program	19
71111.17T	Procedures	0PGP03-ZO-0003	Temporary Modifications	34
71111.17T	Procedures	0PGP04-ZE-0309	Design Change Package	38
71111.17T	Procedures	0PGP04-ZE-0318	Non-Design Configuration Change	3

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71111.17T	Procedures	0PGP05-ZA-0002	10CFR50.59 Evaluations	18
71111.17T	Procedures	0PLP01-ZA-0004	Control of the 10 CFR 50.59 Resource Manual	1
71111.17T	Procedures	0POP02-SI-0001	Safety Injection Accumulators	41
71111.17T	Procedures	0POP02-SI-0002	Safety Injection System Initial Lineup	47
71111.17T	Procedures	0POP02AE0005	138 KV Circuit Switcher Operation	6
71111.17T	Procedures	0POP02AF0001	Auxiliary Feedwater	53
71111.17T	Procedures	0POP02EE0001	ESF (Class 1E) DC Distribution System	37
71111.17T	Procedures	0POP02FW0001	Main Feedwater	106
71111.17T	Procedures	0POP02SP0001	Solid State Protection System	21
71111.17T	Procedures	0POP07-SI-0002	Safety Injection System Accumulator Valves Functional Test	0
71111.17T	Procedures	0POP11DJ0001	Class 1E 125V DC Battery Feeder Breaker Replacement	10
71111.17T	Procedures	0POP11DJ0002	Online Class 1E 125V DC Battery and Inverter Removal from Service and Restoration	15
71111.17T	Work Orders	96011079	Safety Injection Accumulator Nitrogen Supply Vent Valve	06/05/18
71111.19	Corrective Action Documents	CR-YYYY-NNNN	2020-1334, 2020-1460, 2020-4229, 2020-3700, 2020-5599, 2018-13641, 2014-10004	
71111.19	Miscellaneous	VTD-T905-0006	Operating and Maintenance Instructions for Containment Auxiliary Airlock	2
71111.19	Procedures	0PMP07-ZJ-1013	ASCO Solenoid Valve EQ Replacement	12
71111.19	Procedures	0PSP03-CC-0009	Component Cooling Water System Train 1C(2C) Valve Operability Test	21
71111.19	Work Orders	Work Authorization Number	627539, 592943, 631598, 557157, 519513, 488580, 451089, 560852, 554901, 605180, 633202, 546428, 503628	
71111.22	Corrective Action Documents	CR-YYYY-NNNN	2020-2774, 2020-2889, 2020-5401, 96-14089, 2020-6175, 2018-3366	
71111.22	Procedures	0PGP03-DJ-0001	1E Battery Monitoring and Maintenance Program	2
71111.22	Procedures	0PSP03-DG-0003	Standby Diesel 13(23) Operability Test	64
		0PSP03-DG-0022	Standby Diesel Interdependence Verification	16
71111.22	Procedures	0PSP03-RH-0002	Residual Heat Removal Pump 1B(2B) Inservice Test	19
71111.22	Procedures	0PSP03-SP-0006S	Train S Reactor Trip Breaker TADOT	39
71111.22	Procedures	0PSP05-RC-0420	Delta T and T Average Loop 2 Set 2 Calibration (T-0420)	59

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71111.22	Procedures	0PSP05-RC-0440	Delta T and T Average Loop 4 Set 4 Calibration (T-0440)	55
71111.22	Procedures	0PSP06-DJ-0001	125 Volt Class 1E Battery Monthly Surveillance Test	37
71111.22	Procedures	0PSP06-DJ-0003	125 Volt Class 1E Battery Intercell Connection Resistance Surveillance Test	21
71111.22	Procedures	1TEP04-HP-0001	Load Swing Test	1
71111.22	Work Orders	Work Authorization Number	591405	