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

October 30, 2019

Mr. G. T. Powell
President and Chief Executive Officer
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 05000498/2019003 AND 05000499/2019003

Dear Mr. Powell:

On September 30, 2019, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at South Texas Project Electric Generating Station, Units 1 and 2. On October 10, 2019, the NRC inspectors discussed the results of this inspection with Mr. A. Capristo, Executive Vice President and Chief Administrative Officer, and other members of your staff. The results of this inspection are documented in the enclosed report.

Two findings of very low safety significance (Green) are documented in this report. One of these findings involved a violation of NRC requirements. We are treating this violation as a non-cited violation (NCV) consistent with Section 2.3.2 of the Enforcement Policy.

If you contest the violation or significance or severity of the violation 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.

If you disagree with a cross-cutting aspect assignment or a finding not associated with a regulatory requirement 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.

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

Sincerely,

/RA/

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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SUBJECT: SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION, UNITS 1 AND 2 – INTEGRATED INSPECTION REPORT 05000498/2019003 AND 05000499/2019003 – October 30, 2019

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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:	05000498/2019003 and 05000499/2019003
Enterprise Identifier:	I-2019-003-0004
Licensee:	STP Nuclear Operating Company
Facility:	South Texas Project Electric Generating Station
Location:	Wadsworth, TX 77483
Inspection Dates:	July 1, 2019 to September 30, 2019
Inspectors:	J. Choate, Resident Inspector S. Hedger, Emergency Preparedness Inspector 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 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 Establish Maintenance Rule (a)(1) Goals for Safety-Related Chillers			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000499,05000498/2019003-01 Open/Closed	[P.2] - Evaluation	71111.12
The inspectors identified a Green, non-cited violation (NCV) of 10 CFR 50.65(a)(1) for the licensee's failure to establish goals commensurate with safety for equipment subject to the Maintenance Rule. Specifically, once the essential chilled water system was placed into Maintenance Rule (a)(1) for a repeat functional failure of the auxiliary oil pump seal, the licensee did not establish performance goals that were different than the existing performance criteria.			

Failure to Follow Procedure Results in Load Rejection			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Initiating Events	Green FIN 05000498,05000499/2019003-02 Open/Closed	[H.4] - Teamwork	71152
The inspectors reviewed a Green, self-revealed finding for the licensee's failure to implement procedures for a surveillance resulting in a change in reactivity. Specifically, a licensed operator failed to adjust limits on the main steam governor valves during performance of a station test procedure, resulting in an unplanned load rejection of 3.8 percent thermal reactor power.			

Additional Tracking Items

None

PLANT STATUS

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

Unit 2 began the inspection period at rated thermal power. On September 29, 2019, Unit 2 began coast down operation. Unit 2 ended the inspection period at 98 percent rated thermal power.

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

Impending Severe Weather Sample (IP Section 03.03) (1 Sample)

(1) The inspectors evaluated readiness for impending adverse weather conditions for Tropical Storm Imelda on September 17, 2019.

71111.04Q - Equipment Alignment

Partial Walkdown Sample (IP Section 03.01) (4 Samples)

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

(1) Unit 2, train B emergency core cooling system during train C emergency core cooling system welding activities on July 9, 2019
(2) Unit 2, train B component cooling water system during train A component cooling water maintenance on July 22, 2019
(3) Unit 1, positive displacement charging pump during train A centrifugal charging pump maintenance on July 29, 2019
(4) Unit 2, turbine-driven auxiliary feedwater pump during train C emergency diesel generator maintenance on August 5, 2019

71111.05A - Fire Protection (Annual)

Annual Inspection (IP Section 03.02) (1 Sample)

The inspectors evaluated fire brigade performance for the following three fire drills to complete one sample of the annual inspection:

(1)
- An unannounced simulated fire in the make-up demineralizer building on February 22, 2019;
- An unannounced simulated fire in the load center 12G building on August 6, 2019;
- An announced simulated fire in the integrated computer system in the Unit 1 auxiliary shutdown panel area on August 20, 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, train A and B centrifugal charging pump rooms, Fire Areas 25 and 26 on July 2, 2019
(2) Unit 2, train C safety-related switchgear room, battery and inverter rooms, and motor generator room, Fire Areas 52 through 54 on July 19, 2019
(3) Unit 2, turbine generator building 55 foot elevation, Fire Area 90 on August 2, 2019
(4) Unit 1, train A and B centrifugal charging pump rooms, Fire Areas 25 and 26 on September 1, 2019
(5) Unit 1, component cooling water common header room, Fire Area 20 on September 26, 2019

71111.06 - Flood Protection Measures

Inspection Activities - Underground Cables (IP Section 02.02c.) (1 Sample)

The inspectors evaluated cable submergence protection in the following locations to complete one sample of the annual inspection:

(1) Unit 1, train B manhole BOXYAEKEM50
Unit 1, train C manhole COXYABKEM53
Unit 1, train C manhole COXYABKEM58
Unit 1, train A manhole AOXYABKEM51
Unit 1, train A manhole AOXYABKEM50

71111.11Q - Licensed Operator Requalification Program and Licensed Operator Performance

Licensed Operator Performance in the Actual Plant/Main Control Room (IP Section 03.01) (2 Samples)

(1) The inspectors observed a Unit 1 operating crew respond to a degraded condition of the main feedwater booster pump 12 and the preparation to swap feedwater pumps on August 19, 2019.
(2) The inspectors observed and evaluated licensed operator performance in the control room during a Unit 1 infrequently performed evolution that involved restoration of normal charging and letdown following isolation due to high differential pressure across both reactor coolant system filters on September 16, 2019.

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

(1) The inspectors observed and evaluated a Unit 2 operating crew simulator training that involved a nuclear instrumentation failure, moisture separator level control valve failure, large break loss of coolant accident, reactor coolant system cold leg recirculation, and reactor coolant system leakage outside of containment, which resulted in Alert, Site Area Emergency, and General Emergency declarations on August 20, 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, chemical and volume control system on July 10, 2019
(2) Units 1 and 2, emergency diesel generator systems on September 5, 2019
(3) Units 1 and 2, essential chilled water systems on September 30, 2019

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Risk Assessment and Management Sample (IP Section 03.01) (6 Samples)

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

(1) Unit 1 elevated risk due to train A work week in which the safety injection system work required 16 hours more than planned and transitioned risk from white to yellow the week of July 15, 2019
(2) Unit 2 planned risk due to train A component cooling water and emergency diesel generator maintenance the week of July 23, 2019
(3) Unit 2 planned risk due to train C auxiliary feedwater pump, steam generator power operated relief valve, and emergency diesel generator maintenance the week of August 6, 2019

(4) Unit 1 planned risk due to train B work week due to extended unavailability of the essential chilled water and auxiliary feedwater maintenance activities the week of August 19, 2019
(5) Unit 2 planned risk due to train B emergency diesel generator, essential cooling water, essential chilled water, and emergency core cooling system maintenance the week of August 26, 2019
(6) Unit 1 planned risk due to train A essential cooling water, steam generator power operated relief valve, and emergency diesel generator maintenance the week of September 9, 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 pump speed lowering during inservice testing on July 16, 2019
(2) Unit 1, environmental qualification of safety-significant transmitters in the turbine generator building on July 17, 2019
(3) Unit 1, train B 125 VDC batteries electrolyte leakage and degrading flame arrestor gasket on July 31, 2019
(4) Unit 1, cracks identified in the train B emergency diesel generator exhaust bellows on August 23, 2019
(5) Unit 1, exposed wires in the train C quality display processing system cabinet on August 28, 2019
(6) Unit 1, grounding of alarm circuitry for train B emergency diesel generator standby jacket water and lube oil pumps on September 12, 2019

71111.19 - Post-Maintenance Testing

Post Maintenance Test Sample (IP Section 03.01) (9 Samples)

The inspectors evaluated the following post maintenance tests:

(1) Unit 1, train B emergency safeguards features sequencer following key switch module replacement on July 24, 2019
(2) Unit 2, train B quality display processing system circuit board replacement on July 25, 2019
(3) Unit 1, train A centrifugal charging pump following flow element maintenance on July 29, 2019
(4) Units 1 and 2, diesel-driven fire pump No.1 following pump and diesel governor replacement on August 1, 2019
(5) Unit 1, train B reactor vessel head vent throttle valve following troubleshooting and replacement of a blown fuse on August 1, 2019
(6) Unit 2, train C emergency diesel generator following welding and sealing activities on the knockout panel on August 7, 2019
(7) Unit 1, reactor vessel head vent solenoid valve HCV-601 following fuse replacement on August 15, 2019

(8) Unit 1, train B emergency diesel generator following weld repair of the exhaust manifold on August 24, 2019
(9) Unit 1, train A emergency diesel generator following repair of two grounds on September 13, 2019

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

Surveillance Tests (other) (IP Section 03.01) (2 Samples)

(1) Unit 2, chemical and volume control system letdown isolation valve temperature switch calibration on July 15, 2019
(2) Unit 2, train A containment spray surveillance on July 24, 2019

71114.02 - Alert and Notification System Testing

Inspection Review (IP Section 02.01-02.04) (1 Sample)

(1) The inspectors evaluated the maintenance and testing of the alert and notification system between May 1, 2017, and July 5, 2019.

71114.03 - Emergency Response Organization Staffing and Augmentation System

Inspection Review (IP Section 02.01-02.02) (1 Sample)

(1) The inspectors evaluated the readiness of the Emergency Response Organization between May 1, 2017, and July 5, 2019. Inspectors also evaluated the licensee's ability to staff their emergency response facilities in accordance with emergency plan commitments.

71114.04 - Emergency Action Level and Emergency Plan Changes

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

(1) The inspectors evaluated the 10 CFR 50.54(q) emergency plan change process and practices between May 1, 2017, and July 5, 2019. The evaluation reviewed screenings and evaluations documenting the implementation of this process. The reviews of the change process documentation do not constitute NRC approval.

71114.05 - Maintenance of Emergency Preparedness

Inspection Review (IP Section 02.01 - 02.11) (1 Sample)

(1) The inspectors evaluated the maintenance of the emergency preparedness program between May 1, 2017, and July 5, 2019. The evaluation reviewed activations of the emergency plan, the conduct of drills and exercises, licensee audits and assessments, and the maintenance of equipment important to emergency preparedness.

71114.06 - Drill Evaluation

Drill/Training Evolution Observation (IP Section 03.02) (1 Sample)

The inspectors evaluated:

(1) The licensee's enhanced emergency plan drill that involved a large break loss of coolant accident (Alert), a reactor coolant system leak outside of containment (Site Area Emergency), and a partial loss of offsite power (General Emergency) on August 27, 2019

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

EP01: Drill/Exercise Performance (IP Section 02.12) (1 Sample)

(1) April 1, 2018, through June 30, 2019

EP02: ERO Drill Participation (IP Section 02.13) (1 Sample)

(1) April 1, 2018, through June 30, 2019

EP03: Alert & Notification System Reliability (IP Section 02.14) (1 Sample)

(1) April 1, 2018, through June 30, 2019

MS06: Emergency AC Power Systems (IP Section 02.05) (2 Samples)

(1) Unit 1, July 1, 2018, through June 30, 2019
(2) Unit 2, July 1, 2018, through June 30, 2019

MS07: High Pressure Injection Systems (IP Section 02.06) (2 Samples)

(1) Unit 1, July 1, 2018, through June 30, 2019
(2) Unit 2, July 1, 2018, through June 30, 2019

MS08: Heat Removal Systems (IP Section 02.07) (2 Samples)

(1) Unit 1, July 1, 2018, through June 30, 2019
(2) Unit 2, July 1, 2018, through June 30, 2019

71152 - Problem Identification and Resolution

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) Unit 1, reactor operator error during main steam governor valve testing that resulted in a load rejection and 3.8 percent decrease in reactor thermal power. The inspectors reviewed the prompt investigation, interviewed operations personnel, and evaluated the corrective actions

INSPECTION RESULTS

Failure to Establish Maintenance Rule (a)(1) Goals for Safety-Related Chillers			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000499,05000498/2019003-01 Open/Closed	[P.2] - Evaluation	71111.12

The inspectors identified a Green, non-cited violation (NCV) of 10 CFR 50.65(a)(1) for the licensee's failure to establish goals commensurate with safety for equipment subject to the Maintenance Rule. Specifically, once the essential chilled water system was placed into Maintenance Rule (a)(1) for a repeat functional failure of the auxiliary oil pump seal, the licensee did not establish performance goals that were different than the existing performance criteria.

Description:

Each unit at South Texas Project has three trains of essential chilled water, each equipped with a chiller which requires an auxiliary oil pump for lubrication of the bearings, shaft, and gears of the chiller compressor. On April 18, 2019, Unit 2 was in steady state full power operation when the control room received an alarm for a train B essential chiller trip due to low oil pressure. A plant operator was dispatched to the chiller and observed an external loss of oil from the train B essential chiller auxiliary oil pump seal. At the same time the train C essential chiller was also inoperable due to planned maintenance, causing Unit 2 to enter Technical Specification 3.7.14 action B, which required within 1 hour to restore at least one essential chiller to operable or apply the Configuration Risk Management Program (CRMP), or be in at least hot standby within the next 6 hours. Operators satisfied the technical specification by applying the CRMP with an expiration time of 72 hours. Maintenance later found that the oil came from a failed mechanical seal assembly for the auxiliary oil pump. On April 19, 2019, the mechanical seal for train B essential chilled water auxiliary oil pump was replaced, operators declared the train operable following a post-maintenance test, and the unit exited the conditions of the CRMP.

The inspectors evaluated the seal failure and found this to be the third such failure for the essential chiller auxiliary oil pump seals since October 2017. The licensee considered the second failure in May 2018 to be a repeat functional failure per their Maintenance Rule program and moved the essential chilled water system from Maintenance Rule (a)(2) to (a)(1) status at that time, establishing the (a)(1) status goal to be "no more repetitive [maintenance rule functional failures] due to seal failures in the oil pumps." The inspectors determined that

this (a)(1) goal failed to meet the requirements of 10 CFR 50.65(a)(1) in that the goal must be commensurate with safety. Specifically, this goal was a restatement of the performance criteria not met that resulted in the essential chilled water system being moved from (a)(2) to (a)(1) status.

The inspectors provided their concerns to the licensee in June 2019, and in July 2019 the Maintenance Rule Expert Panel voted to change the goal for the essential chilled water system to "replace the unreliable oil pump shaft mechanical seal assemblies with a more reliable design in order to ensure no additional functional failures of the chillers due to oil leaks." The inspectors assessed the new goal to be justifiable, defensible, and commensurate with safety such that it satisfies the requirements of the Maintenance Rule.

Corrective Actions: In addition to the corrective actions stated above, the licensee established a longer-term corrective action to replace the existing mechanical seals for the essential chilled water auxiliary oil pumps with an improved design by July 2020.

Corrective Action References: Condition Report 2019-4472

Performance Assessment:

Performance Deficiency: The failure to establish goals commensurate with safety for equipment subject to the requirements of the Maintenance Rule was a performance deficiency. Specifically, the goal established for the essential chilled water system was a restatement of the performance criteria not met that resulted in the system transitioning from (a)(2) to (a)(1) status.

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 establish goals commensurate with safety for the essential chilled water system allowed issues with the auxiliary oil pump seals to go unresolved. As a result, the licensee failed to bring about necessary improvements in essential chilled water system performance and on April 18, 2019, the Unit 2 train B essential chiller auxiliary oil pump seal failed resulting in the unit entering into an unplanned 1-hour technical specification shutdown action statement.

Significance: The inspectors assessed the significance of the finding using Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." The finding was determined to be of very low safety significance, Green. Specifically, while the system did not maintain its operability, the finding did not represent a loss of system, did not represent an actual loss of function for greater than its technical specification allowed outage time, and did not represent an actual loss of function for greater than 24 hours. The essential chilled water system remained capable of performing its safety function with train A essential chilled water operable and in service.

Cross-Cutting Aspect: P.2 - Evaluation: The organization thoroughly evaluates issues to ensure that resolutions address causes and extent of conditions commensurate with their safety significance. Specifically, engineering personnel failed to thoroughly evaluate the Maintenance Rule (a)(1) goal established for the essential chilled water system issues to ensure that resolutions addressed causes.

Enforcement:

Violation: Title 10 CFR Part 50.65(a)(1), requires, in part, that each holder of an operating license under this part shall monitor the performance or condition of structures, systems, or components, against licensee-established goals and that these goals shall be established commensurate with safety. Contrary to the above, from May 2018 until July 2019, for components associated with the essential chilled water system, the licensee failed to establish goals commensurate with safety. Specifically, the established goal was a restatement of the failed performance criteria that resulted in the system transitioning from (a)(2) to (a)(1) status. As a result, the licensee failed to bring about necessary improvements in essential chilled water system performance and on April 18, 2019, the Unit 2 train B essential chiller auxiliary oil pump seal failed, resulting in the unit entering into an unplanned 1-hour technical specification 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.

Failure to Follow Procedure Results in Load Rejection			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Initiating Events	Green FIN 05000498,05000499/2019003-02 Open/Closed	[H.4] - Teamwork	71152

The inspectors reviewed a Green, self-revealed finding for the licensee's failure to implement procedures for a surveillance resulting in a change in reactivity. Specifically, a licensed operator failed to adjust limits on the main steam governor valves during performance of a station test procedure, resulting in an unplanned load rejection of 3.8 percent thermal reactor power.

Description: Unit 1 at South Texas Project is equipped with four main steam governor valves designed to automatically open and close to control main turbine load. Each governor valve has an adjustable limit to prevent the valve from opening beyond a desired value. On March 2, 2019, Unit 1 was performing surveillance test Procedure 0POP07-MS-0003, "Main Turbine Steam Inlet Valve Test," Revision 28, to test the ability of governor valve 1 to fully close, and then fully open, with the unit operating at 90 percent for the test. Step 5.3.3.3 of the procedure states, in part, to set governor control valve limit to greater than 100 percent. This allows the remaining governor valves 2, 3, and 4 to open as necessary to maintain main turbine load while governor valve 1 is cycled. However, the reactor operator incorrectly marked Step 5.3.3.3 as "not applicable." As a result, when governor valve 1 was manually taken to the full closed position, the valve limit for governor valve 4 prevented the valve from opening enough to maintain main turbine load, causing a 3.8 percent decrease in reactor thermal power and a 3.1 °F increase in reactor coolant system temperature.

Operators in the control room monitored plant conditions and allowed the plant to stabilize. The shift manager then held a crew brief to discuss the transient before exiting the test and restoring reactor power to 100 percent. On April 17, 2019, the licensee completed a performance analysis and determined that the operator performing the step failed to read and evaluate the step prior to marking it "not applicable," the operator providing the peer check

failed to ensure the correct action was performed at the correct time, and the unit supervisor failed to ensure the procedure was peer reviewed prior to implementation.

Corrective Actions: In addition to the immediate corrective actions taken as noted above, the licensee revised Procedure 0POP07-MS-0003 to address the human factoring of the procedure steps that contributed to the operator error. Operations management has also coached all operating crews and provided a Lessons Learned in training on the importance of procedural adherence, communication, and peer checking.

Corrective Action References: Condition Report 2019-2526

Performance Assessment:

Performance Deficiency: The failure to implement procedures that could affect reactivity was a performance deficiency. Specifically, a licensed operator failed to adjust limits on the main steam governor valves during execution of Procedure 0POP07-MS-0003, "Main Turbine Steam Inlet Valve Test," Revision 28. As a result, governor valve 4 failed to open fully when governor valve 1 was taken to full close, causing a load rejection of 3.8 percent thermal reactor power.

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 licensed operator performing the test failed to read and evaluate a step prior to marking it "not applicable," preventing governor valve 4 from opening fully during the test. The unit supervisor and the operator providing the peer check in the control room also failed to ensure the procedure was correctly marked before and during implementation. This resulted in an unplanned load rejection of 3.8 percent thermal power.

Significance: The inspectors assessed the significance of the finding using Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." The finding was determined to be of very low safety significance, Green. Specifically, the finding did not cause a reactor trip and did not cause a loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition.

Cross-Cutting Aspect: H.4 - Teamwork: Individuals and work groups communicate and coordinate their activities within and across organizational boundaries to ensure nuclear safety is maintained. The inspectors determined that the finding had a cross-cutting aspect in the area of human performance associated with teamwork. Specifically, the unit supervisor and operator providing the peer check in the control room failed to communicate and coordinate activities with the operator performing the valve test procedure. Licensed operators in the control room failed to work as a team to provide peer checks.

Enforcement: Inspectors did not identify a violation of regulatory requirements associated with this finding.

EXIT MEETINGS AND DEBRIEFS

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

- On October 10, 2019, the inspectors presented the integrated inspection results to Mr. A. Capristo, Executive Vice President and Chief Administrative Officer, and other members of the licensee staff.

- On July 11, 2019, the inspectors presented the emergency preparedness program inspection technical debrief inspection results to Mr. J. Enoch, Manager, Emergency Preparedness, and other members of the licensee staff.

- On July 30, 2019, the inspectors presented the emergency preparedness program inspection telephonic exit meeting inspection results to Mr. G. T. Powell, President and Chief Executive Officer, and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.04Q	Corrective Action Documents	CR-YYYY-NNNN	2009-5671	
71111.04Q	Corrective Action Documents	Work Authorization Number	583566	
71111.04Q	Drawings	5N129F05014#2	Piping and Instrumentation Diagram Safety Injection System	20
71111.04Q	Drawings	5R179F05007#1	Piping and Instrumentation Diagram Chemical and Volume Control System	52
71111.04Q	Drawings	5R209F05018#2	Piping and Instrumentation Diagram Component Cooling Water System	19
71111.04Q	Drawings	5R209F05020#2	Piping and Instrumentation Diagram Component Cooling Water System	17
71111.04Q	Drawings	5S141F00024	Piping & Instrumentation Diagram Auxiliary Feedwater	5
71111.04Q	Drawings	5S142F00024	Piping & Instrumentation Diagram Auxiliary Feedwater	13
71111.05A	Corrective Action Documents	CR-YYYY-NNNN	2019-8536	
71111.05A	Miscellaneous	Fire Drill Package	19-03-02	
71111.05A	Procedures	0LCB99-FP-0901	Fire Preplan for Load Center Building 12G, 12J, 12K, and 12M	1
71111.05A	Procedures	0PGP03-ZF-0011	STPEGS Fire Brigade	18
71111.05Q	Procedures	0EAB-FP-0052	Fire Preplan Electrical Auxiliary Building ESF Switchgear Room Train C	4
71111.05Q	Procedures	0EAB-FP-0053	Fire Preplan Electrical Auxiliary Building, Channel IV Battery and Distribution Room	3
71111.05Q	Procedures	0EAB-FP-0054	Fire Preplan Electrical Auxiliary Building, Motor Generator Room	3
71111.05Q	Procedures	0MAB25-FP-0124	Fire Preplan Mechanical Auxiliary Building CVCS Centrifugal Charging Pump 1B and Valve Room	3
71111.05Q	Procedures	0MAB26-FP-0123	Fire Preplan Mechanical Auxiliary Building CVCS Centrifugal Charging Pump 1A and Valve Room	3
71111.05Q	Procedures	0MAMB20-FP-0129	Fire Preplan Mechanical Auxiliary Building Non-Radioactive Pipe Chase	3

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71111.05Q	Procedures	0TGB90-FP-0711	Turbine Generator Building Northwest 55' Elevation	3
71111.05Q	Procedures	0TGB90-FP-0712	Fire Preplan Turbine Generator Building Northeast 55' Elevation	4
71111.05Q	Procedures	0TGB90-FP-0713	Fire Preplan Turbine Generator Building South 55' Elevation	5
71111.11Q	Corrective Action Documents	CR-YYYY-NNNN	2017-23860, 2019-9012	
71111.11Q	Miscellaneous	Simulator Lesson Plans	LOR 194, RST 219.11, Enhanced E-Plan	
71111.11Q	Procedures	0POP02-FW-0001	Main Feedwater	105
71111.11Q	Procedures	CROE 10-10133-1	Restoring Normal Letdown with Both RC Filters Removed from Service due to Clogging	0
71111.12	Corrective Action Documents	CR-YYYY-NNNN	2012-27630, 2017-22981, 2018-3453, 2018-11724, 2019-3695, 2018-10958, 2019-3869, 2018-20976, 2018-2458	
71111.12	Corrective Action Documents	Work Authorization Numbers	612770, 601369	
71111.12	Miscellaneous	VTD-P025-0002	Centrifugal Charging Pump (CCP) Operation and Maintenance Manual	9
71111.12	Miscellaneous	VTD-U055-0001	Instruction Manual for the Positive Displacement Charging Pumps	3
71111.12	Procedures	0PMP04-CV-0003	Centrifugal Charging Pump Maintenance	30
71111.12	Procedures	0PMP04-CV-0004	Positive Displacement Charging Pump Maintenance	10
71111.13	Corrective Action Documents	CR-YYYY-NNNN	2019-7916, 2019-7918, 2019-7919	
71111.13	Miscellaneous	RasCal Sequences	3396, 3430, 3453	
71111.13	Procedures	0PGP03-ZO-0055	Protected Components	13
71111.13	Procedures	0POP01-ZO-0006	Risk Management Actions (RMAs)	27
71111.15	Corrective Action Documents	CR-YYYY-NNNN	2019-7235, 2009-1185, 2019-7521, 2019-7488, 2015-17339, 2019-8167, 2019-8089, 2019-9904	
71111.15	Miscellaneous	Calculation	Qualified Life of Selected Rosemount Transmitters	9

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		E43321		
71111.15	Miscellaneous	Calculation EC-5008	Class 1E DC System Scenario, Battery/Charger/Inverter Sizing & System Voltage Calculation	15
71111.15	Miscellaneous	VTD-W290-0001	PGA Governor	12/01/1994
71111.15	Procedures	0PSP03-AF-0007	Auxiliary Feedwater Pump 14(24) Inservice Test	52
71111.19	Corrective Action Documents	CR-YYYY-NNNN	2019-7815, 2019-4588, 2019-8213, 2017-614, 2019-7971, 2019-8052, 2019-8062, 2018-15297, 2019-10118, 2019-9904	
71111.19	Corrective Action Documents	Work Authorization Numbers	616272, 610661, 616722, 555888, 603897, 618941, 573946, 573947	
71111.19	Procedures	0PMP07-AM-0021	QDPS APC-B1 Removal From Service	17
71111.19	Procedures	0PMP07-SF-0001B	Train B ESF Diesel Sequencer Remote Timing Test	2
71111.19	Procedures	0POP02-CV-0004	Chemical and Volume Control System Subsystem	89
71111.19	Procedures	0POP02-DG-0001	Emergency Diesel Generator 11(12)	70
71111.19	Procedures	0PTP03-FP-0106	Fire Protection Water System Functional Test	21
71111.22	Corrective Action Documents	Work Authorization Numbers	562582, 562593	
71111.22	Drawings	5R179F05005#2	Piping & Instrumentation Diagram Chemical and Volume Control System	29
71111.22	Drawings	5R179Z42410#2	Letdown Isolation Valves Logic Diagram System: CV	8
71111.22	Procedures	0PMP08-ZI-0011	Generic Temperature Switch Calibration (Filled Element)	22
71114.02	Corrective Action Documents	Condition Reports	18-02701	
71114.02	Miscellaneous		Updated Prompt Notification System Design Report	3, 4
71114.02	Procedures	0PGP05-ZV-0007	Prompt Notification System	12
71114.03	Miscellaneous		South Texas Project, Units 1 and 2 – Issuance of Amendments RE: Emergency Response Organization Time Augmentation and Staffing Changes to the Emergency Plan	07/19/2018

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			(CAC No. MG0024 and MG0025; EPID L-2017-LLA-0265)	
71114.03	Miscellaneous	0PGP05-ZV-0014, Form 19	ENRS Test	07/05/2017
71114.03	Miscellaneous	0PGP05-ZV-0014, Form 19	ENRS Test	08/22/2017
71114.03	Miscellaneous	0PGP05-ZV-0014, Form 19	ENRS Test	11/17/2017
71114.03	Miscellaneous	0PGP05-ZV-0014, Form 19	ENRS Test	03/06/2018
71114.03	Miscellaneous	0PGP05-ZV-0014, Form 19	ENRS Test	07/24/2018
71114.03	Miscellaneous	0PGP05-ZV-0014, Form 19	ENRS Test	09/25/2018
71114.03	Miscellaneous	0PGP05-ZV-0014, Form 19	ENRS Test	12/11/2018
71114.03	Miscellaneous	0PGP05-ZV-0014, Form 19	ENRS Test	03/07/2019
71114.03	Miscellaneous	0PGP05-ZV-0014, Form 19	ENRS Test	07/01/2019
71114.03	Miscellaneous	NOC-AE-16003406	South Texas Project Units 1 and 2, Docket Nos. STN 50-498; STN 50-499; License Amendment Request for Revision to Staffing and Staff Augmentation Times in the South Texas Project Electric Generating Station Emergency Plan	07/31/2017
71114.03	Miscellaneous	NOC-AE-18003541	South Texas Project Units 1 and 2, Docket Nos. STN 50-498; STN 50-499; Response to Request for Additional Information for the License Amendment Request for Revision to Staffing and Augmentation Times in the South Texas Project Electric Generating Station Emergency Plan (TAC Nos. CAC MG0024, MG0025)	02/12/2018
71114.03	Procedures	0ERP01-ZV-IN03	Emergency Response Organization Notification	18
71114.03	Procedures	0PGP05-ZV-0006	Emergency Notification and Response System	3
71114.03	Procedures	0PGP05-ZV-0014	Emergency Response Activities	16, 19
71114.04	Miscellaneous	0PGP05-ZV-0010, Form 1	Screen Evaluation Form – 0PGP03-ZT-00139 Revision 22 (Emergency Preparedness Training Program (CR Number:	05/15/2017

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			16-8216)	
71114.04	Miscellaneous	0PGP05-ZV-0010, Form 1	Screen Evaluation Form – 0PGP03-ZT-00139, Revision 22 (CR Number: 16-10746)	05/15/2017
71114.04	Miscellaneous	0PGP05-ZV-0010, Form 1	Screen Evaluation Form – 0PGP03-ZA-0106, Revision 10 (CR Number: 16-11776)	11/02/2017
71114.04	Miscellaneous	0PGP05-ZV-0010, Form 1	Screen Evaluation Form – 0PGP03-ZT-0139, Revision 24 (CR Number: 17-21379)	12/17/2018
71114.04	Miscellaneous	0PGP05-ZV-0010, Form 1	Screen Evaluation Form – 0PGP03-ZT-0133, Revision 21 (CR Number: 16-15005)	11/08/2018
71114.04	Miscellaneous	0PGP05-ZV-0010, Form 1	Screen Evaluation Form – 0PGP05-ZV-0014, Revision 19 (CR Number: 19-2630)	03/06/2019
71114.04	Miscellaneous	0PGP05-ZV-0010, Form 1	Screen Evaluation Form – 0PGP05-ZV-0007, Revision 12 (CR Number: 18-13132)	04/01/2019
71114.04	Miscellaneous	0PGP05-ZV-0010, Form 1	Screen Evaluation Form – 0PGP05-ZV-0014 Revision 16 (CR Number: 17-13142)	05/02/2017
71114.04	Miscellaneous	0PGP05-ZV-0010, Form 1	Screen Evaluation Form – 0PGP05-ZV-0014 Revision 16 (CR Number: 15-25466)	05/02/2017
71114.04	Miscellaneous	0PGP05-ZV-0010, Form 1	Screen Evaluation Form – Replacement of the Primary and Backup Meteorological Computer Systems with Met One's New Datalogger System (CR Number: 10-22057)	11/06/2017
71114.04	Miscellaneous	0PGP05-ZV-0010, Form 2	Effectiveness Evaluation Form – Replacement of the Primary and Backup Meteorological Computer Systems with Met One's New Datalogger System (CR Number: 10-22057)	11/06/2017
71114.04	Miscellaneous	0PGP05-ZV-0010, Form 2	Effectiveness Evaluation Form - 0PGP05-ZV-0014 Revision 16 (CR Number: 15-25466)	05/02/2017
71114.04	Miscellaneous	0PGP05-ZV-0010, Form 2	Effectiveness Evaluation Form - 0PGP05-ZV-0014 Revision 16 (CR Number: 17-13142)	05/02/2017
71114.04	Miscellaneous	ZV-0023	10 CFR 50.54(q) Screening Reference Document	0
71114.04	Procedures	0PGP05-ZV-0010	Emergency Plan Change	18
71114.05	Corrective Action Documents	Condition Reports	17-13348, 17-15868, 17-15956, 17-15971, 17-15974, 17-17871, 17-18119, 17-19651, 17-19752, 17-20107, 17-20476, 17-20654, 17-23016, 17-23048, 17-23150, 17-23153, 17-23340, 17-23812, 17-23936, 18-00021, 18-00745, 18-02642, 18-02752, 18-02758, 18-05590, 18-	

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			05947, 18-05948, 18-06280, 18-06387, 18-07599, 18-07662, 18-07669, 18-07953, 19-01602, 19-02390, 18-02782, 18-02790, 18-04072, 18-06526, 18-09002, 18-06610, 19-00803, 19-04749, 19-05986, 19-06149, 19-06637, 19-07274, 19-07433, 19-07455, 19-07467, 19-07557, 19-07558	
71114.05	Miscellaneous		Environmental Sampling Drill Final Report, September 28, 2017	11/29/2017
71114.05	Miscellaneous		Environmental Sampling Drill Final Report, June 13, 2018	11/12/2018
71114.05	Miscellaneous		2017 Health Physics Drill, Final Report, August 17, 2017	10/02/2017
71114.05	Miscellaneous		2018 Health Physics Drill, Final Report, December 13, 2018	12/27/2018
71114.05	Miscellaneous		South Texas Project After Action Report/Improvement Plan, Drill Date – October 31, 2017, Radiological Emergency Preparedness (REP) Program	10/31/2017
71114.05	Miscellaneous		After Action Report/Improvement Plan, Exercise Date – March 8, 2018, Radiological Emergency Preparedness (REP) Program	04/25/2018
71114.05	Miscellaneous		Combined Functional Drill, Final Report, Blue Team, June 21, 2017	09/13/2017
71114.05	Miscellaneous		Combined Functional Drill, Final Report, Red Team, October 25, 2017	11/29/2017
71114.05	Miscellaneous		Combined Functional Drill, Final Report, White Team, November 8, 2017	11/29/2017
71114.05	Miscellaneous		Combined Functional Drill, Final Report, Blue Team, March 1, 2018	04/09/2018
71114.05	Miscellaneous		Ingestion Pathway Evaluated Exercise, Final Report, Blue Team, June 12, 2018	11/08/2018
71114.05	Miscellaneous		Combined Functional Drill, Final Report, Red Team, August 1, 2018	11/08/2018
71114.05	Miscellaneous		Combined Functional Drill, Final Report, White Team, September 19, 2018	11/11/2018
71114.05	Miscellaneous		Matagorda County/STP Emergency Information	02/28/2017
71114.05	Miscellaneous		Matagorda County/STP Emergency Information	11/15/2018
71114.05	Miscellaneous		2017 South Texas Project, Onsite Medical Drill, In	02/14/2017

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			Conjunction with the FEMA MS-1 Medical Exercise	
71114.05	Miscellaneous		2017 Health Physics Drill Final Report, November 14, 2017	02/20/2018
71114.05	Miscellaneous	0PGP03-ZT-0139	Emergency Preparedness Training Program	24
71114.05	Miscellaneous	0PGP05-ZV-0014, Form 16	State of Texas/Matagorda County Annual Review of the STPEGS Emergency Action Levels	08/15/2017
71114.05	Miscellaneous	0PGP05-ZV-0014, Form 16	State of Texas/Matagorda County Annual Review of the STPEGS Emergency Action Levels	10/30/2018
71114.05	Miscellaneous	0PGP05-ZV-0014, Form 2	Annual Review of the Eight-Year Exercise Master Plan	05/15/2019
71114.05	Miscellaneous	Action 18-6526-1	STP DEP Peer Assessment 5/17/2018	05/23/2018
71114.05	Miscellaneous	Action 19-803-1	19-803 Snapshot Self-Assessment	01/30/2019
71114.05	Miscellaneous	Audit Report Number 18-01 (EP)	STP Nuclear Operating Company, Emergency Preparedness Quality Audit Report	03/20/2018
71114.05	Miscellaneous	Audit Report Number 19-01 (EP)	STP Nuclear Operating Company, Emergency Preparedness Quality Audit Report	03/05/2019
71114.05	Miscellaneous	CR 17-15956	Apparent Cause Evaluation, Title: 0PGP05-ZV-0010 Procedure Violations	0, 1
71114.05	Miscellaneous	CR 18-2752	Apparent Cause Evaluation, Title: Combined Functional Drill Weakness	0
71114.05	Miscellaneous	KLD TR-1032	South Texas Project Electric Generating Station, 2018 Population Update Analysis	10/07/2018
71114.05	Miscellaneous	KLD TR-956	South Texas Project Electric Generating Station, 2017 Population Update Analysis	10/08/2017
71114.05	Miscellaneous	LOR-GL-0001	LOR Training Program Guidelines	35
71114.05	Miscellaneous	Quality Monitoring Report Number MN-17-0-106181	2017 ERO Excellence Plan Reviews	05/08/2017
71114.05	Miscellaneous	Quality Monitoring Report Number MN-17-0-106443	Monthly Meeting Between Quality and Emergency Response Division (ERD) Management	10/31/2017
71114.05	Miscellaneous	Quality Monitoring Report Number	ERO Performance at the JIC During the 10/25/2017 Red Team Combined Function Drill	11/07/2017

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		MN-17-0-106445		
71114.05	Miscellaneous	Quality Monitoring Report Number MN-17-0-106505	Monitored Activities in the EOF During the 10/25/2018 Red Team Combined Function Drill	12/12/2017
71114.05	Miscellaneous	ZV-0019	Scenario Design and Development	4
71114.05	Procedures	0ERP01-ZV-TP01	Offsite Dose Calculations	27
71114.05	Procedures	0ERP01-ZV-TS01	TSC Manager	19
71114.05	Procedures	0ERP02-ZV-TS04	Radiological Manager	10
71114.05	Procedures	0PGP03-HU-0001	Human Performance (HU) Program	10
71114.05	Procedures	0PGP03-ZV-0005	Equipment Important to Emergency Response	5
71114.05	Procedures	0PGP03-ZX-0002	Condition Reporting Process	52
71114.05	Procedures	0PGP03-ZX-0002A	CAQ Resolution Process	11
71114.05	Procedures	0PGP03-ZX-0002B	Station Cause Analysis Program	10
71114.05	Procedures	0PGP05-ZV-0001	Emergency Response Exercises and Drills	17
71114.05	Procedures	0PGP05-ZV-00012	Emergency Facility Inventories	17
71114.05	Procedures	CAP-0003	Condition Report Screening	2, 3
71114.05	Procedures	WCG-0002	Work Management Scheduling	40
71114.05	Procedures	ZV-0027	Drill and Exercise Performance Objectives and Demonstration Criteria	6
71114.05	Work Orders	Work Orders	479729, 541207, 560754, 570554, 572441, 577844, 584001, 584397, 585912, 589224, 594004, 596357, 599933, 612012	
71151	Miscellaneous		Crew 1A LOR 184 DEP Drill	09/04/2018
71151	Miscellaneous		Crew 2D LOR 184 DEP Drill	08/14/2018
71151	Miscellaneous		Remediation, LOR 184 DEP Drill	08/16/2018
71151	Miscellaneous		Crew 2B LOR 192 DEP Drill	03/27/2019
71152	Corrective Action Documents	CR-YYYY-NNNN	2015-18885, 2017-15182, 2017-23544, 2018-995, 2018-8533, 2018-1108, 2018-12813, 2018-15270, 2018-15273	
71152	Drawings	5Q159F00045#1	Piping & Instrumentation Diagram Standby Diesel Generator Fuel Oil Storage & Transfer System	35

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71152	Drawings	5Q159F00045#1	Piping & Instrumentation Diagram Standby Diesel Fuel Oil	10