



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION IV
1600 EAST LAMAR BOULEVARD
ARLINGTON, TEXAS 76011-4511

July 28, 2023

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 05000498/2023002 AND
05000499/2023002

Dear G. T. Powell:

On June 30, 2023, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at South Texas Project Electric Generating Station, Units 1 and 2. On July 13, 2023, the NRC inspectors discussed the results of this inspection with you and other members of your staff. The results of this inspection are documented in the enclosed report.

No findings or violations of more than minor significance were identified during this inspection.

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,

A handwritten signature in black ink, appearing to read "Patricia Vossmar".

Signed by Vossmar, Patricia
on 07/28/23

Patricia J. Vossmar, Chief
Reactor Projects Branch A
Division of Operating Reactor Safety

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

Enclosure:
As stated

cc w/ encl: Distribution via LISTSERV

SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION, UNITS 1 AND 2 –
 INTEGRATED INSPECTION REPORT 05000498/2023002 AND 05000499/2023002
 DATED JULY 28, 2023

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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: 05000498/2023002 and 05000499/2023002

Enterprise Identifier: I-2023-002-0003

Licensee: STP Nuclear Operating Company

Facility: South Texas Project Electric Generating Station, Units 1 and 2

Location: Wadsworth, TX 77483

Inspection Dates: April 1, 2023, to June 30, 2023

Inspectors: L. Flores, Resident Inspector
G. Kolcum, Senior Resident Inspector
S. Lichvar, Senior Resident Inspector
C. Stott, Resident Inspector

Approved By: Patricia J. Vossmar, Chief
Reactor Projects Branch A
Division of Operating Reactor Safety

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting an integrated inspection at South Texas Project Electric Generating Station, Units 1 and 2, in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC's program for overseeing the safe operation of commercial nuclear power reactors. Refer to <https://www.nrc.gov/reactors/operating/oversight.html> for more information.

List of Findings and Violations

No findings or violations of more than minor significance were identified.

Additional Tracking Items

None.

PLANT STATUS

Unit 1 began the inspection period in refueling outage 1RE24. The main generator breaker was closed on April 21, 2023, ending the refueling outage. Unit 1 reached rated thermal power on April 24, 2023, and remained there for the rest of the inspection period.

Unit 2 began the inspection period at rated thermal power and remained there for the inspection period.

INSPECTION SCOPES

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

REACTOR SAFETY

71111.01 - Adverse Weather Protection

Seasonal Extreme Weather Sample (IP Section 03.01) (1 Sample)

- (1) The inspectors evaluated readiness for seasonal extreme weather conditions prior to the onset of summer heat conditions for the following systems:
 - emergency diesel generator the week of April 24, 2023
 - essential cooling water pond the week of April 24, 2023

71111.04 - Equipment Alignment

Partial Walkdown Sample (IP Section 03.01) (5 Samples)

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

- (1) Unit 1, component cooling water the week of April 10, 2023
- (2) Unit 1, residual heat removal the week of April 10, 2023
- (3) Unit 1, accumulators the week of April 10, 2023
- (4) Unit 1, containment sumps the week of April 10, 2023
- (5) Unit 1, pressurizer relief valves the week of April 10, 2023

71111.05 - Fire Protection

Fire Area Walkdown and Inspection Sample (IP Section 03.01) (6 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 1, containment the week of April 10, 2023
- (2) Unit 2, electrical auxiliary building, power cable vault train A on May 13, 2023
- (3) Unit 1, electrical auxiliary building electrical penetration area, train B on May 17, 2023
- (4) Unit 2, electrical auxiliary building relay cabinet area of control room, room 202 on May 17, 2023
- (5) Unit 1, essential cooling water intake structure pump room train B on May 17, 2023
- (6) Unit 1, electrical auxiliary building relay cabinet area of control room, room 202 on May 17, 2023

71111.06 - Flood Protection Measures

Flooding Sample (IP Section 03.01) (1 Sample)

- (1) The inspectors evaluated internal flooding mitigation protections in the:
 - Unit 1, mechanical auxiliary building the week of April 10, 2023

71111.11Q - Licensed Operator Regualification 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 and evaluated licensed operator performance in the control room during Unit 1 low power physics testing on April 18, 2023.

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

- (1) The inspectors observed and evaluated operator training on May 22, 2023.

71111.12 - Maintenance Effectiveness

Maintenance Effectiveness (IP Section 03.01) (3 Samples)

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, FLEX steam generator make-up pumps on March 15, 2023
- (2) Unit 1, pressurizer power operated relief valve 656A on April 16, 2023
- (3) Unit 1, pressurizer power operated relief valve 655A on April 17, 2023

Quality Control (IP Section 03.02) (1 Sample)

The inspectors evaluated the effectiveness of maintenance and quality control activities to ensure the following SSC remains capable of performing its intended function:

- (1) Unit 1, pressurizer power operated relief valve 655A gasket replacement on April 17, 2023

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Risk Assessment and Management Sample (IP Section 03.01) (3 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 2, white risk due to planned maintenance during week of April 8, 2023
- (2) Unit 2, white risk due to planned maintenance during week of May 29, 2023
- (3) essential cooling water aluminum bronze piping the week of June 12, 2023

71111.15 - Operability Determinations and Functionality Assessments

Operability Determination or Functionality Assessment (IP Section 03.01) (10 Samples)

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

- (1) Unit 1, main generator phase B pole leak on April 5, 2023
- (2) pressurizer heat group 1C capacity when loaded on April 11, 2023
- (3) Unit 1, electrical auxiliary building ventilation boundary door 365 on April 11, 2023
- (4) Unit 1, accumulator A power lockout to MOV-0039A on April 11, 2023
- (5) Unit 1, pressurizer power operated relief valve discharge high temperature alarm on April 12, 2023
- (6) Unit 1, channel 1 pressurizer pressure to reactor trip bistable not clear on April 17, 2023
- (7) Unit 1, reactor coolant system loop 1 Tavg meter not on scale on April 17, 2023
- (8) Unit 1, main governor valve closed during turbine roll on April 20, 2023
- (9) auxiliary transformer nitrogen pressure low due to leak on April 20, 2023
- (10) Unit 1, train C emergency diesel generator starting air compressor relief on April 23, 2023

71111.18 - Plant Modifications

Temporary Modifications and/or Permanent Modifications (IP Section 03.01 and/or 03.02) (5 Samples)

The inspectors evaluated the following temporary or permanent modifications:

- (1) Unit 1, train C essential cooling water return valve stud and packing gland follower material replacement on January 19, 2023
- (2) Unit 1, check valve SI-10B replacement on April 10, 2023

- (3) essential cooling water stainless steel valves for emergency diesel generator on April 19, 2023
- (4) Unit 1, main generator automatic voltage regulator upgrade on April 20, 2023
- (5) nuclear steam supply system updates on April 21, 2023

71111.20 - Refueling and Other Outage Activities

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

- (1) The inspectors evaluated 1RE24 for startup activities from April 18, 2023.

71111.24 - Testing and Maintenance of Equipment Important to Risk

The inspectors evaluated the following testing and maintenance activities to verify system operability and/or functionality:

Post-Maintenance Testing (PMT) (IP Section 03.01) (7 Samples)

- (1) Unit 1, essential cooling water train 1A pump seal leakage maintenance on April 4, 2023
- (2) Unit 1, steam generator feed pumps shaft speed indicators re-calibration on April 11, 2023
- (3) Unit 1, main generator circuit break "B" phase pressure test on April 12, 2023
- (4) Unit 1, "D" steam generator auxiliary feedwater flow indication error on April 16, 2023
- (5) Unit 1, train C emergency diesel generator packing bolts on April 19, 2023
- (6) Unit 2, instrument air compressor 21 high temperature repair on April 24, 2023
- (7) fire pump 1 temperature alarm on April 25, 2023

Surveillance Testing (IP Section 03.01) (4 Samples)

- (1) Unit 1, main steam safety valve loop B surveillance on March 14, 2023
- (2) main turbine overspeed test on April 12, 2023
- (3) Unit 1, low power physics test on April 18, 2023
- (4) Unit 1, auxiliary feedwater train D quarterly inservice test on June 29, 2023

Inservice Testing (IST) (IP Section 03.01) (1 Sample)

- (1) Unit 1, train D auxiliary feedwater pump on April 18, 2023

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

- (1) local leak rate testing penetration M90 personnel airlock door seals on April 19, 2023

Diverse and Flexible Coping Strategies (FLEX) Testing (IP Section 03.02) (1 Sample)

- (1) Unit 2, train B FLEX diesel test on May 19, 2023

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, 2022, through March 31, 2023)
- (2) Unit 2 (April 1, 2022, through March 31, 2023)

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

- (1) Unit 1 (April 1, 2022, through March 31, 2023)
- (2) Unit 2 (April 1, 2022, through March 31, 2023)

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

- (1) Unit 1 (April 1, 2022, through March 31, 2023)
- (2) Unit 2 (April 1, 2022, through March 31, 2023)

71152A - Annual Follow-up Problem Identification and Resolution

Annual Follow-up of Selected Issues (Section 03.03) (4 Samples)

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

- (1) Unit 1, train A essential cooling water fuse holder
- (2) Unit 2, charging pump A gear box vibrations
- (3) Unit 2, engineered safety feature load sequencer failures
- (4) Unit 1, pressurizer power operated relief valve 655A gasket extent of condition on April 14, 2023

INSPECTION RESULTS

Observation: Negative Trend for Fire Watches	71152S
<p>On October 24, 2022, the licensee's strategic engineering group performed an independent review of site generated condition reports associated with missed and non-compliant fire watches. The licensee's engineering organization identified an adverse trend following review of condition reports 2022-10098, 2022-10077, 2022-9706, 2022-9644, and 2022-9272. The inspectors reviewed the licensee condition reports associated with the fire protection program (missed fire watches, unqualified fire watches), and 2022 quarterly fire watch reviews performed by the Fire Marshall. The inspectors confirmed the negative trend. The site has developed corrective actions in response to their identified deficiencies however, the adequacy of the licensee's corrective actions was not assessed due to their closure dates falling outside of the inspection window.</p> <p>Additionally, the inspectors identified a high turnover rate of fire watch personnel. During the period of November 2022 thru February 2023, the site experienced a turnover rate of approximately 75 percent of the fire watch lead technicians (four positions) with an average length of employment being 4.5 months. During the time of inspection, the licensee's fire watch group was operating with an interim fire watch manager. The licensee initiated CR 23-1917 to address this adverse trend.</p>	

EXIT MEETINGS AND DEBRIEFS

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

- On July 13, 2023, the inspectors presented the integrated inspection results to G. Powell, President and CEO and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.01	Miscellaneous	5Q159MB1023	Standby Diesel Generator System	4
71111.01	Miscellaneous	5R289MB01006	Essential Cooling Water System	9
71111.01	Procedures	0POP02-EW-0001	Essential Cooling Water Operations	85
71111.04	Miscellaneous	5N129MB01045	Safety Injection System	8
71111.04	Miscellaneous	5Q019ND01015	Radioactive Vent and Drain System	2
71111.04	Miscellaneous	5R149MB01027	Reactor Coolant System	9
71111.04	Miscellaneous	5R169MB01021	Residual Heat Removal System	6
71111.04	Miscellaneous	5R209MB01018	Component Cooling Water System	4
71111.05	Procedures	0EAB01-FP-0032	Fire Preplan Electrical Auxiliary Building Relay Cabinet Area of Control Room	5
71111.05	Procedures	0EAB02-FP-0010	Fire Preplan Electrical Auxiliary Building, Power Cable Vault Train A	3
71111.05	Procedures	0EAB03-FP-0031	Fire Preplan Electrical Auxiliary Building Electrical Penetration Area, Train B	4
71111.05	Procedures	1ECW54-FP-0601	Fire Preplan Essential Cooling Water Intake Structure Pump Room Train B	5
71111.12	Corrective Action Documents	CR-YYYY-NNNN	2023-961, 2023-4821, 2023-4049,	
71111.13	Corrective Action Documents	CR-YYYY-NNNN	2023-5983	
71111.13	Procedures	0POP01-ZO-0006	Risk Management Actions (RAMs)	28
71111.13	Work Orders	Work Authorization Number	691193	
71111.15	Corrective Action Documents	CR-YYYY-NNNN	2023-3947, 2023-3901, 2023-3891, 2023-2754, 2023-4240, 2023-4204, 2023-4140, 2023-3627, 2023-3706, 2023-4142,	
71111.18	Engineering Changes		18-9845-1, 20-4781-48, 2012312-1, 00-18220-3, 00-18220-3	
71111.20	Corrective Action Documents	CR-YYYY-NNNN	2006-12433, 2006-14117, 2013-11375, 2013-13380, 2016-12254, 2019-9961-9, 2020-3657-2, 2020-3657-4	
71111.20	Procedures	0PNT01-TQ-1300	Development Phase	

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.20	Procedures	0PNT01-ZT-0300	Operations Training Guideline	
71111.20	Procedures	0POP02-CV-0001	Makeup to the Reactor Coolant System	
71111.20	Procedures	0POP02-RH-0001	Residual Heat Removal System Operations	
71111.20	Procedures	0POP03-ZG-0004	Plant Startup	
71111.20	Procedures	0POP04-FC-0002	Refueling LOCA	
71111.20	Procedures	0POP04-RC-0006	Shutdown LOCA	
71111.20	Procedures	0POP04-RH-0001	Loss of Residual Heat Removal	
71111.20	Procedures	0POP04-RP-0005	COMS Actuation or Failure	
71111.24	Corrective Action Documents	CR-YYYY-NNNN	2023-3944, 2023-3806, 2023-3863, 2023-3627, 2023-786, 2022-13087, 2023-4096, 2023-6419	
71111.24	Procedures	0PEP02-ZX-0022	Initial Critically and Low Power Physics Testing Using RhoPRO	5
71111.24	Procedures	0POP02-AF-0001	Auxiliary Feedwater	60
71111.24	Procedures	0POP07-TM-0001	Main Turbine Overspeed Test	16
71111.24	Procedures	0PSP03-AF-0007	Auxiliary Feedwater Pump 14(24) Inservice Test	63
71111.24	Procedures	0PSP11-MS-0001	Main Steam Valve Inservice Test	24
71111.24	Work Orders	Work Authorization Number	662636	
71151	Procedures	0PAP01-ZA-0101	Plant Procedure Writer's Guide	8
71151	Procedures	0PGP03-ZA-0010	Performing and Verifying Station Activities	41
71151	Procedures	0PGP03-ZA-0090	Work Process Program	44
71151	Procedures	0PGP05-ZN-0007	Preparation and Submittal of NRC Performance Indicators	9
71152A	Corrective Action Documents	CR-YYYY-NNNN	2022-11764, 2022-11716, 2023-782, 2023-819, 2023-1497, 2023-1498, 2023-1499, 2023-328, 2023-1496, 2023-4049, 2023-2765	