

South Texas Project End of Cycle Assessment – 2024

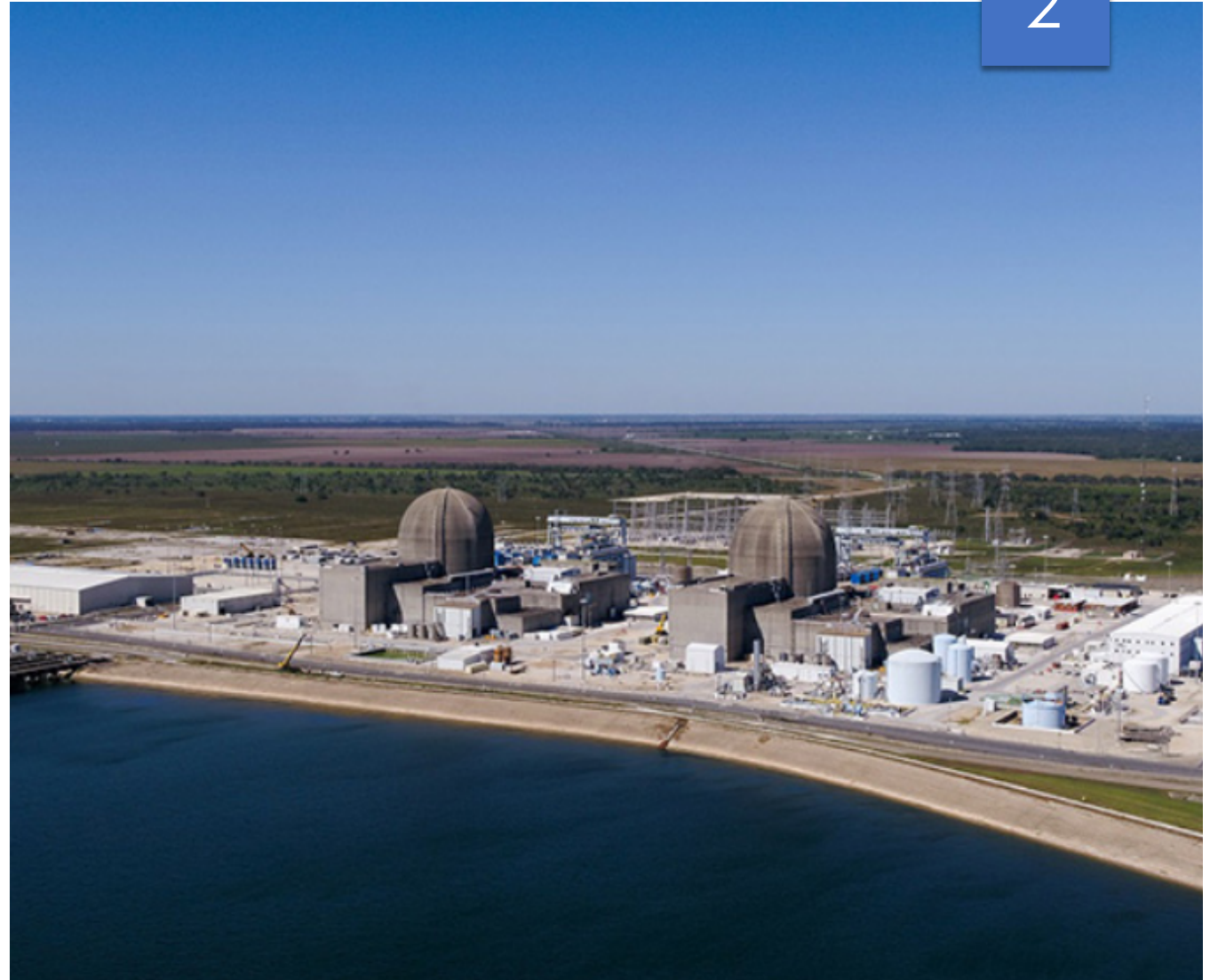
Bay City, Texas
June 24, 2025

NRC RESIDENT INSPECTOR OFFICE:

- **JOHN VERA, SENIOR RESIDENT INSPECTOR**
- **LEANNE FLORES, RESIDENT INSPECTOR**
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NRC REGION IV**

STP 2024 Overview

- ▶ NRC Mission
- ▶ Regulatory Framework
- ▶ 2024 STP Challenges
- ▶ Performance Indicators
- ▶ Findings
- ▶ Plant Performance Assessment
- ▶ NRC Information Channels
- ▶ Questions?

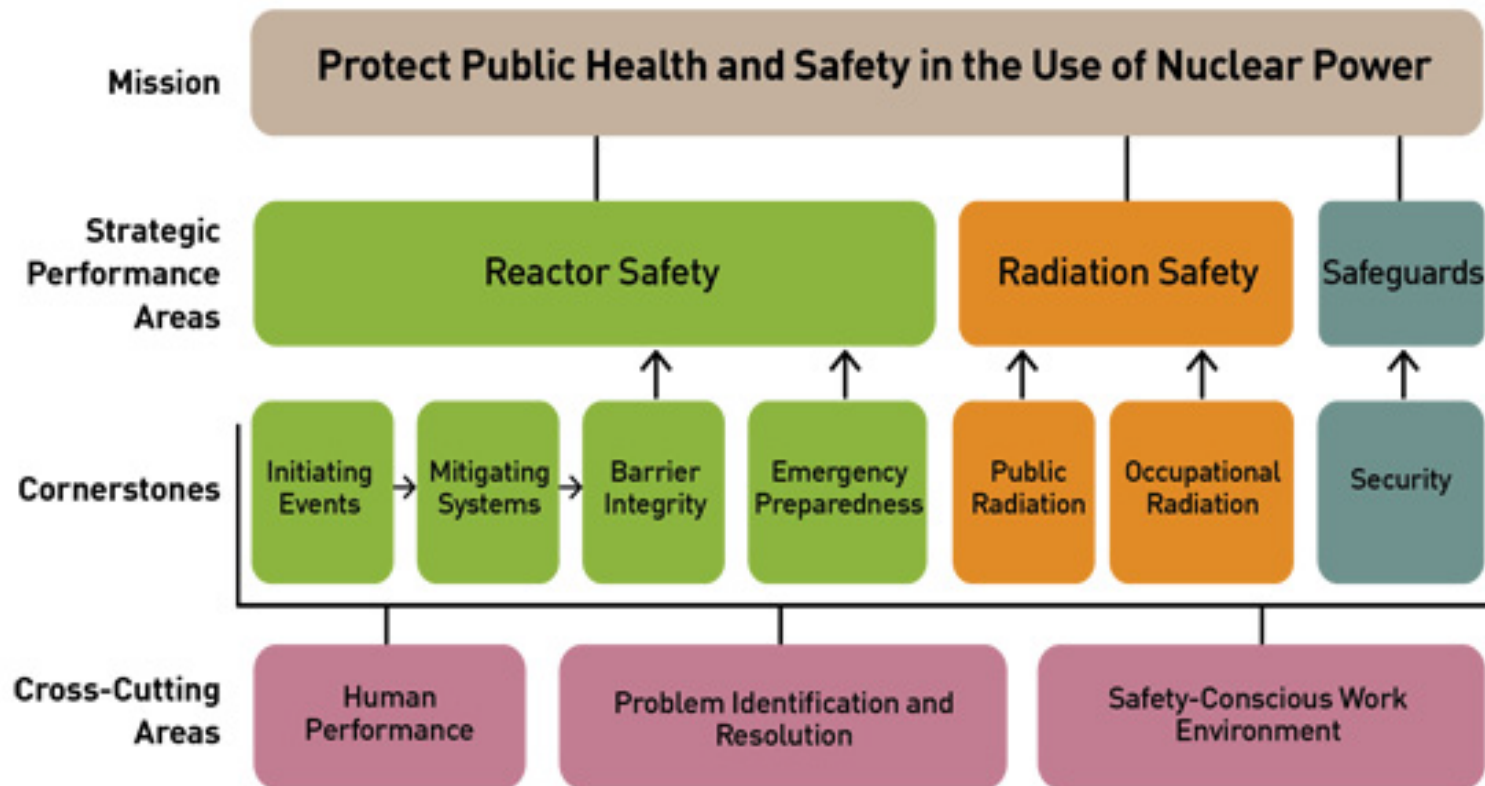


NRC Mission

- ▶ The NRC protects public health and safety and advances the nation's common defense and security by enabling the safe and secure use and deployment of civilian nuclear energy technologies and radioactive materials through efficient and reliable licensing, oversight, and regulation for the benefit of society and the environment.

Regulatory Framework

Reactor Oversight Framework



Regulatory Framework

Reactor Oversight Action Matrix Performance Indicators



*Safety Significance is informed by risk assessment evaluations for Findings.

NRC Assessment of Licensee Performance:

Column 1 (Licensee Response) - All performance indicators and inspection findings GREEN

Column 2 (Regulatory Response) - No more than 2 WHITE inputs in a strategic performance area

Column 3 (Degraded Performance) - 3 WHITE inputs or 1 YELLOW input in a strategic performance area

Column 4 (Multiple/Repetitive Degraded Cornerstone) - Multiple 3 WHITE inputs, multiple YELLOW inputs, RED input

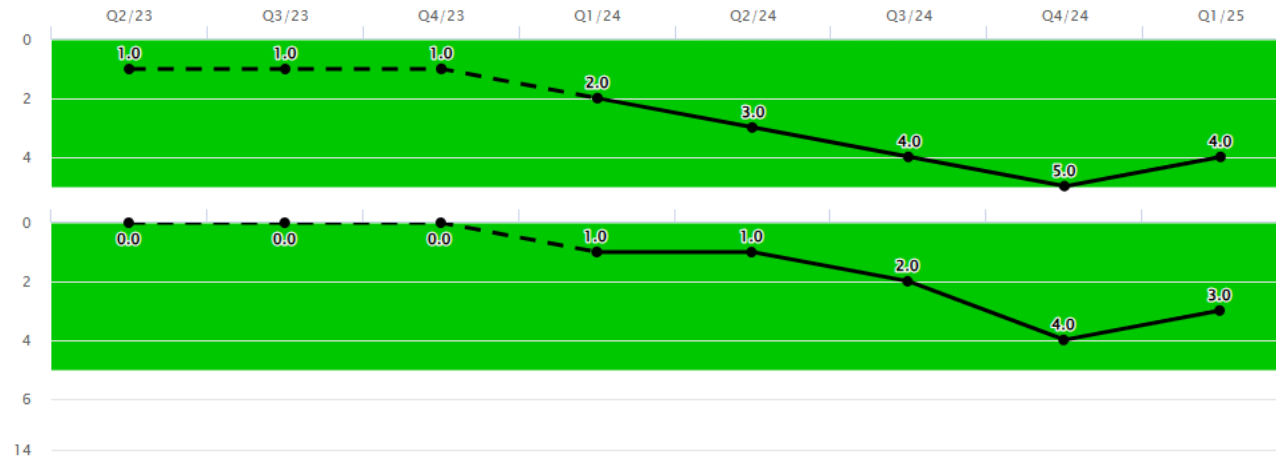
Column 5 (Unacceptable Performance)

2024 STP Challenges

- ▶ 1/21 Unit 1 forced outage due to electrohydraulic control oil leaks and associated fires
 - ▶ Two Steam generator power-operated relief valves (SG PORVs) failed to operate correctly
- ▶ 3/1 Unit 1 forced outage to replace cracked spring on main steam safety relief valve
 - ▶ SG PORV failed to operate correctly
- ▶ **5/12 Unit 2 complicated reactor trip and forced outage due to auxiliary transformer lockout**
 - ▶ Safety 480V load center breaker failed to automatically close on signal
 - ▶ SG PORV failed to operate correctly
- ▶ 6/18 Unit 2 forced outage to repair steam leak on 3/4" line to a pressure transmitter
- ▶ 7/7 Hurricane Beryl
- ▶ **7/24 Unit 1 complicated reactor trip due to shunt reactor failure in switchyard and forced outage**
 - ▶ SG PORV failed to operate correctly
 - ▶ Licensee incorrectly declared a Notice of Unusual Event, challenges delayed informing state and local authorities and the NRC

Performance Indicators

Safety System Functional Failures (PWR)



Thresholds: White > 5.0

Safety System Functional Failures (PWR)	Q2/23	Q3/23	Q4/23	Q1/24	Q2/24	Q3/24	Q4/24	Q1/25
Safety System Functional Failures	1	0	0	1	2	1	1	0
Indicator value	1	1	1	2	3	4	5	4

Safety System Functional Failures (PWR)	Q2/23	Q3/23	Q4/23	Q1/24	Q2/24	Q3/24	Q4/24	Q1/25
Safety System Functional Failures	0	0	0	1	0	1	2	0
Indicator value	0	0	0	1	1	2	4	3

Findings

- ▶ NRC Special Inspection September 8 – 14, 2024 in response to the two complicated reactor trips (May 12 and July 24, 2024):
 - Multiple failures in systems used to mitigate actual events
 - Repetitive failures or events involving safety-related equipment (3 failures of SG PORVs in 2024 in Unit 1)
- ▶ Special Inspection resulted in the White finding issued to STP Unit 2 (in addition to two Green findings and two Severity Level IV violations)
- ▶ Total for year 2024: 1 White Finding, 20 Green findings, 4 Severity Level IV traditional enforcement violations – double of previous 2 years
- ▶ Inadequate procedures and work instructions were major causal factors for the number of findings

Plant Performance Assessment

- ▶ STP Unit 1 remains in Column 1 (Licensee Response), with all inputs of very low safety significance
- ▶ STP Unit 2 moved to Column 2 (Regulatory Response) of Reactor Oversight Process due to White finding
 - White finding is of low to moderate safety or security significance
 - Supplemental inspection per Inspection Procedure 95001 "Supplemental Inspection Response to Action Matrix Column 2 (Regulatory Response) Inputs" - expected around September 2025
- ▶ STP Unit 2 will return to Column 1 once the licensee has demonstrated and the NRC inspected their corrective actions with satisfactory results
- ▶ Licensee has been addressing equipment reliability issues and their causes through a self-imposed recovery plan
- ▶ The plant continues to operate in a safe and secure manner, and there has been improvement in performance noted from August 2024 onwards

NRC Information Channels



- ▶ **Public Website:** <https://www.nrc.gov/>
- ▶ **Facebook:** <https://www.facebook.com/nrcgov/>
- ▶ **YouTube:** <https://www.youtube.com/user/NRCgov>
- ▶ **Flickr:** <https://www.flickr.com/photos/nrcgov/sets>
- ▶ **X:** <https://x.com/nrcgov>
- ▶ **Linkedin:** <https://www.linkedin.com/company/u-s--nuclear-regulatory-commission/>

Questions?



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