



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

December 12, 2022

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 – NRC EXAMINATION REPORT 05000498/2022301; 05000499/2022301

Dear Mr. Powell:

On October 31, 2022, the U.S. Nuclear Regulatory Commission (NRC) completed an initial operator license examination at South Texas Project Electric Generating Station, Units 1 and 2. The enclosed report documents the examination results and licensing decisions. The preliminary examination results were discussed on August 26, 2022, with Mr. Michael Schaefer, Site Vice President, and other members of your staff. A telephonic exit meeting was conducted on October 31, 2022, with Mr. Michael Schaefer, Site Vice President, who was provided the NRC licensing decisions.

The examination included the evaluation of three applicants for reactor operator licenses and eight applicants for instant senior reactor operator licenses. The license examiners determined that nine of the eleven applicants satisfied the requirements of 10 CFR Part 55, and the appropriate licenses have been issued. There was one post-examination comment submitted by your staff. Enclosure 1 contains details of this report and Enclosure 2 summarizes post-examination comment resolution.

The administered written examination, administered operating test, and documents related to the development and review (outlines, review comments and resolution, etc.) of the examination will be withheld from public disclosure until September 09, 2024. However, two applicants received preliminary results letters and were provided copies of the senior reactor operator portion of the written examination material. For examination security purposes, your staff should consider that written examination material uncontrolled and available to the public.

No findings were identified during this examination.

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,



Signed by Gepford, Heather
on 12/12/22

Heather J. Gepford, Ph.D., Chief
Operations Branch
Division of Operating Reactor Safety

Docket No. 50-498, 50-499
License No. NPF-76, NPF-80

Enclosures:

1. Examination Report 05000498/2022301,
05000499/2022301
w/attachment: Supplemental
Information
2. NRC Post-Examination Comment
Resolution

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EXAMINATION REPORT 05000498/2022301; 05000499/2022301- DECEMBER 12, 2022

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By: BAB ☒ Yes ☐ No ☒ Publicly Available ☐ Sensitive NRR-079

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U.S. NUCLEAR REGULATORY COMMISSION
Examination Report

Docket Number: 05000498; 05000499

License Number: NPF-76, NPF-80

Report Number: 05000498/2022301; 05000499/2022301

Enterprise Identifier: L-2022-OLL-0015

Licensee: STP Nuclear Operating Company

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

Location: Wadsworth, TX

Inspection Dates: August 22, 2022, to October 31, 2022

Inspectors: B. Bergeon, Senior Operations Engineer
J. Kirkland, Senior Operations Engineer
C. Osterholtz, Senior Operations Engineer
N. Hernandez, Operations Engineer
D. You, Operations Engineer

Approved By: Heather J. Gepford, Ph.D., Chief
Operations Branch
Division of Operating Reactor Safety

SUMMARY

Examination Report 05000498/2022301; 05000499/2022301; August 22 – October 31, 2022; South Texas Project; Initial Operator Licensing Examination Report

The NRC examiners evaluated the competency of three applicants for reactor operator licenses and eight applicants for instant senior reactor operator licenses at South Texas Project.

The licensee developed the examinations using NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 12. The written examination was administered by the licensee on September 8, 2022. The NRC examiners administered the operating tests on August 22-25, 2022.

The NRC examiners determined that nine of the eleven applicants satisfied the requirements of 10 CFR Part 55, and the appropriate licenses have been issued.

A. NRC-Identified and Self-Revealing Findings

None.

B. Licensee-Identified Violations

None.

REPORT DETAILS

OTHER ACTIVITIES – INITIAL LICENSE EXAM

.1 License Applications

a. Scope

The NRC examiners reviewed all license applications submitted to ensure each applicant satisfied relevant license eligibility requirements. The NRC examiners also audited four of the license applications in detail to confirm that they accurately reflected the subject applicant's qualifications. This audit focused on the applicant's experience and on-the-job training, including control manipulations that provided significant reactivity changes.

b. Findings

No findings were identified.

.2 Examination Development

a. Scope

The NRC examiners reviewed integrated examination outlines and draft examinations submitted by the licensee against the requirements of NUREG-1021. The NRC examiners conducted an onsite validation of the operating tests.

b. Findings

The NRC examiners provided outline, draft examination, and post-validation comments to the licensee. The licensee satisfactorily completed comment resolution prior to examination administration.

The NRC examiners determined the written examinations and operating tests initially submitted by the licensee were within the range of acceptability expected for a proposed examination.

.3 Operator Knowledge and Performance

a. Scope

The NRC examination team administered the operating tests to ten applicants from August 22-25, 2022. One SRO applicant was excused from taking the operating test.

On September 8, 2022, the licensee proctored the administration of the written examinations to all eleven applicants. The licensee staff graded the written examinations, analyzed the results, and presented their analysis and post-examination comments to the NRC on September 20, 2022.

b. Findings

No findings were identified.

Nine of the eleven applicants passed the written examination and all parts of the operating test. The final examinations and post-examination analysis and comments may be accessed in the ADAMS system under the accession numbers noted in the attachment. In accordance with the current NRC policy, the release of both the operating test and the written examination in ADAMS to the public will be delayed for two years, with a release date of September 09, 2024.

The examination team noted three generic weaknesses associated with applicant performance on the dynamic scenario, walkthrough JPM, and administrative JPM sections of the operating test. The applicants displayed a weakness identifying the correct technical specifications for an instrument failure during a scenario. The applicants displayed a weakness reviewing and identifying errors on an equipment clearance order on an administrative JPM. The applicants also displayed a weakness when performing a radiation monitor channel check on a walkthrough JPM. These weaknesses were captured in the licensee's corrective action program as Condition Reports 22-9085, 22-9090, and 22-9088.

On September 20, 2022, and October 13, 2022, the licensee presented documentation noting there was one post-examination comment for consideration by the NRC examiners when grading the written examination. The post-examination comment is documented in Enclosure 2 of this report.

Post-examination analysis revealed four generic weaknesses associated with applicant performance on the written examination. Specifically, the following questions had a miss rate of greater than 50%: Questions 6, 83, 89, and 93. These weaknesses were captured in the licensee's corrective action program as Condition Report 22-10142. Copies of all individual examination reports were sent to the facility Training Manager for evaluation and determination of appropriate remedial training.

.4 Simulation Facility Performance

a. Scope

The NRC examiners observed simulator performance with regard to plant fidelity during examination validation and administration.

b. Findings

No findings were identified.

.5 Examination Security

a. Scope

The NRC examiners reviewed examination security for examination development during both the onsite preparation week and examination administration week for compliance

with 10 CFR 55.49 and NUREG-1021. Plans for simulator security and applicant control were reviewed and discussed with licensee personnel.

b. Findings

No findings were identified.

EXIT MEETINGS AND DEBRIEFS

Exit Meeting Summary

The chief examiner presented the preliminary examination results to Mr. Michael Schaefer, Site Vice President, and other members of your staff on August 26, 2022. A telephonic exit was conducted on October 31, 2022, between Mr. B. Bergeon, chief examiner, and Mr. Michael Schaefer, Site Vice President.

The licensee did not identify any information or materials used during the examination as proprietary.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

B. Simpson, Training Manager
M. Fortner, Operations Training Manager
J. St. Clair, Operations Training Support Supervisor
J. Trudeau, Initial Training Supervisor
A. Vest, Exam Author
T. Dedas, Exam Author

NRC Personnel

G. Kolcum, Senior Resident Inspector

ADAMS DOCUMENTS REFERENCED

Accession No. ML22276A243 - FINAL WRITTEN EXAMS
Accession No. ML22250A444 - FINAL OPERATING TEST
Accession No. ML22276A263 - POST-EXAMINATION ANALYSIS-COMMENTS

NRC Resolution to the South Texas Project Electric Generating Station's
Post-Examination Comment

A complete text of the licensee's post-examination analysis and comments can be found in ADAMS under Accession Number ML22276A263.

SRO QUESTION # 93

The Unit 1 MAIN TRANSFORMER deluge system inadvertently actuates and can NOT be reset.

- Fire Protection System pressure lowers to 98 psig.
- 15 minutes later the crew isolates the deluge system and Fire Protection System pressure rises to its normal value.

Complete the following:

____(1)____ Fire Pumps started.

Per 0PGP03-ZF-0018, with the MAIN TRANSFORMER deluge system isolated, a Fire Watch ____ (2) ____ be established.

- A. (1) 2
(2) does not have to
- B. (1) 2
(2) must
- C. (1) 3
(2) does not have to
- D. (1) 3
(2) must

Proposed Answer: C

Distractor A is incorrect. Plausible with a misunderstanding of Fire Pump auto-start setpoints.

Distractor B is incorrect. Plausible with a misunderstanding of Fire pump auto-start setpoints and a fire watch is required for other deluge systems.

Answer C is correct. With Fire Header pressure dropping below 110 psig, all 3 Fire Pumps would start. For a non-Technical Specification deluge system, a Fire Watch is not required.

Distractor D is incorrect. Plausible as all 3 Fire Pumps would start and fire watches are required for some deluge systems.

References: 0PGP03-ZF-0018
LOT 201.29

FACILITY POST-EXAM COMMENT:

The 1st half of the question required the students to recall the automatic start feature for the Fire Pumps. With pressure dropping to below 110 psig, all 3 Fire Pumps would start.

The 2nd half of the question required the students to determine if a Fire Watch would be required if the Main Transformer deluge system was isolated.

All 8 SRO candidates incorrectly selected choice D (Fire Watch required). 1 of 2 validators selected choice D also.

0PGP03-ZF-0018, Fire Protection System Functionality Requirements, step 4.3 states: "The SPRINKLER or SPRAY SYSTEMS identified in Addendum 2 SHALL be functional whenever the equipment protected by them is required to be operable by Technical Specifications."

During the post-exam review, the candidates stated that they chose "D" because a loss of the Main Transformer would result in an entry into Technical Specifications, thus a Fire Watch would be required.

The Main Transformer is required to be in service to consider the Unit Auxiliary Transformer as an offsite source, as required by Technical Specification 3.8.1.1, AC Sources. If the Main Transformer was not available, it would result in entry into Technical Specification 3.8.1.1.e, for the loss of 2 offsite sources.

Additionally, 0PGP03-ZF-0018, Addendum 2, Halon, Sprinkler, and Fixed Water Spray Systems, contains the areas that would require a Fire Watch but does not include the Main Transformer. Since the candidates would not be required to memorize Addendum 2 or the equipment not listed in Addendum 2, the procedure step shown above caused the students to conclude that the Main Transformer would require a Fire Watch since its loss would result in a Technical Specification entry.

To answer this question correctly, additional information in the stem of the question would be necessary to correctly answer this question on a closed book Initial License NRC Written Exam.

Per NUREG-1021, Rev. 12, ES-4.4 C.3.c first bullet:

- A question with an unclear stem that confused the applicants or did not provide all the necessary information (to assist in determining whether an unclear stem confused the applicants, closely evaluate any applicant questions asked during the examination; also evaluate the question stem to determine whether the information provided could reasonably result in the applicant misunderstanding the intent of the question or the validity of the answer choices)

Based upon this information and NUREG-1021, Rev. 12, ES-4.4, A.5-6, Question 93 is recommended to be removed from the exam. The question will be deactivated and revised prior to reuse.

Supplemental information provided to the NRC:

The question is in two parts, all eight students correctly answered the first part which was the impact to the Fire Water system upon the actuation and subsequent isolation of the flow path. The basis of our challenge is that SRO candidates are not required to possess knowledge, from memory, of the safety or non-safety class designation of all plant equipment, which is required on the second part of the question. The candidates were able to apply their knowledge to the question, understanding that a loss of the Main Transformer would require entry into Technical Specifications, however the lack of clarity of the question comes when they are discerning whether the component class status requires a Fire Watch upon its loss. The candidates shared during the review, that all Technical Specifications equipment with impaired fire protection would require a Fire Watch as a compensatory measure. This led to the confusion of requirements of specific components that are non-safety class but are necessary to meet the requirements of Technical Specifications. One such example are the Engineered Safety Features (ESF) Transformers which are essential to meet the requirements of Technical Specification 3.8.1.1, AC Sources, but due to being non-safety class, its loss of fire protection would not require a Fire Watch. It is this differentiation that makes it very difficult to determine based purely on the knowledge, from memory, of being required by Technical Specifications. The question's stem could have been made clear, without handouts, if the SRO candidates were given additional information about the component. The following are a couple of examples that would provide this:

(a) The Unit 1 **Non-Safety Class** MAIN TRANSFORMER . . .

OR

(b) The Unit 1 MAIN TRANSFORMER (TPNS 7X151EMT001B) . . .

Either enhancement would have allowed the SRO candidates to decide whether a Fire Watch would be required upon the loss of fire protection to the affected component. Without this additional information, the students, without a reference, would not be expected to recall this requirement from memory. Understanding that it was non-safety class, the candidates would know that though an entry into a Technical Specification action statement is required, a Fire Watch is not necessary.

NRC RESOLUTION:

Recommendation not accepted. The NRC does not agree with the licensee's contestation that the stem is unclear and that, as a result, the question should be removed from the examination.

The licensee provided two interrelated bases for contesting the question, focusing on the second part of the 2x2 question. Specifically, (1) the stem lacked clarity by not providing all the necessary information required to answer the question correctly (2) because the applicants are not required to possess knowledge, from memory, of the safety or non-safety class designation of all plant equipment.

NUREG-1021, Rev. 12, Section ES-4.4, bullet C.3.c states, in part, that the NRC will consider examination changes for the following types of errors, if identified and adequately justified by the facility:

- A question with an unclear stem that confused the applicants or did not provide all the necessary information (to assist in determining whether an unclear stem confused the

applicants, closely evaluate any applicant questions asked during the examination; also evaluate the question stem to determine whether the information provided could reasonably result in the applicant misunderstanding the intent of the question or the validity of the answer choices).

No applicants asked any questions regarding question 93 during the examination, suggesting an unclear stem did not cause confusion for the applicants during the examination.

The NRC evaluated the question stem to determine whether the information [not] provided could reasonably result in the applicant misunderstanding the intent of the question. The stem asked whether a fire watch is required with deluge isolated to the main transformers in accordance with OPGP03-ZF-0018. Step 4.3.1 of the procedure states, "The SPRINKLER or SPRAY SYSTEMS **identified in Addendum 2** *[emphasis added]* SHALL be functional whenever the equipment protected by them is required to be operable by Technical Specifications." As such, the applicants were expected to know the contents of Addendum 2 to correctly answer the question.

The licensee contended that the stem of the question was unclear, as the applicants arrived at the incorrect answer due to not knowing that the main transformers were non-safety class equipment while having technical specification applicability. Specifically, the licensee stated, "...the procedure step shown above [step 4.3.1] caused the students to conclude that the main transformer would require a Fire Watch since its loss would result in a Technical Specification entry." The NRC noted that while the main transformers have technical specification applicability (TS 3.8.1.1), the main transformers are not listed in Addendum 2 of OPGP03-ZF-0018.

However, the question was intended to test knowledge of OPGP03-ZF-0018 and its addenda, not the knowledge that a fire watch is not necessary for non-safety class equipment even though an entry into a technical specification action statement is required. Thus the NRC concluded that the applicants' lack of information regarding the safety classification of the main transformers was a knowledge gap that was not necessary to correctly answer the question as written. Further, adding information related to the classification of the equipment to the stem to allow the applicants to determine the correct answer based on knowledge other than that contained in the procedure OPGP03-ZF-0018 would change the intent of the question. While the licensee contends that "The question's stem could have been made clear, without handouts, if the SRO candidates were given additional information about the component," the question was written, validated, and approved under the basis that the applicants would know the requirements of OPGP03-ZF-0018, including Addendum 2. As such, the stem of the question, which asked the applicant to provide an answer based on the assumed knowledge of the contents of a procedure, was clear as written.

Based on the licensee's contention that the applicants were not required to possess knowledge, from memory, of the safety or non-safety class designation of all plant equipment and that "the candidates would not be required to memorize Addendum 2 or the equipment listed in Addendum 2", the NRC concluded that NUREG-1021, Rev. 12, Section ES-4.4, bullet C.3.d was also relevant to evaluating the validity of the question:

- The NRC will not accept examination changes for following types of question errors identified after examination administration: a question for which references would be needed to provide the correct answer, even though the facility licensee and the NRC previously agreed that the question should be closed-reference.

- While the knowledge required to correctly answer the question resides in an addendum of the procedure, the question was written, reviewed, and approved by both the licensee and the NRC prior to administering the examination and was determined to not require a reference or need additional information in the question stem to correctly answer. However, based on the licensee's contention that Addendum 2 requirements were not required to be known from memory, the question should have been provided with a reference.

In summary, despite the licensee's contention that the candidates would not be required to memorize Addendum 2 or the equipment not listed in Addendum 2, in accordance with the guidance in NUREG-1021, Rev. 12, Section ES-4.4, Bullet C.3.d, the NRC will not accept examination changes based on the determination that a reference should have been provided. Additionally, the NRC concluded that while additional information in the stem of the question may have allowed the applicants to deduce the correct answer, the knowledge being tested was of the procedural requirements for a fire watch not whether fire watches were required as a function of the equipment's technical specification applicability and/or safety classification.

Answer C remains the only correct answer as no additional information in the question stem was necessary to arrive at the correct answer.