**ENCLOSURE**

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

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| Docket Nos.: | 50-498; 50-499 |
| License Nos.: | NPF-76; NPF-80 |
| Report No.: | 50-498/98-301; 50-499/98-301 |
| Licensee: | STP Nuclear Operating Company |
| Facility: | South Texas Project Electric Generating Station, Units 1 and 2 |
| Location: | FM 521 - 8 miles west of Wadsworth<br>Wadsworth, Texas |
| Dates: | June 1-4, 1998 |
| Inspectors: | Howard F. Bundy, Chief Examiner<br>Ryan E. Lantz, Reactor Engineer, Examiner/Inspector |
| Approved By: | John L. Pellet, Chief, Operations Branch<br>Division of Reactor Safety |

ATTACHMENTS:

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| Attachment 1: | Supplemental Information |
| Attachment 2: | Simulation Facility Report |
| Attachment 3: | Post-Examination Comments |
| Attachment 4: | Final Written Examination and Answer Key |

## EXECUTIVE SUMMARY

South Texas Project Electric Generating Station, Units 1 and 2
NRC Inspection Report 50-498/98-301; 50-499/98-301

NRC examiners evaluated the competency of six senior operator applicants for issuance of operating licenses at the South Texas Project Electric Generating Station, Units 1 and 2. The licensee developed the initial license examinations using the guidance in NUREG-1021, Interim Revision 8, January 1997. NRC examiners reviewed and approved the examinations. The initial written examinations were administered to all six applicants on June 30, 1998, by facility proctors in accordance with the guidance in NUREG-1021, Interim Revision 8. The NRC examiners administered the operating tests June 2-4, 1998.

### Operations

- Five of the six applicants for senior operator licenses passed their examinations. Applicants demonstrated effective oversight and good communication techniques during the dynamic scenarios. A common applicant performance weakness involving clearance order review was identified in that the majority of the applicants failed to or were slow in identifying that component cooling water had not been designated for isolation for overhaul of a residual heat removal pump (Sections O4.1 and O4.2).

- The examination submitted was adequate for administration and required only limited enhancement and editorial corrections. The senior operators assigned for examination validation provided valuable enhancement suggestions. The licensee staff was highly responsive to incorporating enhancement suggestions developed during the review process (Section O5.1).

## Report Details

### Summary of Plant Status

Both units operated at 100 percent power for the duration of this inspection.

## I. Operations

### 04 Operator Knowledge and Performance

#### 04.1 Initial Written Examination

a. Inspection Scope

On June 30, 1998, the facility licensee proctored the administration of the written examination, approved by the chief examiner and NRC Region IV supervision, to six individuals who had applied for upgrading their reactor operator licenses to senior operator licenses. The licensee proposed grad g for the written examinations and evaluated the results for question validity and generic weaknesses. The examiners reviewed the licensee's results.

b. Observations and Findings

Five of the six applicants passed the written examination. Written examination scores ranged from a low of 73 to a high of 91 percent with an average of 84 percent overall and a lowest passing score of percent. Greater than 50 percent of the applicants missed 16 questions. Post-examination review by the licensee indicated that the questions missed were primarily due to isolated knowledge and training weaknesses. However, no broad scoped commonalities were determined from the missed question analysis. The licensee's post-examination review resulted in the recommendation that the answer for Question 57 be changed to accept both choices 'A' and 'D' as correct. The proposed change was accepted based on the technical merits and the examinations were evaluated incorporating this change. The licensee's post examination comments are included in Attachment 3.

c. Conclusions

Five of the six license applicants passed the written examinations. No broad knowledge or training weaknesses were identified as a result of evaluation of the graded examinations.

04.2 Initial Operating Test

a. Inspection Scope

The examination team administered the various parts of the operating examination to the six applicants on June 2-4, 1998. Each applicant participated in three scenarios. However, each applicant was formally evaluated for senior operator license only for the scenario in which he participated as the control room senior operator in charge. Each applicant also received a control room and facilities walkthrough test, which consisted of five tasks with followup questions, and an administrative test, which consisted of five tasks in four administrative areas.

b. Observations and Findings

All applicants passed all sections of the operating test. The examiners noted appropriate use of peer and self-checking practices in all areas of the examinations. When evaluated in the senior operator in charge position for the dynamic scenarios, all applicants demonstrated effective oversight and good communication techniques. The applicants displayed effective application of technical specifications and emergency and abnormal procedures.

The applicants generally performed well on the systems and facility walkthrough and administrative tasks. However, on one administrative task the majority of the applicants failed to or were slow in identifying that component cooling water had not been designated for isolation as reviewed during review of a clearance order for overhaul of a residual heat removal pump.

c. Conclusions

All six applicants passed all parts of the operating test. Applicants demonstrated effective oversight and good communication techniques during the dynamic scenarios. The examiners identified a common applicant performance weakness involving clearance order review in that the majority of the applicants failed to or were slow in identifying that component cooling water had not been designated for isolation for overhaul of a residual heat removal pump.

**05 Operator Training and Qualification**

05.1 Initial Licensing Examination Development

The facility licensee developed the initial licensing examination in accordance with NUREG-1021, Interim Revision 8, "Operator Licensing Examination Standards for Power Reactors."

05.1.1 Examination Outline

a. Inspection Scope

The facility licensee submitted the initial examination outline on December 17, 1997. The chief examiner reviewed the submittal against the requirements of NUREG-1021, Interim Revision 8.

b. Observations and Findings

Region IV approved the initial examination outline with minor comments for enhancement, which were promptly resolved, and advised the licensee to proceed with examination development.

c. Conclusions

The licensee submitted an examination outline in a timely manner, which required only minor revisions for enhancement.

05.1.2 Examination Package

a. Inspection Scope

The facility licensee submitted the completed draft examination package on February 27, 1998. Prior to formal submittal of the examination package, meetings were held in the Region IV office on January 27 and February 12, 1998, to discuss examination development issues. These meetings were attended by licensee representatives J. Calvert, Operations Training Manager, and M. DeFrees, Licensed Operator Training Supervisor, and the chief examiner and operations branch chief. The chief examiner reviewed the submittal against the requirements of NUREG-1021, Interim Revision 8. An onsite review of the revised examination was conducted during the period March 20-23, 1998.

b. Observations and Findings

The draft written examination contained 100 questions. The questions were predominantly new for this examination. The draft examination was considered technically valid, to discriminate at the proper level, and responsive to the sample plan submitted by the licensee on December 17, 1997. The chief examiner provided enhancement suggestions on 11 questions, which were appropriately incorporated by the licensee. The suggested enhancements generally related to clarity of the question stem and distractor plausibility. The chief examiner also identified an error in the answer for original Question 73, which related to the definition of core alterations. The licensee replaced this question and initiated a station condition report to investigate a potential discrepancy in fuel handling procedures. In addition, the licensee changed the wording

on several other questions in response to a generic chief examiner comment regarding minor grammatical errors. Finally, prior to administration, the licensee modified Question 37 to reflect deletion of the original reference and enhanced the distractors on Question 48. Minor editorial changes were made to 4 other questions.

The operating test consisted of dynamic scenarios, administrative tasks, and system tasks with followup questions. The licensee submitted four dynamic scenarios, including one backup scenario, which was not used during the examination. The submitted scenarios conformed to NUREG-1021. The licensee subsequently incorporated several minor enhancement suggestions provided by the chief examiner and the licensee validation crew during the week of March 20, 1998.

To support the administrative section of the operating test the licensee submitted five administrative tasks. Although the submitted tasks were satisfactory test items, enhancements, and clarifications were necessary for each task in response to chief examiner questions and comments. Also, during the onsite review it was discovered the answer for Job Performance Measure A3, "Review a Tagout," was not complete and further changes were necessary. In addition, the onsite validation time for Job Performance Measure A3 was in excess of one hour, which required a reduction in task scope. Enhancements were made to other job performance measures during the onsite review.

To support the systems walkthrough section of the operating test, the licensee submitted five system job performance measures with two followup questions associated with each. The chief examiner provided only one editorial comment on the job performance measures. However, several enhancements were made to the job performance measures during the onsite review. Also, it was necessary to modify the cues to clarify the scope of the task for Job Performance Measure 3, "Place a Class 1E 125V DC Battery Charger in Service."

Many of the enhancements made to the operating test during the onsite review were directly attributable to comments and suggestions by the validation crew, which was comprised of senior operator members of an off-duty shift crew.

c. Conclusions

The examination submitted was adequate for administration and required only limited enhancement and editorial corrections. The meetings with licensee training representatives in the Region IV office were instrumental in achieving a satisfactory examination submittal. The senior operators assigned for examination validation provided valuable enhancement suggestions. The licensee staff was highly responsive to incorporating enhancement suggestions developed during the review process.

05.2 Simulation Facility Performance

a. Inspection Scope

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

b. Observations and Findings

The simulation facility supported the validation and administration of the examination well. However, as discussed in Attachment 2, there were general failures on two occasions for one scenario during the onsite review and an identical failure during examination administration. The failures had minimal impact on the review effort. However, the failure during examination administration required use of the backup scenario for one crew. No other fidelity problems were observed.

c. Conclusions

The simulator and simulator staff supported the examinations well. General simulator failures had minimal impact on examination review and slight impact on examination administration.

05.3 Examination Security

a. Scope

The examiners reviewed examination security both during on site preparation week and examination administration week for compliance with NUREG-1021 requirements.

b. Observations and Findings

Members of the licensee's operations and training staff signed onto the NUREG-1021 approved examination security agreement acknowledging their responsibilities for examination security. The licensee maintained secure areas for examination development, review, validation, and administration. Signs were conspicuously posted to avoid inadvertent unauthorized access, and doors were maintained locked with good key control to ensure proper access to sensitive areas. Applicants were maintained under constant supervision and were always escorted to and from examination points. Simulator security was strictly complied with.

c. Conclusions

Effective examination security was maintained.

## V. Management Meetings

### X1 Exit Meeting Summary

The chief examiner presented the preliminary inspection results to members of the licensee management at the conclusion of the operating test administration on June 4, 1998. Final results of the inspection were presented by Mr. John Pellet during a telephone conference with Mr. Mike DeFrees on July 8, 1998. The licensee acknowledged the findings presented.

The licensee did not identify as proprietary any information or materials examined during the inspection.

**ATTACHMENT 1**

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee

J. Calvert, Manager, Operations Training
G. Chitwood, Examination Lead
K. Coates, Manager, Nuclear Training
M. DeFrees, Lead Instructor, Licensed Operator Training
W. Dowdy, Unit 2 Operations Manager
J. Lovell, Manager, Generation Support
K. Struble, Instructor, Licensed Operator Training

NRC

G. Guerra, Resident Inspector

INSPECTION PROCEDURE USED

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|---|---|
| NUREG-1021 | "Operator Licensing Examination Standards for Power Reactors," Interim Revision 8 |

**ATTACHMENT 2**

SIMULATION FACILITY REPORT

Facility Licensee: STP Nuclear Operating Company

Facility Docket: 50-498; 50-499

Operating Examinations Administered at: STP Electric Generating Station, Units 1 and 2

Operating Examinations Administered on: June 2-4, 1998

These observations do not constitute audit or inspection findings and are not, without further verification and review, indicative of noncompliance with 10 CFR 55.45(b). These observations do not affect NRC certification or approval of the simulation facility, other than to provide information, which may be used in future evaluations. No license action is required in response to these observations.

Deficiency identified During Examination Preparation

- During scenario validation, RCFC 11A outlet air temperature indicator was reading 150° F when actual temperature was 62° F. Replaced sticking meter to correct erroneous reading.

- The F.B. exhaust filter train isolation dampers took an unrealistically long time to close during realignment of F.B. VAC while performing POP05-EO-EO00, i.e., 13 to 17 seconds versus 7 seconds expected in the plant. The stroke time was adjusted in the simulator.

- During a LOCA the simulator stopped responding and the audible simulator trouble alarm actuated on two occasions. On the third attempt, the simulator performed as expected.

Deficiency Identified During Examination Administration

- Despite the simulator staff's unsuccessful attempts to reproduce the simulator failure several times prior to examination administration, it recurred at the identical point in the LOCA scenario during applicant evaluation.

**ATTACHMENT 3**

**SOUTH TEXAS PROJECT**
**WRITTEN EXAM (6/30/98)**

**POST-EXAM APPLICANT COMMENTS**

QUESTION 57, ANSWER 'D'

REFERENCES: 0POP05-EO-F002, Core Cooling Critical Safety Function Status Tree
0POP05-EO-FRC3, Response to Saturated Core Cooling, Step 2

COMMENT: Use of High Head Injection (Answer 'S') is also an 'appropriate method' to use under the specified circumstances.

RESOLUTION: Comment accepted. Accept choices 'A' and 'D'. Choice 'A' was originally thought to be incorrect based on not being applicable unless RCS pressure was below 1745 psig. The question stem specified an RCS pressure of 1785 psig. However, 0POP05-EO-FRC3, Response to Saturated Core Cooling, Step 2b, has the operators establish HHSI flow regardless of whether pressure is above or below 1745 psig. The importance of being above or below 1745 psig is related to whether charging flow should be established, not HHSI flow.