

ENCLOSURE

U. S. NUCLEAR REGULATORY COMMISSION
REGION IV

Inspection Report: 50-498/95-28
50-499/95-28

Licenses: NPF-76
NPF-80

Licensee: Houston Lighting & Power Company
P.O. Box 1700
Houston, Texas

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


Inspection At: Bay City, Texas

Inspection Conducted: November 27 through December 1, 1995

Inspector: T. O. McKernon, Reactor Engineer, Operations Branch
Division of Reactor Safety

Accompanying Personnel: K. G. Erickson, Contractor
Pacific Northwest Labs

Approved:



Joseph I. Tapia, Acting Branch Chief
Operations Branch
Division of Reactor Safety

12/12/95
Date

Inspection Summary

Areas Inspected (Units 1 and 2): Routine, announced inspection of the licensed operator requalification program.

Results:

Plant Operations

- Evaluators administering the requalification examination were systematic and professional in their assessments of the requalification crews. The performance of the evaluators was considered a strength (Section 1.2).
- The breadth of some examination material was limited (Section 1.1).
- The training feedback system utilized a number of different mechanisms for revising and maintaining the requalification program up-to-date. The feedback system, as well as the working relationship between the

training department and the operation groups were considered strengths (Section 1.5).

- The remedial training program was adequate in addressing training weaknesses of the operators and planning re-evaluations (Section 1.4).
- With minor exception, the crew communications observed during the requalification examination and in the control room during walkthroughs was very good (Section 1.3).
- The program for maintaining active operator licenses and ensuring their medical fitness was adequate (Section 1.6).
- Process changes made by the training department staff to improve the management of the licensed operator requalification program such as: development of the requalification 2-year training plan data base, periodic reviews and assessments of the program, and installation of the new simulator were indicative of the importance placed on training by facility management (Section 1.5).
- Overall, the licensed operator requalification program was considered good (Section 1).

Plant Support

- Cleanliness and plant housekeeping observed during walkthroughs was excellent (Section 1.3).

Summary of Inspection Findings

- Inspection Followup Item 50-498/9513-01; 50-499/9513-01: "Simulator Problems," was closed (Section 2).

Attachments:

- Attachment 1 - Persons Contacted and Exit Meeting
- Attachment 2 - Simulation Facility Report

DETAILS

1 LICENSED OPERATOR REQUALIFICATION PROGRAM EVALUATION (IP 71001)

During the inspection, the licensee's requalification program was assessed to determine whether the program incorporated appropriate requirements for both evaluating operators' mastery of training objectives and revising the program in accordance with 10 CFR Part 55. The licensed operator requalification program assessment included a review of training material for the past year, evaluation of the program's controls to assure a systems approach to training, and evaluation of operating crew performance during annual requalification examinations. This included a review of training department documents and procedures and an assessment of the examination evaluators' effectiveness in conducting examinations.

1.1 Examination Preparation

This portion of the inspection was conducted to determine the effectiveness of the methodology used to develop and construct the requalification examinations and to assess the effectiveness of the examinations to identify retraining needs and measure the examinee's subject knowledge. The examination sampling plan was also reviewed, and training personnel interviewed to ascertain the methods used in developing the examination.

The written examination questions tested at the appropriate level of comprehension and were linked through task codes to important learning objectives. The written examinations were well structured and sampled appropriately from information trained on during the requalification period. The licensee used a computerized grading system which allowed them to analyze for generic weaknesses and verify the credibility of questions and distractors.

The inspectors reviewed the licensee's simulator scenarios and job performance measures (JPMs) used in the examination observed. The inspectors also reviewed the licensee's administrative procedures for developing, administering, grading, and evaluating the examinations, and conducted interviews with training department management, operators, instructors, and operations department management. The licensee used the guidelines of NUREG-1021, "Operator Licensing Examiner Standards," for the development and administration of the requalification examination.

The JPMs were developed in accordance with the guidance of NUREG-1021 and contained performance standards that were clear, objective, and relevant. However, it was observed that some JPM steps did not necessarily match the initiating cue. For example, the initiating cue for JPM005.02 directs the operator to perform Step 17 of ES02, however, the JPM steps stop before the procedure is complete. In other instances, JPM cues were inadequate. For example, JPM093.01 gives the operator the instrument reading that meets the specification listed in the data sheet he is filling out. As such, there is no challenge for the operator to read the meter. Additionally, the inspectors

noted that JPM 08.01 was of limited value in a licensed operator program examination because it required the reactor operator to perform the immediate actions of a reactor trip which were already accomplished in almost every scenario during their training. The inspectors considered the observations minor, and they did not adversely affect the examination.

Scenarios were also developed using the guidance of NUREG-1021 and contained clearly stated objectives. The initial conditions of the scenarios were realistic and consisted of related events. The inspectors further verified that the scenarios had not been used for training during the requalification cycle. The inspectors did note that there was a limited use of "RED/ORANGE" path functional response procedures. High Containment pressure was the only "ORANGE" path selected and it was included in a backup scenario.

Additionally, there appeared to be minimal instrument failure events, normal evolutions, and technical specification usage in the scenario sets used during the inspection period. Most scenarios had a minor malfunction that did not impact operation or require operator action to maintain power production. Most scenarios initiated the major transient early in the scenario time line. Further, major transients were straight forward events with normal transitions occurring in a linear fashion which did not challenge the crew's capability to prioritize concurrent events.

Overall, the breadth of some examination material was limited.

1.2 Dynamic Simulator Examinations

The inspectors observed two operating crews and one staff crew on the plant-specific simulation facility. The inspectors also observed the training department's evaluators in their function of assessing the crews' competencies.

The licensee evaluators rated each examinee's competency by comparing actual performance during the scenarios against expected performance in accordance with training department guidance in LOR-GL-0002. This guidance followed closely to that of NUREG-1021. The post-examination critiques by the evaluators were effective in identifying strengths and weaknesses of the individuals and provided in-depth insight into the crews' performance and provided meaningful input to the training process and remediation when required. The examinees were briefed and sequestered at times appropriate for examination security. The inspectors assessed the overall performance of the licensee's evaluators as a strength.

During the examination, the inspectors noted that one operating crew failed the dynamic simulator portion of the examination. While the crew did not fail to satisfy the listed critical tasks of the evaluation, the licensee's training and operations staff believed that the crew's exhibited weaknesses in the areas of procedural adherence and crew operations warranted an

unsatisfactory rating requiring further review. Additionally, the evaluators and the operations department management also considered individual performance of some of the operators to be marginal and warranting remediation.

The inspectors observed, with minor exception, good communications exhibited by the crews during the dynamic simulator portion of the examination. Two of three crews passed the dynamic simulator portion of the examination.

1.3 Walkthrough Examinations

The inspectors observed the licensee evaluators and the requalification examinees during the conduct of system-oriented JPMs. This included nonlicensed equipment operator tasks outside the control room and the performance of some tasks in the simulator in the dynamic mode.

Communications between the examinees and the evaluators were observed to be good, as were the communications practiced by the observed on-shift operating crew. The inspectors noted that the evaluators thoroughly reviewed the results of the individual walkthroughs and that none of the examinees failed the JPM portion of the examination.

During the walkthrough, the inspectors observed plant cleanliness and housekeeping to be excellent. The inspectors noted that the licensee has made continual improvement in this area.

All requalification examinees passed the JPM portion of the operating examination.

1.4 Remediation

The remedial training process was effective. Weaknesses identified during the requalification training cycle were reviewed with either the crew or individuals, as appropriate. Followup training included such activities as self-study in training weakness areas, focused simulator training in weakness areas, and other methods. Re-evaluations typically included retake of a similar written examination in the following training week or re-evaluation of the crew on the dynamic simulator using similar conditions initially resulting in remediation.

The inspectors noted that the remediation plans for the operating crew simulator failure during the inspection period and for a staff crew from the week prior to the inspection included review of the weakness areas with the crews, participation in two practice scenarios, and re-evaluation using a scenario similar to the one resulting in the unsatisfactory evaluation (e.g., one that exercised a similar situation such as procedural transitions). The inspectors observed that the evaluators, training department management, and operations management were involved in ascertaining whether or not a crew and its members required remediation. This activity also included involving the

applicable shift supervisor in discussions related to the performance of his crew and ascertaining the appropriate remedial training. As such, the shift supervisors were held more accountable for the training performance of their crews.

1.5 Feedback System

The inspectors reviewed the licensee's process for obtaining and incorporating employee feedback, site-specific and industry events, and training reviews into the requalification program. The inspectors determined that multiple feedback mechanisms to the training program existed. These systems were effective in adjusting the program to meet the needs of the licensed operators.

Additionally, the inspectors reviewed process changes to the licensed operator requalification program such as the computer based 2-year training plan data base, and periodic reviews accomplished by the curriculum review committee, the training review board, and the training advisory committee. Further, audits of the requalification training program were reviewed. The inspectors noted that corrective action items had been assigned for program improvement areas. The inspectors observed that process changes made by the training department staff to improve the requalification training program were indicative of the importance placed by facility management upon training. While not all of the planned changes had been fully implemented, improvements made since the last requalification inspection conducted in January 1993 were readily apparent.

The inspectors also noted through interviews with licensee staff members that there was a good working relationship between the training and operations departments. This relationship was due, in part, to rotating licensed operators between operations and training. An additional contribution to this good relationship was the recent assignment of an operations person to the operations training manager position.

1.6 Licensed Operator License Conformance

The inspectors reviewed the licensee's records for tracking licensed operator's qualifications and status. The inspectors verified that the records for two selected individuals supported the current active status of the operator license. The inspectors also verified that the licensee maintained an appropriate program for deactivating and reactivating operator license, as well as maintaining current their medical examinations. The inspectors concluded that the licensee's program met the requirements of 10 CFR 55.53 (e), (f), and (i).

1.7 Simulator Fidelity

The licensee had recently installed a new simulator that utilized state-of-the-art technology. While not all simulator problems were resolved at the time of the inspection, interviews with training staff members and some licensed operators indicated that the simulator was meeting the training needs. All individuals interviewed expressed positive encouragement as to the simulator's capabilities and the positive future impact it would have on training. The inspectors observed no simulator fidelity problems during the examination.

2 Followup to Previous Violations in the Operations Area (IP 92901)

(Closed) Inspection Followup Item 50-498/9513-01; 50-499/9513-01:
"Simulator Problems"

This item had been opened due to simulator performance and modeling anomalies exhibited during the initial licensed operator examination conducted during September 1995.

During this inspection, no simulator performance or modeling problems were exhibited. Further, the inspectors reviewed the backlog of significant simulator items. The inspectors verified that the number of items has been reduced by approximately 50 percent since September 1995. Because of the progress made in reducing the simulator problem backlog and because of the performance of the simulator during the observed dynamic simulator scenarios and dynamic simulator JPMs, the inspectors concluded closure of this item was warranted.

ATTACHMENT 1

PERSONS CONTACTED AND EXIT MEETING

1 PERSONS CONTACTED

LICENSEE

- *H. Butterworth, Operations Support Manager
- *J. Calvert, Licensed Operator Requalification Lead
- *J. Carlin, Nuclear Training Manager
- *B. Dowdy, Unit 2 Operations Manager
- *D. LeGrand, Operations Training Manager
- *J. Lovell, Unit 1 Operations Manager
- G. Weldon, Simulator Project Lead

NUCLEAR REGULATORY COMMISSION

- D. Loveless, Senior Resident Inspector
- *J. Tapia, Acting Chief, Operations Branch, Division of Reactor Safety

In addition to the personnel listed above, the inspectors contacted other personnel during this inspection period.

*Denotes personnel that attended the exit meeting

2 EXIT MEETING

An exit meeting was conducted on December 1, 1995. During this meeting, the inspectors reviewed the scope and findings of the inspection. The licensee acknowledged the inspection findings as they were presented. The licensee did not identify as proprietary any information provided to, or reviewed by, the inspectors.

ATTACHMENT 2

SIMULATOR FACILITY REPORT

Inspection Report: 50-498/95-28; 50-499/95-28

Facility Licensee: Houston Lighting & Power Company

Facility Name: South Texas Project

Facility Docket: 50-498/50-499

Requalification Operating Test Administered: November 27 through
December 1, 1995

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

RESULTS:

No simulator fidelity problems were observed during the examinations.