APPENDIX

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Operator Licensing Examination Report Nos. 50-498/OL 92-01; 50-499/OL 92-01

Operating Licenses: NPF-76; NPF-80

Dockets: 50-498; 50-499

Licensee: Houston Lighting and Power

Facility Name: South Texas Project (STP)

Examination at: South Texas Project

Examination Conducted: February 24 through March 5, 1992

Chief Examiner: S. L. McCrory, Examiner, Operator Licensing Section
Division of Reactor Safety

Approved: John Pellet 3/23/92
J. L. Pellet, Chief, Operator Licensing Section Date
Division of Reactor Safety

Summary

NRC Administered Requalification Examinations Conducted During the Weeks of February 24, and March 2, 1992 (Examination Report 50-498/OL 92-01; 50-499/OL 92-01)

NRC administered requalification examinations to 12 senior reactor operators (SRO) and 16 reactor operators (RO) licensed to operate the STP facility. One SRO and 1 RO had taken and passed a complete requalification examination previously and were examined only as a part of their respective shift crews. All licensed operators and crews passed all portions of the examination. The facility licensee's requalification program was evaluated as satisfactory.

NRC observed improvements in areas wherein weaknesses were previously reported. The only area of apparent decline was on the walkthrough examinations. This was previously reported as a strong point, but a number of scattered single job performance measure (JPM) failures occurred during these examinations. However, no generic weakness was evident. Notable improvement was observed in the areas of crew communication, emergency operating procedure (EOP) implementation, written examination material development, and correction of previously identified procedural weaknesses. Minor procedural discrepancies were found during the preparation and administration of the examinations and were promptly addressed by the facility staff.

The facility evaluators generally performed well. Early in the examination, the facility evaluators tended to credit operators for performance or responses outside those previously identified before a post-examination review concurred that the alternate performance/response was acceptable. When that was pointed out, there were no further occurrences of that nature.

NRC recognizes the significant resource expenditure that was necessary to achieve these successes and commends the facility licensee for its efforts.

DETAILS

1. PERSONS EXAMINED

		RO	SRO	Total
Licensee Examinations:	Pass -	16	12	28
	Fail -	0	0	0

2. EXAMINERS

S. L. McCrory, Chief Examiner
R. Lantz
W. Hemming
S. Johnson

3. EXAMINATION REPORT

Performance results for individual candidates are not included in this report because examination reports are placed in the NRC Public Document Room as a matter of course. Individual performance results are not subject to public disclosure.

3.1 Examination Review and Preparation

3.1.1 Written Examination

The facility licensee proposed written examinations for use during the requalification examinations which correlated well with the sample plan provided by the facility. The distribution of the questions in the examination sections was appropriately balanced with regard to the requirements of NUREG-1021, ES-602. A few questions did not discriminate properly and were replaced. Some of the remaining questions required minor changes to remove ambiguities or construction weaknesses. Overall, the question construction and focus was significantly improved from the last requalification examination.

3.1.2 Simulator Examination

The scenario bank submitted along with the proposed simulator examination was heavily weighted to loss of primary vs. secondary coolant events. There was only one significant degraded electrical event and several of the EOP contingency procedures were not exercised. During discussions, the facility training staff explained that simulator limitations prevented evaluation of some of the EOP contingency procedures and that development was ongoing to enlarge the bank to cover more of the remaining contingency procedures. They further explained that all parts of the EOPs, not covered in the scenario examination bank, were evaluated during the requalification training cycle by either written examination or narrowly focused scenarios.

The scenarios proposed for the examination required only minor changes to scope or events. However, substantial time was devoted to identifying objective performance standards by which to evaluate the Individual Simulator Critical Tasks (ISCTs).

3.1.3 Walkthrough Examination

The scope of the proposed walkthrough examination was satisfactory. Job Performance Measures (JPMs) required only minor changes to critical elements and evaluator cues following validation.

3.2 Examination Administration

Between the preparation week and the first week of examinations, the operations representative to the examination team was removed from the team and placed on shift. This was a result of a temporary shift manning shortage because of unexpected circumstances. The loss of the operations representative to the examination team was unfortunate. There were post-administration issues that could have been more quickly and easily resolved if operations participation on the examination team had been continuous over the administration of the examinations.

3.2.1 Written examination

The written examination was administered to 26 operators, all of whom passed. The average score on the written examination was 94.6 percent. This was a significant improvement from the last requalification examination wherein 4 operators failed the written examination. No changes were made to the written examination as a result of the post-examination review. The NRC grading agreed with that of the facility licensee.

3.2.2 Simulator Portion of the Operating Examination

The simulator examination was administered to 28 operators, 2 of whom had previously passed a complete NRC administered requalification examination and were only examined as a part of their respective shift crews. These operators comprised 6 crews, 4 on regular shift and 2 staff. All crews and operators passed this portion of the operating examination.

3.2.3 Walkthrough Portion of the Operating Examination

Walkthrough examinations were administered to 26 operators using option B as described in NUREG-1021, ES-603, Section D.1.b. All operators passed the NRC evaluation of this portion of the operating examination. The facility licensee failed one operator on the walkthrough as a result of a higher standard of performance required by the operations department.

General performance on JPMs was less impressive than that observed in the last requalification examination. There were a number of single JPM failures scattered throughout this portion of the examination.

Just prior to administration of this portion, it was noted by the facility training staff that certain previously selected JPMs administratively required two operators to perform the task. In all cases, the tasks involved manual starting of an emergency diesel generator. These were replaced with other JPMs focusing on electrical distribution or other diesel operations.

3.2.4 Observed Operator Performance

3.2.4.1 Performance Weaknesses

There were no specific generic weaknesses observed in operator performance. Operators had the most difficulty correctly performing JPMs which only required verification of plant conditions for specific events or situations. Additionally, the most often missed JPM followup questions focused on either electrical systems or Technical Specification interpretation. However, neither of these performance weaknesses were sufficiently extensive to be considered as generic weaknesses.

In the simulator, some operators were observed operating the "Acknowledge," "Silence," and "Reset" annunciator pushbuttons simultaneously before actually looking at the annunciator windows to determine new or cleared alarm conditions. However, all emergent conditions appeared to be identified in a timely manner.

3.2.4.2 Crew Communications

Crew communications during the simulator portion of the operating examination were notably improved over that observed in several past evaluations. In general, communications were clear, precise, and promptly acknowledged. However, it was noted that little information was passed over the plant announcement system even after signification events which could affect the safety of personnel in the plant.

3.2.4.3 Emergency Plan Implementation

The SROs made accurate and timely emergency action level (EAL) classifications. Emergency Plan implementation was only taken to the point of declaring the event classification. The scenarios covered a variety of conditions requiring EAL classification up to and including Site Area Emergency levels. The chief examiner noted to the facility training staff that a plant wide announcement of a Site Area Emergency should be accompanied immediately with instructions to personnel on site concerning sheltering or evacuation.

3.2.4.4 Procedures

Procedural weaknesses observed in the last requalification examination had been addressed and similar performance errors resulting therefrom did not recur. During this evaluation minor procedural weaknesses were noted in the following areas:

- Following a complete blowdown of a faulted steam generator, reactor coolant system temperature, and pressure recovered rapidly. The EOPs did not provide early guidance on pressure control for this situation. As a result crew responses varied considerably. In most cases, operators' skill of the craft was sufficient to prevent reliance on automatic pressure control via the pressurizer power operated relief valves.

- The EOP for reactor trip/safety injection did not specify the indicatinns to be evaluated when determining whether safety injection was required. This lack of specificity contributed to the failure of one operator by the facility evaluators on the walkthrough portion of the operating examination.

- During the preparation week, it was discovered that the alarm response procedure and abnormal operating procedure did not consistently address placing excess letdown in service following a pressurizer level control malfunction resulting in isolation of normal letdown.

The procedural weaknesses did not adversely affect the evaluations except as noted above. In all cases, the NRC concluded that operator performance was adequate even with the procedural weaknesses.

3.2.5 Observed Facility Evaluator Performance

During the first week of walkthrough examination, the facility evaluators exhibited a tendency to credit operators for task performance or question responses other than those previously identified. This was done prior to a post-examination review to determine the acceptability of the alternate performance or responses. This situation was quickly corrected when pointed out by the chief examiner. Otherwise, the facility licensee evaluators performed at the competent level of proficiency observed in the last requalification examination.

3.2.6 Examinee Stress

Prior to the administration of the examinations, the chief examiner met with the operators to review and explain the requalification examination process and grading criteria. This appeared to alleviate some stress in operators who were uncertain as to what to expect during the examination.

While there was no indication of excessive stress in the operators, it appeared that much of the scheduling considered ease of administration rather than operators' stress. There were several places in the schedule where operators were required to be sequestered for up to 2 1/2 hours. The facility training staff indicated that the operators were sufficiently accustomed to this type of scheduling that it was not a significant stress inducer. In all other aspects, the facility licensee evaluators appeared to be appropriately sensitive to operator stress.

3.3 Program Evaluation Criteria and Process

The evaluation of the facility licensee requalification program was made using the guidance and criteria of NUREG-1021, ES-601, Revision 6. The areas that were evaluated included examination materials development, a comparison of NRC and facility grading, facility evaluator performance, crew performance, and individual operator performance. All areas were judged to be satisfactory.

3.4 Site Visit Summary

An exit meeting was held with the following persons in attendance:

NRC	FACILITY
J. Pellet	D. Hall
S. McCrory	M. Wisenburg
R. Evans	G. Midkiff
	D. McCallum
	L. Weldon
	R. Graham
	C. Ayala
	R. Dally
	M. Chakravorty
	M. Covell

The chief examiner presented the preliminary program evaluation results and a summary of the evaluation of the various aspects of the examination development and administration. The preliminary evaluation of the facility licensee requalification program was satisfactory. Facility management was commended for the success achieved during this examination, but was cautioned not to relax the current level of attention since maintaining a high level of performance requires as much effort as that needed to attain the performance level.

3.5 Simulation Facility Report

Minor simulator malfunctions or fidelity problems were noted during the conduct of the examination. These were noted by the facility staff for future action and are reported in the attached fidelity report.

SIMULATION FACILITY REPORT

Facility Licensee: Houston Lighting and Power

Facility Licensee Docket Nos.: 50-498; 50-499

Operating Tests Administered at: South Texas Project

Operating Tests given on: February 25 and March 3, 1992

These observations do not constitute audit or inspection findings and are not, without further verification and review, indicative on 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 which may be used in future evaluations. No licensee action is required in response to these observations.

While using the simulator in a dynamic mode during the conduct of the operating tests identified above, the following apparent performance and/or human factors discrepancies were observed:

- Following a reactor trip resulting from a steam generator fault, the power-operated relief valve on one of the non-faulted steam generators failed to respond to manual or automatic control signals.

- The temperature and pressure recovery of the reactor coolant system following a complete blowdown of a steam generator occurred somewhat quickly and may not be properly modeled.

None of these simulator weaknesses adversely affected the requalification evaluations.