

ENCLOSURE 2

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket Nos.: 50-445, 50-445
License No.: NPF-86, NPF-87
Report No.: 50-445/97-06, 50-446/97-06
Licensee: TU Electric
Facility: Comanche Peak Steam Electric Station, Units 1 and 2
Location: FM-56
Glen Rose, Texas
Dates: April 28, 1997 through May 2, 1997
Inspectors: Thomas Meadows, Reactor Engineer, Operations Branch
Ryan Lantz, Reactor Engineer, Operations Branch
Vonna Ordaz, Resident Inspector, Operations Branch
Approved By: John L. Pellet, Chief, Operations Branch
Division of Reactor Safety

ATTACHMENTS:

Attachment 1: Supplemental Information
Attachment 2: Simulation Facility Report

EXECUTIVE SUMMARY

Comanche Peak Steam Electric Station, Units 1 and 2
NRC Inspection Report 50-445/97-06, 50-446/97-06

This inspection assessed the licensed operator requalification program to determine whether the program incorporated appropriate requirements for evaluating operators' mastery of training objectives in accordance with 10 CFR 55.59(c). The assessment included an 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 review of the facility documents, observation of operating and staff crews during dynamic simulator scenarios and plant walkthroughs, and an assessment of the examination evaluators' effectiveness in conducting and evaluating examinations. The inspection also included an evaluation of the plant referenced dynamic simulator used to conduct the examinations and the reference documentation used to produce the examinations and some control room observations.

Operations

- The control room operators exhibited professional demeanor and the shift turnover briefings observed were effective and comprehensive (Section O1).
- Overall, the licensed operator requalification training program effectively implemented a systems approach to training and maintained the condition of licenses. However, the inspectors identified one procedural violation for a failure to ensure that appropriate glasses for use with self-contained breathing apparatus were available for licensed operators (Sections O4.1, O5.1, O5.2, O5.3, O5.4, O5.5).
- Licensed operators displayed good communication skills, teamwork, plant system knowledge, and ownership of plant equipment (Sections O1.1, O4.1, F8.1).
- Annual requalification examinations were comprehensive and discriminated at the appropriate level (Section O5.1).
- The licensed operator requalification facility evaluators administered the examinations professionally and in accordance with accepted industry practices (Section O5.2).
- The licensee's training department was responsive to feedback and revised the training program as appropriate (Section O5.3).
- The licensee's process for operator remedial training was comprehensive in practice, but did not provide specific, quantitative guidance for retest requirements (Section O5.4).

Plant Support

- Plant housekeeping was good (Section F8.1).

Report Details

I. Operations

O1 Conduct of Operations

O1.1 Observations of Operator Performance

a. Inspection Scope (71715)

Using the guidance of Inspection Procedure 71715, "Sustained Control Room and Plant Observation," the inspectors observed activities in the control room during normal plant operations. The inspectors compared the observed performance with expected performance as described in facility policies and procedures. The inspector observed two crew turnovers at power operations.

b. Observations and Findings

The inspector noted that the individual operator turnover briefings were thorough and detailed, and that both the oncoming and offgoing operators were alert and diligent in providing a professional turnover. Post-relief crew briefs were thorough and comprehensive with each member of the crew providing a status of activities and equipment for their areas.

The inspector observed consistently good and effective communications in accordance with management expectations. Operator communications were clear and unambiguous, and communication support equipment appeared reliable and adequate. Communications outside the control room were generally formal and consistently effective.

Control room conduct was formal. The shift manager was closely involved in shift operations. Access to the control room was formally controlled and noise levels were maintained low and non-distracting to the control board operators. The licensed unit shift supervisors maintained a professional environment in the control room.

Operators routinely exhibited good self and peer checking when manipulating controls. The inspector observed that the operators performed peer checks on the designated components.

c. Conclusions

Operators exhibited good communication, annunciator response, procedure usage, self checking, and peer checking. Unit supervisors demonstrated effective oversight of shift priorities.

O4 Operator Knowledge and Performance

O4.1 Operator Performance on Annual Requalification Examinations

a. Inspection Scope (71001)

The inspectors observed the performance of two shift crews and one staff crew, during their annual requalification evaluations. Each crew was composed of five active licensed operators and one shift technical engineer. This Licensed Operator Biennial 1995-1997 Requalification Cycle number 96-1 began on May 15, 1995, and ended on May 2, 1997. The cycle consisted of an annual operating examination, that included simulator dynamic performance evaluations and five job performance measures for each licensed operator. Also included was a written examination for each operator, consisting of a simulator static examination and an additional classroom examination.

b. Observations and Findings

With the exception of four licensed operator individual written examination failures, during the 2-year cycle, all crews passed all portions of their biennial evaluations. In the 1995 biennial evaluation one senior reactor operator and one reactor operator failed their written exams. The licensee management reviewed these failures and previous performance and terminated both licenses. During the 1997 biennial evaluations, one senior reactor operator and one reactor operator again failed their written exams. After licensee management review, these operators were successfully remediated and returned to shift duties. The causes for the written evaluation failures were primarily system knowledge deficiencies.

On April 29 through May 2, 1997, the inspectors observed the dynamic simulator, job performance measures, and written evaluations for the three crews. All crews and individuals passed their evaluations with the exception of the two written examination failures.

Operator performance in the simulator was consistent with that observed in the control room. The inspectors observed that formal communication practices were maintained even during stressful simulator scenario conditions.

c. Conclusions

The inspectors concluded that the licensed operators exhibited good knowledge and ability during the requalification examinations and that they maintained formal communication practices even during stressful simulator scenario conditions.

O5 Operator Training and Qualification

O5.1 Review of Requalification Examinations

a. Inspection Scope (71001)

The inspectors reviewed the annual requalification operating tests and biennial written examinations, to evaluate general quality, construction, and difficulty level. The inspectors also reviewed the methodology for developing the requalification examinations.

b. Observations and Findings

The operating examinations consisted of job performance measures and dynamic simulator scenarios.

The facility utilized the Westinghouse Owner's Group template evaluation scenarios as guidance in the development of the scenarios used for the requalification examinations. The scenarios followed the guidelines of NUREG-1021, "Operator Licensing Examiner Standards," Revision 7, Supplement 1, in complexity and quantitative event requirements. The scenarios were written with clear objectives, expected operator actions, and critical task identification and evaluation criteria.

The job performance measures were adequate in scope and depth, and covered a broad range of topics as required by the training program and the regulations. Generally, critical steps were appropriately identified.

The inspectors determined that the written examinations were of the appropriate breadth of coverage and depth of knowledge, and effective discriminating value. Repetition between consecutive examinations and quizzes was carefully limited to no more than 25 percent and each question's history was carefully tracked. The inspectors found that the licensee's implementing training procedures adequately provided guidance to assure that the 25 percent criteria was maintained for routine examinations.

c. Conclusions

The examinations were well constructed, challenging, and discriminated at the appropriate level.

O5.2 Examination Administration

a. Inspection Scope (71001)

The inspectors observed the administration of all aspects of the requalification examinations to determine the evaluators' abilities to administer an examination and assess adequate performance through measurable criteria. The inspectors also noted the fidelity of the plant simulator to support training and examination administration. The inspectors observed two operations shift crews and one staff crew of five licensed operators each, during conduct of the dynamic simulator scenarios and job performance measure evaluations. Four licensed operator requalification training evaluators and one operations management evaluator were observed participating in one or more aspects of administering the examinations, including pre-examination briefings, observations of operator performance, individual and group evaluations of observations, techniques for job performance measure cuing, and final evaluation documentation.

b. Observations and Findings

The evaluators conducted the examinations professionally, and thoroughly documented observations for later evaluation. Job performance measure cues were provided appropriately as needed, with no inadvertent cuing observed.

A formal method of evaluation was used that reviewed crew and individual critical tasks following the scenario observations, and then competencies for the crew and for individuals when appropriate. During the simulator evaluations, the inspectors noted that the evaluator staff was particularly effective in identifying and properly categorizing operator performance deficiencies and weaknesses. The inspectors also observed strong operations staff participation. The post-scenario examination evaluation caucuses were well organized and efficient, with the evaluation team reaching a crisp, accurate consensus on performance results in a timely manner. This minimized overall crew stress. The inspectors observed that the crews held independent self-critical caucuses, led by their shift supervisors, who were also involved with developing remediation plans, when necessary. The inspectors also observed that shift supervisor ownership for crew and individual performance was a management expectation and was apparent in most cases.

The inspectors noted that the performance of the simulator in supporting the examination process was good. The inspectors did not identify any simulator fidelity performance problems that affected observed activities (see Attachment 2).

The inspectors reviewed the adequacy of the licensee's requalification program implementing procedures and instructions. The inspectors determined that the implementing procedures and instructions provided adequate guidance. However, the inspectors discussed some observations with the licensee's staff that may improve the procedures. as follows:

- The implementing procedure lacked specific guidance to preclude excessive written examination question reuse for all possible situations, such as nonconsecutive week and remedial examinations.
- Although the shift manager was responsible for the overall shift supervision, procedures or instructions did not provide guidance to ensure that the shift manager received a comprehensive examination on skills necessary to implement the emergency operating procedures.
- The inspectors observed the licensee staff implement a "performance enhancement" process for operators performing adequately, but with identified weaknesses. However, the inspectors found that this program enhancement was not formalized in the implementing procedures.
- There was no quantitative guidance given for the development of remedial examinations, repeatability of remediation written examination questions, or retest content.
- The inspectors noted that the 1997 biennial written examination had as little as 10 percent senior reactor operator only questions. While adequate in this case, inspectors noted that there was no procedure or instruction provided to ensure that the seven 10 CFR 55.43 senior reactor operator topics were covered during examination development.

The licensee's staff acknowledged these observations.

c. Conclusions

The facility evaluators administered the examinations professionally and in accordance with industry standards. The facility evaluators effectively identified deficiencies or weaknesses to feedback into the training program. There was strong operations management involvement in the simulator evaluations. The licensee's program implementing procedures were adequate.

05.3 Review of Training Feedback System

a. Inspection Scope (71001)

The inspectors reviewed the methods and effectiveness of the licensed operator requalification training program feedback system.

b. Observations and Findings

During interviews, licensed operators and staff trainers described several methods for providing feedback on the licensed operator requalification training program. Written requests could be made with either a training feedback form or request for training form. Also, the operator could make verbal training requests to the instructors or training department management. A management observation program also supported a periodic independent assessment of the training program effectiveness. Operators expressed overall satisfaction with the responses to their training requests.

The inspector reviewed numerous lesson plans and noted incorporation of recent industry events and lessons learned from plant events. Student feedback comments and management observations were positive and constructive, and each comment was classified and dispositioned in a formal program tracked by the training staff.

c. Conclusions

Operations personnel utilized several diverse methods for providing feedback to the licensed operator requalification training program. The training department responded appropriately to the training feedback provided.

05.4 Review of Remedial Training Program

a. Inspection Scope (71001)

The inspectors reviewed the remedial training program to evaluate compliance with licensee program guidance contained in Procedure TRA-204, "Licensed Operator Requalification Training," and to determine the effectiveness of the program to identify completed corrective actions. The inspectors reviewed five operator remedial training packages to determine whether adequate retraining and evaluation was performed based on the deficiencies identified.

b. Observations and Findings

The inspectors noted that remediation was required when specific criteria in Procedure TRA-204 were not met. In all cases reviewed, inspectors found remedial training was conducted when appropriate to the displayed weakness or deficiency and as required by the procedure. When an operator was remediated for a written examination failure, he was required to review applicable lesson plans, discuss the system or operation with an instructor or other system expert, and finally be retested. Similar activities were required for walkthrough or dynamic scenario failures.

The inspectors reviewed the content of the one remedial written retest available from the 1995 and 1997 training cycles. Two retests planned were not available for review during the inspection since the failures occurred during the week of inspection.

c. Conclusions

The licensee's process for operator remedial training and retesting was comprehensive in practice.

05.5 Review of Conformance with Operator License Conditions:

a. Inspection Scope (71001)

The inspectors evaluated the adequacy of the requalification program's compliance with Subpart C, "Medical Requirements," and 10 CFR 55.53, "License conditions." The inspectors interviewed operators and training management, and examined the licensee's records to determine compliance for conditions to maintain an active operator license, reactivation of licenses, and medical fitness.

b. Observations and Findings

Operator license conditions were being accurately identified and tracked. License conditions were complied within the sample selected. The inspectors found that the licensee efficiently tracked operator licensed conditions and medical requirements with its computer based, "Operator Qualifications Program."

However, on April 28, 1997, the inspectors found that no instructions or procedures existed at the Comanche Peak Steam Electric Station to ensure that all licensed operators that had their licenses conditioned to wear corrective lenses for the eye, had available appropriate lenses qualified for a self-contained breathing apparatus. The inspectors confirmed that the licensee had Final Safety Analysis Report, training, and administrative procedures that required all of their operators to be qualified in the use of self-contained breathing apparatus, and that self-contained breathing apparatus was staged as required in the control room. However, the inspectors found that the licensee had not recognized the interaction of these requirements and, as a result, did not have procedures or instructions in place to ensure that special lenses, qualified for self-contained breathing apparatus use, were available for operators in the control room. The inspectors found that out of the 82 operators at the facility, 50 were required to wear corrective lenses. Failure to establish such procedures or instructions was a violation of 10 CFR Part 50, Appendix B, Criterion V (50-445;-446/9706-01).

Licensee management acknowledged the violation and took immediate actions to correct the situation and preclude recurrence. Until necessary corrective lenses could be obtained and properly staged, the licensee developed a corrective action, "ONE" form to identify which operators had the appropriate lenses or no license condition and would stay in the control room, in self-contained breathing apparatus, and which operators, with the license condition but no special lenses, would evacuate the control room to perform duties that did not require self-contained breathing apparatus. The inspectors observed that, in addition to these contingency actions, the licensee developed instructions to track adequate self-contained breathing apparatus qualified lenses for all operators that needed them to preclude a similar recurrence. The inspectors determined that these contingency actions and corrective measures were adequate.

c. Conclusions

The inspectors concluded that with the exception of providing corrective lenses for all conditions, the licensee accurately tracked, maintained, and controlled the conditions of operator licenses and reactivation of inactive licenses in accordance with Subpart C, "Medical Requirements," and 10 CFR 55.53, "License Conditions."

IV. Plant Support

F8 Miscellaneous Fire Protection Issues

F8.1 General Comments

The inspectors observed general plant housekeeping incident to administration of the in-plant job performance section of the operating test. The facility was reasonably clean, well lighted, and the floors were clear and free from debris. The operators were conscientious to note discrepancies and inform the main control room.

V. Management Meetings

X1 Exit Meeting Summary

The examiners presented the inspection results to members of the licensee management at the conclusion of the inspection on May 2, 1997. The licensee acknowledged the findings presented.

The inspectors expressed appreciation for the licensee's support and hospitality given to the visiting inspector from the Canadian Atomic Energy Control Board.

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

M. Blevins, Plant Manager
S. Falley, Supervisor, Nuclear Training
D. Goslwin, Operations Support Manager
B. Guldemund, Shift Operations Manager
J. Jank, Supervisor, Nuclear Training
M. Sunseri, Manager, Nuclear Training
L. Terry, Vice President, Nuclear Production

Other

Ted Windle, Canadian Atomic Energy Control Board

DOCUMENTS REVIEWED

NRC PROCEDURES USED

Inspection Procedure 71001, Licensed Operator Requalification Program Evaluation
Inspection Procedure 71715, Sustained Control Room and Plant Observations

Licensee Procedures Reviewed

Final Safety Analysis Report, Comanche Peak Steam Electric Station
TRA-204, Licensed Operator Requalification Training Procedure, Revision 9
NTP-210, Nuclear Training Procedures Manual
NTP-102, Analysis
NTP-103, Design
NTP-104, Development
NTP-402, Training Requests
NTP-603, Simulator Certification Management
NTP-601, Senior Reactor Operator Certification, Revision 6
NTP-201, Training Impact System, Revision 6
NTP-105, Implementation, Revision 9
NTP-106, Evaluation, Revision 5
LORT cycle 96-5 through 97-6 feedback comments and training response
TRA-600, Instructor Training, Revision 3

Corrective Action, ONE Form, W. G. Guldemund, dated May 1, 1997
Nuclear Overview Department Evaluation Report, NOE-EVAL-97-000054

ATTACHMENT 2

SIMULATION FACILITY REPORT

Facility Licensee: Comanche Peak Steam Electric Station, Units 1 and 2

Facility Docket: 50-445, 50-446

Operating Examinations Administered at: Comanche Peak Steam Electric Station,
Units 1 and 2, FM-56, Glen Rose, Tx.

Operating Examinations Administered on: Week of April 28, 1997

The inspectors did not identify any simulator fidelity performance problems that affected observed activities.