

ENCLOSURE

**U.S. NUCLEAR REGULATORY COMMISSION
REGION IV**

Docket Nos.: 50-275; 50-323
License Nos.: DPR-80; DPR-82
Report No.: 50-275/99-02; 50-323/99-02
Licensee: Pacific Gas and Electric Company
Facility: Diablo Canyon Nuclear Power Plant, Units 1 and 2
Location: 7 1/2 miles NW of Avila Beach
Avila Beach, California
Dates: April 5 to 9, 1999
Inspectors: T. O. McKernon, Senior Reactor Engineer, Operations Branch
G. W. Johnston, Senior Reactor Engineer, Operations Branch
Approved By: J. L. Pellet, Chief, Operations Branch
Division of Reactor Safety

ATTACHMENT: Supplemental Information

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EXECUTIVE SUMMARY

Diablo Canyon Nuclear Power Plant, Units 1 and 2
NRC Inspection Report No. 50-275/99-02; 50-323/99-02

This inspection evaluated 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 licensed operator requalification program assessment included an evaluation of the program's controls to assure a systems approach to training and evaluation of operating crews' performances during biennial requalification examinations. This included review of the facility documents, observation of operating crews during dynamic simulator scenarios and plant walkthroughs, and an assessment of the examination evaluators' effectiveness in conducting examinations. The inspection also evaluated the plant referenced dynamic simulator used to conduct the examinations.

Operations

- Operators practiced good three-legged communications, peer checking, and crew briefings during dynamic simulator scenarios. Facility evaluators administered the requalification examination professionally and provided well documented findings to support their evaluations. (Sections O4.1, O5.2)
- Operations management involvement in the licensed operator requalification training program, including the role of the operations liaison, was considered a strength (Sections O5.2, O5.3)
- Since the last licensed operator requalification inspection, the licensee changed operator usage, such that, the senior control operator was used as a third resource in lieu of an emergency operating procedure reader. The senior control operator helped the crew in peer checks, diagnostics, and procedure usage (Section O4.1).



Report Details

Summary of Plant Status

The facility operated both units at full power during the week of the inspection.

I. Operations

04 Operator Knowledge and Performance

04.1 Operator Performance on Annual Requalification Examinations

a. Inspection Scope (71001)

The inspectors observed the performance of two shift crews during the dynamic simulator and job performance measure portions of the annual requalification examination. The inspectors also reviewed the results of the written examination.

b. Observations and Findings

During the dynamic simulator and job performance measure portions of the examination, the inspectors observed the following generic behaviors among operators:

- Operators routinely exhibited three-legged communication with only a few lapses into two-legged communication.
- Operating crews performed good peer checks and crew briefings. In a number of instances, the senior control operator performed as a peer checker of control board manipulations by the reactor operator or balance-of-plant operator. The shift foreman routinely conducted crew briefings and information updates consistently. Crew briefings were quick, focused, and directed future actions.
- Use of the shift foreman as a procedure reader for emergency operating procedures and directing crew tasks, as well as, the senior control operator being used as a third operator helped the crew with peer checking, diagnostics, and procedure usage. In one instance, the senior control operator caught a missed emergency operating procedure step by the shift foreman.

The inspectors reviewed the operators' responses on the written examinations. All operators except one passed the written examinations. The single failure was remediated, retested, and passed. No generic knowledge weaknesses were identified.



c. Conclusions

The inspectors concluded the operators performed well during the examination. Good three-legged communications, peer checks, and crew briefings were practiced. Use of the senior control operator as a third resource in lieu of an emergency operating procedure reader helped the crew in peer checks, diagnostics, and procedure usage.

O5 Operator Training and Qualification

O5.1 Review of Requalification Examinations

a. Inspection Scope (71001)

The inspectors reviewed the annual requalification examinations, which consisted of the written and operating tests, to evaluate general quality, construction, and difficulty level. The inspectors also reviewed the methodology for developing the requalification examinations and discussed various aspects of examination development and security with members of the licensee's training staff.

b. Observations and Findings

The operating examinations consisted of job performance measures and dynamic simulator scenarios. The job performance measure tasks were operationally important and supported by the facility's job task analysis. Each job performance measure included initial conditions, initiating cues, references, performance standards, criteria for successful completion and identification of critical steps. The inspectors noted that the difficulty levels of the job performance measures for the week of April 5 to 9, 1999, were relatively lower than expected, however, importance of the task and frequency of performance was such that the test item was appropriate. For example, some of the job performance measures contained few performance steps and few critical steps. The dynamic simulator scenarios contained realistic initial conditions, clearly stated objectives, and related events. The scenarios had multiple instrument and component failures both preceding and following the major transient. The sequence and timing of the events were reasonable and allowed the evaluators to gather sufficient information on individual and crew actions to arrive at an informed performance rating.

The inspectors noted that the written examinations were appropriately balanced with respect to systems, procedures, and administrative areas. The questions were well written with easily understood stems and answers. Most questions tested at the application cognitive level. Training personnel conducted a test item analysis of the written examinations to identify potential generic knowledge weaknesses. No generic knowledge weaknesses were identified. Licensee process controls for the written examination development ensured 10 CFR 55.43 representative sampling for senior operator responsibility areas. Interviews with training personnel confirmed that the examination was developed by sampling from the requalification training plan. A review by the inspectors of the sampling plan determined that the sampling was objective and well documented. Each week of the requalification examinations was represented in the



sampling plan and overlap of the examination material from week to week was substantially minimized. The sampling plan also assured overall coordination between the written and operating portions of the examination by areas of emphasis.

Examination administration was well planned, efficient, and conducted in a manner designed to reduce stress on the examinees. Examination security was well maintained throughout the sessions observed by the inspectors.

c. Conclusions

The inspectors concluded that, overall, all portions of the examination were well constructed, properly focused, and appropriately challenging.

O5.2 Examination Administration

a. Inspection Scope (71001)

The inspectors observed the administration of all aspects of the requalification examination to determine the evaluators' ability to administer an examination and assess adequate performance through measurable criteria. The inspectors also observed the fidelity of the plant simulator in the support of training and examination administration. The inspectors observed two operations crews during conduct of the dynamic simulator scenarios and job performance measure evaluations. Eight licensed operator trainers and one operations department manager were observed 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 thoroughly and professionally and documented observed weaknesses and areas for improvement. For the job performance measures, the evaluators provided appropriate responses as necessary with no inadvertent cuing. The inspectors attended the post-simulator examination debriefings held by the licensee's evaluators for each of the scenario sets. The debriefings were comprehensive and candid with detailed discussions by each evaluator on relevant subjects. The debriefings were held the following day to allow development of comprehensive discussion points. A strength of the debriefing was noted. The lead debriefer was an operations management representative who participated as an evaluator. This accentuated the observations presented in the debrief. The evaluators documented their observations well to support their evaluation findings and aid in any required remediation. The inspectors observed that the performance of the simulator in supporting the examination process was excellent.

The inspectors also observed a number of operations managers involved in other evaluations and feedback processes to the licensed operator requalification program. The operations manager, director, and liaison were extensively involved in crew evaluations reviews of identified weaknesses.



c. Conclusions

The facility evaluators effectively examined operators to identify deficiencies or weaknesses in the trainees and the training program. The facility evaluators administered the examinations professionally and well documented their findings to support their evaluations. Operations management involvement in the licensed operator requalification program was considered a strength.

O5.3 Review of Requalification Feedback Process

a. Inspection Scope (71001)

The inspectors verified the methods and effectiveness of the licensed operator requalification training program to ascertain whether assessments of operator performance plant events, and industry events were effectively incorporated into the requalification training.

b. Observations and Findings

The inspectors reviewed performance records and documents to assess the nature and effectiveness of the feedback process as a means of revising the licensed operator requalification training program. These documents included training assessments/audits, plant events, industry events, and training cycle evaluations, and a review of nuclear quality services audits of operator training from April 1997 through November 1998. The findings of the audits did not disclose any significant issues, therefore, corrective actions were not identified. Interviews with licensed operators, instructors, and management personnel indicated that the feedback process was timely and effective in addressing questions or concerns raised by personnel. The inspectors also observed that the operations liaison performed a key role in providing feedback and input to the program content. For example, the operations liaison was key in ensuring that plant events and lessons learned from industry events were appropriately factored into the licensed operator requalification program.

c. Conclusions

The inspectors concluded that the operations training organization responded to the feedback in a timely manner and was incorporating plant events into training lesson plans and simulator training.

O5.4 Remedial Training

a. Inspection Scope (71001)

The inspectors reviewed records and documentation of remediation of identified licensed operator deficiencies. The review included recent license reactivations for conformance to regulatory requirements in accordance with 10 CFR 55.53.



b. Observations and Findings

The inspectors reviewed recent remediation for a written examination failure. The scope of the training was appropriate to the identified deficiency. The licensee's remediation program addressed the remediation needs of the operations staff with a thorough manner. The inspector noted, however, that the documentation of the identified remediation did not provide an analysis of the consequences of the identified deficiency, only the identified training lesson plan and method of remediation. This observation was provided as a comment to the training staff. The inspector reviewed records of license reactivation for five senior reactor operators. The individuals in all cases were current in requalification and had stood the required hours under instruction. A review of crew training, requalification, and watch standing records indicated that all crew members were maintained in an active status.

c. Conclusions

The inspectors concluded that the licensee is maintaining a viable remediation program and is ensuring that license holders are maintaining qualifications.

O5.5 Maintenance of Operators' Licenses

a. Inspection Scope (71001)

The inspectors reviewed licensee records and individual operator medical records for conformance to regulatory requirements of 10 CFR 55.53.

b. Observations and Findings

The inspectors reviewed a sample of licensed operator medical records, time onshift records, and continuing training records. The licensee accurately maintained the records and used data bases for scheduling training, shift manning, and periodic medical examinations.

c. Conclusions

The inspectors concluded that 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."



ATTACHMENT

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONNEL CONTACTED

Licensee

J. Haynes, Learning Services
C. Dressler, Learning Services
D. Oatley, Vice President and Plant Manager
D. Christensen, Nuclear Safety Assurance and Licensing
G. Goelzer, Operations, Shift Superintendent
J. Howard, Nuclear Safety Assurance and Licensing
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NRC

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INSPECTION PROCEDURES USED

71007 Licensed Operator Requalification Program Evaluation

