

U.S. NUCLEAR REGULATORY COMMISSION

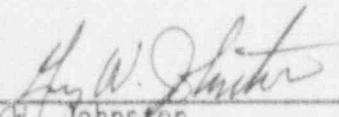
REGION V

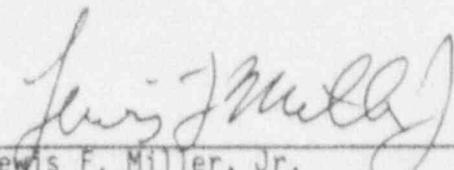
Examination Report No.: 50-361/362-OL-91-01

Facility: San Onofre Nuclear Generating Station  
Units 2 and 3

Docket Nos.: 50-361, 50-362

Examinations administered at San Onofre Nuclear Generating Station Units 2 and 3,  
San Clemente, California.

Chief Examiner:  3/8/91  
Gary W. Johnston, Date Signed  
Operator Licensing Examiner

Approved By:  3/11/91  
Lewis F. Miller, Jr. Date Signed  
Chief, Operations Section

Summary:

Examinations on January 22 - 31, 1991 (Report No. 50-361/362-OL-91-01):

Program Evaluation:

The facility requalification program was satisfactory per the requirements of ES-601, "Administration of NRC Requalification Program Evaluations." Nine Senior Reactor Operators and fourteen Reactor Operators passed all portions of the requalification examinations. One Senior Reactor Operator failed the simulator portion of the examinations, and one Reactor Operator failed the written examination portion of the examinations.

Significant Issues:

The licensee had not been evaluating the licensed operators during requalification on the use of all Emergency Operating Instructions. Specifically the licensee was not evaluating the operators on the use of SO23-12-9, "Functional Recovery." Further, the licensee was not fully complying with the intent of NUREG 1021 "Operator Licensing Examiner Standards," Revision 6 regarding maintenance of requalification examination material. The licensee had been adding the required material at the rate specified in the standard, but had not yet established a method to update existing material in conformance with the revised recommendations and requirements of the standard.

## REPORT DETAILS

### 1. Examiners

G. Johnston, RV (Chief Examiner)  
D. Pereira, RV  
R. Baldwin, RII  
C. Shiraki, NRR/OLB

### 2. Persons Attending the Exit Meeting

NRC:

G. Johnston, Chief Examiner  
W. Dean, NRR/OLB  
C. Shiraki, NRR/OLB  
D. Pereira, RV  
A. Hon, Resident Inspector  
J. Russell, RV

Southern California Edison:

J. Reeder, Nuclear Training Division Manager  
M. Cooper, Operations Training Supervisor  
P. Shaffer, Compliance Supervisor  
V. Fisher, Plant Superintendent, Units 2 and 3  
R. Seiler, Training Administrator  
R. Waldo, Operations Manager  
W. Morris, Nuclear Licensing Engineer  
C. Elliot, Operations Support Engineer  
T. James, Simulator Support Administrator  
K. Rauch, Nuclear Training Division Instructor  
R. Grabo, Nuclear Training Division Instructor  
W. Lyke, Nuclear Training Division Instructor  
R. Hall, Nuclear Training Division Instructor

### 3. Written Examination

The facility prepared written examinations reviewed by the examiners had the following weaknesses, which were corrected prior to administration:

- o Although the examinations in the aggregate exceeded the guidance in ES-602, "Requalification Written Examination" C.1.a(1) of 75 percent or greater multiple choice and matching format questions, the examinations submitted by the facility included one Part A examination that was predominantly essay answer format. This Part A examination was rewritten to include 60 percent multiple choice format questions such that when paired with a companion Part A and Part B the aggregate number of multiple choice questions exceeded 75 percent.

- o The facility also submitted one Part A examination that had eight of the thirteen questions focused on one subject area. This Part A examination was excluded from the Part A examinations administered.
- o ES-601 "Administration of NRC Requalification Program Evaluations," Attachment 1 Table 1 specifies that "Items that require only memorization or recall are not permitted on open reference examinations." Contrary to this guidance the facility submitted written examination material that included substantial numbers of questions that were principally recall of facts or memorization of detail level. This was particularly evident in the Part B examinations to the extent that a significant effort was expended to modify the examinations during the onsite preparation week. The problem was not as evident in the Part A examinations.

These concerns were conveyed to the facility training management by the Chief Examiner. The management representatives indicated that they recognized the concerns and would review the examination bank to identify other questions that did not conform to the current policy.

The results of the administered examinations were satisfactory, and in accordance with the examiner standards. From observation of the examinations while being administered it was apparent that the Part A (Static Simulator) portion should have had from 2 to 4 more questions per portion to meet the 45 minute guidance. On average it took 30 minutes to complete the Part A sections of the written examination rather than the expected 45 minutes. This observation was conveyed to the Management representatives at the exit meeting.

The facility grading appeared on the whole to be conservative and did not differ in overall results with the grading of the examiners. The facility submitted graded examinations had one arithmetical error. One Reactor Operator failed the written examination from the NRC results, which was concurred with by the facility graders.

#### 4. Job Performance Measures Examinations

The Job Performance Measures (JPMs) provided by the facility were reviewed and deemed to be adequate for administration. However, the facility has only been adding new JPMs to maintain the addition rate recommended in the Examiners Standards. The Chief Examiner informed the facility staff that ES-603 "Requalification Walk-Through Examination," C.1.a(4) recommends that "Old JPMs should be maintained or modified as appropriate." Further, ES-603 C.1.a(5) recommends that "Questions should continue to be developed to be in congruence with the number of knowledge items associated with the particular task, as stated in the JTA or NUREG 1122/1123." This infers that the questions associated with each task need to have all pertinent knowledge items covered. The facility's program did not fully address the intent of these recommendations.

Also, the question quality of the JPMs appeared to warrant attention by the facility training organization. Specifically, many questions did not identify clearly whether the subject was at the Senior Reactor Operator (SRO) or Reactor Operator (RO) level. Further, the questions did not always clearly elicit the answers that were provided, which resulted in the evaluator having to use follow-up questions to expand the response of the examinee to satisfy the answer supplied for the question. The questions also did not consistently require responses that meet ES-603 C.1.a(7), which recommends that questions that may take several sentences to answer are appropriate.

The results of the JPM portion of the examinations did not result in the failure of any of the operators. Three operators did fail to perform adequately at least one of the JPMs. Two operators failed to perform a JPM associated with placing a Control Element Drive Mechanism on its hold bus. Those two operators exhibited a lack of familiarity with the CEDMCS panels. Further, several operators exhibited a lack of knowledge of the location of the Turbine Driven Auxiliary Feedwater Pump discharge valve, requiring several minutes to identify the valve location.

#### 5. Simulator Examinations

The simulator scenarios submitted by the facility exhibited the following concerns:

- o The results of the simulator scenario reviews indicated that personnel had not previously been evaluated on all applicable procedures. This was of concern. ES-604, "Requalification Dynamic Simulator Examination" D.1.a.(5) specifies that each scenario shall exercise the crew's abilities in the use of Emergency Operating Instructions. ES-601 Attachment 1 Enclosure 1 "Reference Material Requirements," states "A bank of at least 30 simulator scenarios which reflect all plausible expected abnormal and emergency situations to which control room operators are expected to respond or control." The prepared simulator scenarios submitted by the facility did not have any required transitions to Emergency Operating Instruction (EOI) S023-12-9, "Functional Recovery." Prior to administering simulator examinations, the Chief Examiner requested that the facility participants on the examination team prepare two scenarios that included required transitions to EOI S023-12-9.
- o The scenarios also did not conform with the current guidance for Individual Simulator Critical Tasks (ISCTs). The facility members on the examination team were asked prior to the examination preparation week to review the ISCTs in each of the scenarios and ensure that they were in conformance with the current guidance provided by ES-604 Attachment 1, "Individual Simulator Critical Task Methodology." This review resulted in numerous changes to the scenarios by the facility members. During the preparation week the ISCTs were further reviewed by the NRC examiners, with the result that the numbers of ISCTs in the scenarios were further significantly reduced.

Recognizing these deficiencies, the original selection of fifteen scenarios were reduced to six that met the requirements of ES-604 for administration, by mutual agreement.

- o The facility program to update the scenario bank had focused only on ensuring that the bank grow to conform to the guidance in the Examiners Standards as to the number of scenarios. Apparently, little maintenance had been conducted on the existing scenarios.

During the first week of the evaluation, a scenario requiring the transition to EOI S023-12-9 for restoration of the Heat Removal safety function resulted in three crews encountering significant problems in implementing the procedure. One of the crews failed the examination, principally as a result of an apparent lack of familiarity with the use of EOI S023-12-9. The problems the crews had in using EOI S023-12-9 came as a result of the training and operations organizations' lack of evaluative information. The Training Administrator, Mr. Seiler, conceded that the operators had not been evaluated during simulator requalification examinations on the use of EOI S023-12-9. If the facility training staff had been evaluating the operators in the use of S023-12-9 during requalification, this apparent problem in procedure usage would have become evident.

The problem of procedure usage associated with EOI S023-12-9 was identified during an earlier initial licensing examination in June of 1990. Examination Report No. 50-361/OL-90-02 identified that operator candidates tried to avoid using EOI S023-12-9 because of complexity and restraints associated with the procedure. The Chief Examiner for that examination stated that the candidates at that time appeared to be unfamiliar with how to utilize the procedure and how to cope with multiple casualties. The concept of the EOI S023-12-9 is to provide multiple success paths for restoring safety functions. This is done through an expeditious method, using multiple attachments to the procedure, and discarding any optimal methods that event specific EOIs may employ. The operators must be familiar with the strategy of the procedure to be confident that it will cope with multiple casualties. The three crews evaluated the first week of these evaluations did not appear to be confident in the use of the procedure.

The Chief Examiner expressed a concern to the Operations Training Supervisor that it appeared that with the previous performance of the operator candidates in the June 1990 initial examinations, and the performance of currently licensed operators it was clear that the operator training both for license candidates and requalification of licensed operators had not been effective. The Chief Examiner requested that Mr. Cooper, the Operations Training Supervisor, address this concern in the exit meeting of February 1, 1991. (See Paragraph 7.)

The results of the simulator examinations were that one of the five crews evaluated being failed by the NRC examiners and one individual SRO on that crew was also failed. The facility evaluators concurred in the individual failure, but did not concur on the crew failure. This disagreement between the NRC and the facility with respect to the crew's failure was discussed extensively. The facility evaluators determined the individual

SRO who failed the simulator examination was solely responsible for the missed Individual Simulator Critical Task (ISCT). They held the view that the other crew members could not have succeeded in preventing or mitigating the consequences of the missed ISCT and, therefore, should not fail as a crew. The NRC examiners did not dispute the facility evaluators position on the ISCT. However, the NRC examiners determined from an evaluation of crew competencies that the crew failed on the competency of communications and crew interaction per Examiners Standard ES-604 "Requalification Dynamic Simulator Examination," form ES-604-2 "Simulator Crew Evaluation Form." The facility evaluators position was determined by the chief examiner to be unconservative, but was not sufficiently unconservative to affect the evaluation of the program.

The members of the crew that was failed by the NRC was remediated per the requirements of ES-604 "Requalification Dynamic Simulator Examination," D.2.e(1). Because the crew that failed was not going to be constituted as a crew in the normal rotation schedule, the Chief Examiner determined that the SRO who failed was the only crew member that required a re-examination by the facility. The other crew members were retrained by the facility in the use of EOI S023-12-9, and were allowed to return to normal duties without re-examination.

#### 6. Requalification Program Evaluation

The facility requalification program was reviewed, as follows, in accordance with ES-601, "Administration of NRC Requalification Program Evaluations" C.2.b(1):

- o The facility grading on all portions of the examinations was as conservative as the NRC examiners grading on more than 90 percent of the examinations.
- o There were two individual failures out of 25 examinees on the examinations.
- o One of the five crews failed the simulator portion of the examination.
- o One of the requirements of ES-601 C.2.b(2) was not satisfied. The facility did not concur with the NRC examiners evaluation of the failure of one of the five crews during the simulator examinations.

All of these deficiencies were within the acceptable limits for a satisfactory evaluation provided in ES-601. The requalification program for San Onofre Units 2 and 3 is satisfactory.

#### 7. Exit Meeting

The examiners met with the persons identified in Paragraph 2 on February 1, 1991. The Chief Examiner summarized the preliminary results of the examinations to date and indicated that the final results would await the final grading of the written examinations by the facility evaluators and the NRC examiners.

The Chief Examiner went over the findings identified to date in Paragraphs 4, 5 and 6. The significance of the simulator scenario development problems was reemphasized with the training management and supervision present at the meeting. Other areas stressed during the meeting included: maintenance of the examination bank material to keep up with changing requirements and establishing continuity within the requalification program such that the organizational experience is not diluted from year to year.

Mr. Cooper, the Operations Training Supervisor, presented the actions the licensee plans to take to address the training of the operators on Functional Recovery actions. He stated that it will involve immediately issuing a priority reading assignment for all licensed operators within the following week. A new lesson plan that includes specific training for the Senior Reactor Operators will be developed, and starting early in 1991, three days of training on the procedure will be scheduled. New scenarios, including all eight of the safety functions will be developed by December, 1991.

SIMULATION FACILITY REPORT

Facility Licensee: Southern California Edison

Facility Docket No.: 50-361, 50-362

Operating Test Administered on: January 22 and 29, 1991

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 non-compliance 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 licensee action is required in response to these observations.

During the conduct of the similar portion of the operating test, the following items were observed (if none, so state):

ITEM	DESCRIPTION
Reactor Coolant Pump Seal Instrumentation	Various indicators for RCP seal temperature and seal chamber pressures were out of service.