

Examination Report No.: 50-206/OL-90-01

Facility: San Onofre Nuclear Generating Station Unit 1

Facility Docket Nos: 50-206

Facility License Nos: DPR-13

Examinations administered at San Onofre Nuclear Generating Station Unit 1, San Clemente, California, and at Zion, Illinois.

Licensed Operator Requalification Program evaluation.

Chief Examiner: David B. Pereira 4-8-90
Date

Examiner: Thomas R. Meadows 11/13/90
Date

Other Accompanying Personnel:
Ray Pugh, Contract Examiner, PNL

Approved by: Thomas R. Meadows 11/13/90
Thomas R. Meadows, Acting Chief
Operations Section Date

Summary:

A NRC administered Requalification Program Evaluation was conducted at the San Onofre Nuclear Generating Station Unit 1 (SONGS 1) during the period of October 1 through 5, 1990, and at Zion, Illinois during the period of October 17 through November 2, 1990 (Report No. 50-206/OL-90-01).

Results:

The facility Licensed Operator Requalification Program was determined to be satisfactory. However, two findings of concern were identified. First, the simulator at Zion, Illinois is not an adequate representation of the SONGS 1 control room. Second, the SONGS 1 examination administrative process was late on developing the examination materials.

Operating and written examinations were administered to 15 licensed operators in accordance with the requirements and guidelines of NUREG-1021, ES-601, Revision 6.

All of the operators individual performances were judged satisfactory by the NRC and facility evaluation teams. All three operating crews were judged satisfactory by both the NRC and facility evaluation teams.

The final results are : six of the six Reactor Operators (100%) passed the examination, and nine of the nine Senior Reactor Operators (100%) passed the examination. All three operating crews were judged satisfactory by both the NRC and facility evaluation teams.

The SONGS 1 requalification program was evaluated as satisfactory.

REPORT DETAILS

1. Personnel

NRC Personnel:

- *D. Kirsch, Branch Chief, RV
- *D. Pereira, Chief Examiner, RV
- *T. Meadows, Examiner, RV
- R. Pugh, Examiner, PNL

Southern California Edison Personnel:

- *J. Reeder, Manager Nuclear Training
- *M. Cooper, Supervisor of Operator Training
- *R. Sandstrom, Unit 1 Training Administrator
- *T. Straw, Operations Training Instructor
- J. Wurtz, Operations Training Instructor
- *J. Kroeger, Operations Training Instructor
- H. Bentz, Operations Training Instructor
- *J. Schramm, Plant Superintendent, Unit 1
- *W. Morris, Onsite Nuclear Licensing (ONL) Engineer
- *J. Jamerson, ONL Lead Engineer

*Attended exit conference call on November 6, 1990.

2. Requalification Program Evaluation

The evaluation was conducted to determine the effectiveness of the San Onofre Unit 1 Operator Requalification Program and to evaluate operators for renewal of their six year term licenses.

This evaluation was administered in accordance with NUREG-1021, ES-601, Revision 6, "Administration of NRC Requalification Program Evaluations."

Prior to the evaluation the facility staff prepared a complete set of examination questions, simulator scenarios, and job performance measures as required. The Chief Examiner reviewed the current bank of questions and determined that the required minimum 350 questions per section were valid, that the required minimum 75 job performance measures were in use, and that the required 15 simulator scenarios were available.

3. Examination Development

The Chief Examiner conducted in-office reviews of the facility's proposed examinations in accordance with ES-601, "Administration of NRC Requalification Program Evaluations." During this review, the Chief Examiner validated the use of the facility sampling plan, and supplemented the draft examination's form and content to ensure validity.

Following the in-office reviews, an on-site review was conducted during the week of September 10, 1990. During this week, the written examinations and the job performance measures were finalized to ensure a valid and competent examination. Additional revision, and subsequent NRC review, was necessary for the simulator scenarios and static written examinations during the next two weeks.

The SONGS 1 Requalification Program administrative process was late in developing the examination testing products. The static written and simulator examinations were scheduled over a three week period, due to the administrative logistics of using the Zion simulator for these portions of the examination. This allowed the completion of adequate testing products, barely in time for the evaluation. A typical requalification examination is conducted over a one week period for the written, simulator and walk-thru examinations. The preparation for this effort would normally involve at least two, preferably three, facility support staff. However, for this effort, a single engineer was assigned the task of preparing the written, walk-thru, and simulator examinations for the SONGS 1 Requalification Program. This engineer was revising written examinations and simulator scenarios just prior to their being performed. Normally, one to two weeks prior to the requalification examinations, all examinations are finalized. This was not the case during SONGS 1 requalification examinations, either at SONGS 1 or at Zion, Illinois, due to extensive modifications of both written and simulator scenarios. Part of the reason for the extensive scenario modifications was due to a revised Individual Simulator Critical Tasks (ISCTs) definition and methodology, implemented in Revision 6 of the Examiner Standards. However, the large part of the revising and redevelopment was due to only one individual being assigned the task of revising and developing examinations, which makes a review possible only in series rather than in parallel. This complicated the NRC's role of review and comment of the examinations, which could have impacted upcoming examination schedules.

All requalification examination testing materials are normally approved at least two weeks prior to their being administered. In this instance, the examinations were conducted over an additional three weeks at Zion, Illinois after the written examination and the job performance measures were conducted at the SONGS 1 site. This provided the necessary time for additional examination preparation.

The NRC expects that adequate resources and experience will be provided in the next requalification administrative process at SONGS 1.

4. Operator Selection

The operating crews were selected by the facility as scheduled within their requalification evaluation cycle. This was validated and approved by the Chief Examiner in accordance with the Examiner Standards. Out of the operating crews examined during this requalification examination, four individuals would have had their licenses expire in 1993.

5. Examination Administration

During the weeks of October 1, 18, 25, and November 1, 1990, the NRC conducted an evaluation of the SONGS 1 Operator Requalification Program at SONGS 1 and at Zion, Illinois, the SONGS 1 simulator.

The simulator at Zion, Illinois is not an adequate representation of the SONGS 1 control room. Consequently, meaningful operative scenarios take extensive efforts to develop, and involve excessive cueing during implementation. In order to make the simulated Zion systems similar to SONGS 1 systems, the Zion simulator operators have to place covers over both portions of the vertical and apron sections of the control boards. In addition, name plates have to be inserted into the various control switches. These actions take approximately one hour of additional preparation. Further, in order for simulator scenarios to perform, simulator operators need to cue the reactor operators during the performance to ensure that the scenarios proceed as intended. In conclusion, the Zion simulator should not be used for future SONGS 1 requalification program evaluations. See Enclosure 4 (Simulation Facility Report) for more details on the Zion Simulation Facility.

After the May 26, 1991 deadline for a certified or approved simulation facility, the Zion simulator should not be used for evaluating the SONGS 1 requalification program or licensed operators.

6. Operator and Crew Performance

Fifteen of the fifteen operators individual performances were judged satisfactory by the NRC, and will be eligible for renewal of their six year term licenses.

All three of the operating crews performance were judged satisfactory by the NRC.

7. Evaluation of Facility Evaluators

The facility evaluators conducted the evaluations objectively and with apparent forethought. There were no instances where the facility guided the operator to a correct response during the Job Performance Measure (JPM) portion of the test. The facility evaluators were all extremely competent and objective.

8. Program Evaluation

Based on the NRC evaluation, conducted in accordance with ES-601, the SONGS 1 Operator Requalification Program is satisfactory.

9. Follow-up to EOP Team Inspection (Report No. 50-206/90-21)

The NRC examiner team observed the use of the facility EOI's by three operating crews utilizing the criteria in Task 4 of TI 2515/92 Emergency Operating Procedures Team Inspections. The team observed that the operators were provided with sufficient guidance regarding their responsibilities, and the required actions to mitigate the emergencies exercised during the scenarios. The team verified that the operators

transitioned to other procedures when required; took all precautions into account; and ensured all steps, prerequisites, and initial conditions were satisfied. The observations took place during the administration of the Requalification examinations administered October 18, October 25, and November 1, 1990. The Team concluded that the SONGS 1 EOI's could be used by a trained operating crew, to mitigate emergency events.

10. Exit Meeting

As indicated in paragraph 1, on November 6, 1990, the NRC staff examiners held a telephone conference call with the SONGS 1 representatives of the licensee's staff to discuss the evaluation, and findings.

SIMULATION FACILITY REPORT

Licensee: Southern California Edison Company
San Onofre Nuclear Generating Station Unit 1

Docket: 50-206

Operating Tests Administered on: October 17 through November 2, 1990 at
Zion, Illinois

This form is 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 50.45(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 license action is required in response to these observations.

During the conduct of the simulator portion of the operating tests, the following items were observed:

1. The simulator at Zion, Illinois is not an adequate representation of the SONGS 1 control room. At Zion, to help simulate SONGS 1 control boards, the board lineup includes putting up covers over unused instrumentation and over whole sections of the control boards.

Examples of this process are as follows:

Large styrofoam covers for:

- a. Containment ventilation vertical and apron panels
- b. Accumulator instrumentation vertical and apron panels
- c. Reactor coolant loop stop valves
- d. Reactor coolant fill stop valves
- e. 1C Heater Drain pump
- f. 1C Circulating Water pump

Small styrofoam covers for:

- a. 1HCV-182 and 1HCV-128
- b. Main feed pump turning gear controls (2)
- c. EHC digital displays when in load control

2. Several control switches for pumps are normally in pull-to-lock. The out-of-service alarms are defeated for the 1C auxiliary feed water pump, the 1C service water pump and the 1C containment spray pump.

3. Several SONGS 1 specific annunciator windows are hung as part of control board initial setups.

The net effect of all the above modifications is that the Zion simulator requires excessive cues be given to the operators during their operating examinations. During the scenario, the evaluator will cue an operator concerning the expected response on instrumentation or equipment that is not simulated, and the operator proceeds based upon that cue.

Based on these observations, the NRC license examiners judged that the Zion, Illinois simulator is not an adequate representation of the SONGS 1 control room. The examiners felt that it should not be used for the next NRC requalification examination. The licensee examiners and management staff acknowledged this fact, and stated that the next examination will be conducted on a new simulator based in Montreal, Canada, pending their exemption request for simulator certification and operator exam schedule approval by the NRC.