

U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report No. 50-361/82-27
50-362/82-19

Docket No. 50-361 and 50-362 License No. NPF-10 (Unit 2)
CPPR-98 (Unit 3) Safeguards Group _____

Licensee: Southern California Edison Company
P. O. Box 800
2244 Walnut Grove Avenue
Rosemead, California 91770

Facility Name: San Onofre Units 2 and 3

Inspection at: San Onofre Site, San Clemente, California

Inspection conducted: September 5-17, 1982

Inspectors: *D. F. Kirsch* 10/5/82
D. F. Kirsch, Chief, Reactor Projects Section No. 3 Date Signed

for *D. F. Kirsch* 10/5/82
M. Mendonca, Reactor Inspector Date Signed

Approved by: *D. F. Kirsch* 10/5/82
D. F. Kirsch, Chief, Reactor Projects Section 3 Date Signed
Reactor Projects Branch No. 2

Summary:

Inspection from September 5-17, 1982 (Report No. 50-361/82-27 and 50-362/82-19)

Areas Inspected: Routine announced inspection of the licensee's actions regarding TMI Action Plan requirements; Unit 2 low power level testing data review, Unit 2 precritical testing data review and examination of licensee actions taken to resolve welding related allegations.

This inspection involved 85 inspector-hours on site by two NRC inspectors.

Results: No items of noncompliance or deviations were identified.

DETAILS

1. Individuals Contacted

- *H. L. Richter, Project Engineer
- *J. R. Tate, Operations Supervisor
- *W. C. Moody, Deputy Station Manager
- *D. B. Schone, Project Quality Assurance Supervisor
- *B. Katz, Assistant Station Manager, Technical
- *H. E. Morgan, Assistant Station Manager, Operations
- *P. A. Croy, Manager, Configuration Control and Compliance
- *P. R. King, Unit 2/3 Operations Quality Assurance Supervisor
- *C. R. Horton, Unit 2/3 Startup Quality Assurance Supervisor
- *C. A. Kergis, Unit 2/3 Operations Quality Assurance Engineer
- *J. S. Iyer, Lead Compliance Engineer
- *S. K. Moy, Compliance Engineer
- G. Pattersen, Startup Quality Assurance Engineer

The inspectors also interviewed other licensee and Bechtel employees during the course of the inspection. These included Operations, Engineering, Quality Assurance (QA), and startup personnel.

*Denotes those individuals attending the exit interview on September 17, 1982.

Also present at the exit interview was A. E. Chaffee, Unit 2 Senior Resident Inspector.

2. TMI Action Plan Requirements - Unit 2

a. (Closed) Item I.D.1, Control Room Design Review (Low Power License Condition 2.C.(19))

The inspector verified that all requirements of the low power operating license and the Safety Evaluation Report (SER), Supplement No. 1, relative to this item, had been completed in the Unit 2 control room.

The red arrows, indicating a technical specification limit, and red bars, indicating alarm conditions, were installed correctly on the indicators for Refueling Water Storage Tank temperature and level.

No items of noncompliance or deviations were identified.

b. (Closed) Item I.G.1, Special Low-Power Testing and Training

The inspector examined procedure No. 2LP-333-02 (Natural Circulation Test Program) and observed that the procedure: (a) had been properly reviewed and approved; (b) contained the necessary instructions for the testing to initiate and verify natural circulation, maintain natural circulation with all pressurizer heaters secured, demonstrate natural circulation during decaying pressures, and demonstrate natural circulation with one steam generator isolated; and (c) included appropriate verifications to assure that operators experienced the initiation, maintenance and recovery from natural circulation.

The inspector observed the conduct of natural circulation testing and training during the performance of test procedure No. 2LP-333-02. The inspector independently verified the completion of all procedure specified test prerequisites, that installed test equipment was calibrated as required, compliance with procedure specified initial conditions prior to the conduct of testing, and compliance with procedure specified limits and precautions during the conduct of testing.

No items of noncompliance or deviations were identified.

The licensee reported that two operators, due to unavoidable circumstances, had not participated in the training provided by the conduct of procedure No. 2LP-333-02. SCE representatives stated that these two operators would be appropriately trained in the initiation, maintenance, and recovery from natural circulation during the natural circulation test to be performed during Unit 2 power escalation testing. Based upon this commitment, the inspector considers this item to be closed.

c. (Closed) Item II.E.1.1, AFW Pump 48 hour Endurance Test

The inspector examined the data obtained from the 48 hour endurance runs of AFW pumps P140 and P141 and verified compliance with procedure specified acceptance criteria. The inspector also verified acceptable performance of the feeding integrity test.

d. (Closed) Item III.D.1.1, Integrity of Systems Outside Containment Likely to Contain Radioactive Material

The inspector verified that the licensee has completed leak rate measurements and leak reduction work for the following systems:

- . Postaccident Sampling
- . Containment Spray
- . High Pressure Safety Injection, and
- . Low Pressure Safety Injection.

Further, the inspector verified that the licensee has planned a leak reduction program for primary coolant sources outside containment.

3. TMI Action Plan Requirements - Unit 3

The inspector has determined that the below listed TMI Action Plan requirements are closed for Unit 3 based on the following considerations: (a) each of these items is primarily administrative in nature; (b) the administrative aspects of each were previously closed for Unit 2 and documented in NRC Inspection Report Nos. 50-361/81-25, 81-26, 81-28, 82-04, 82-10 and 82-12; (c) procedures applicable to these items are common to both SONGS-2 and 3; and (d) the procedures have not undergone revisions which would negate the conclusions reached during the Unit 2 reviews of these items. Where inspections have verified certain aspects, the results are indicated in parenthesis.

- . Item I.A.1.1, Shift Technical Advisor
- . Item I.A.1.2, Shift Supervisor Responsibilities
- . Item I.A.1.3, Shift Manning
- . Item I.A.2.1, Immediate Upgrade of RO and SRO Training and Qualifications
- . Item I.A.2.3, Administration of Training Programs
- . Item I.B.1.2, Evaluation of Organization and Management
- . Item I.C.2, Shift and Relief Turnover Procedures
- . Item I.C.3, Shift Supervisor Responsibility

- . Item I.C.4, Control Room Access
- . Item I.C.5, Feedback of Operating Experience
- . Item I.C.7, NSSS Vendor Review of Low Power Test Procedures
- . Item I.C.8, Pilot Monitoring of Selected Emergency Procedures for Near-Term Operating License Applicants
- . Item II.B.4, Training for Mitigating Core Damage
(Training for next group of license candidates will be accomplished in early November, 1982)
- . Item II.G.1, Power Supplies from Emergency Buses (Units 2 and 3 do not have power operated pressurizer relief valves and safety-grade pressurizer level instrumentation is powered from safety-grade instrument power sources)
- . Item II.K.1, IE Bulletins on Measures to Mitigate SBLOCA's and Loss of Feedwater Accidents
- . Item II.K.2, Orders on B&W Plants (Not applicable to CE Plants)
- . Item II.K.3, Final Recommendations of B&W Task Force
- a. (Open) Item I.C.1, Guidance for Evaluation and Development of Procedures for Transients and Accidents

The licensee had submitted emergency procedure guidelines for NRR review and approval by letter dated April 30, 1982. Following NRR approval of emergency procedure guidelines, the inspector will verify incorporation of the approved guidelines by reviewing selected emergency procedures before the first refueling outage.

- b. (Open) Item I.C.6, Verify Correct Performance of Operating Activities

The inspector verified that the licensee has procedures and administrative controls in place to effect the correct performance of operating activities referenced by this action item.

The licensee had established a list of systems required to be operational prior to fuel load, however, control of only a small number of these had been accepted by the operations department. The licensee intends to utilize the same procedures that were

used on Unit 2 to effect systems turnover on Unit 3. The licensee stated that all systems required for fuel load would be turned over to the operations department and system operability established in accordance with Technical Specification requirements prior to loading fuel. This item is open pending verification of the above stated system turnovers.

c. (Open) Item I.D.1, Control Room Design Review

The inspector examined the licensee's actions to resolve the comments provided in Supplement 1 to the Safety Evaluation Report (SSER#1). All items referenced by SSER#1 had been satisfactorily resolved except for the following:

- . the primary makeup pump flow controller was still mislabeled as the refueling water flow controller (Reference: SSER#1, Item I.D.1, paragraph B.2.b, Fuel Load Item). This item will be examined further during a future inspection.
- . a temporary rack has been installed on the computer console for laying out drawings. A permanent rack is scheduled for installation, however, the inspector finds that the temporary rack does not impede air circulation and, therefore, satisfactorily resolves this item (Reference: SSER#1, Item I.D.1, paragraph B.1.c, Fuel Load Item).
- . An error was observed in the placement of the arrows indicating Technical Specification limits for Containment Pressure and Refueling Water Storage Tank level. A workman corrected the containment pressure arrow immediately, however, the inspector observed that the Design Change Package drawing had been incorrectly annotated to indicate this item had been satisfactorily completed. The licensee stated that when the Design Change Package requirements are completed an audit would be performed to verify that control room indicators are annotated properly to indicate alarm regions, control regions and Technical Specification limits. The results of this audit will be examined during a future inspection. (Reference: SSER#1, Item I.D.1, B.6.f, Five Percent Power Item).
- . SSER#1, Item I.D.1, paragraph B.3.a (Fuel Load Item) requires that pattern recognition information be incorporated into emergency operating procedures whenever Safety Injection (SI) has to be verified. The licensee was in the process of modifying the Low Pressure Safety Injection/

Shutdown Cooling system by adding/removing some valves, thus making the Unit 3 system configuration different from Unit 2 (DCP3-52N). Therefore, the SI pattern recognition information, emergency procedures and system operating procedures, applicable to Unit 3, will not necessarily be the same as those previously established as S023 procedures. The licensee stated that the pattern recognition information and emergency/operating procedures would be reviewed and appropriately revised to assure applicability to the Unit 3 configurations before fuel loading. These revisions will be examined during a future inspection.

- . Operator training in the use of the process computer has been scheduled for completion prior to the NRC administered operator examinations on the differences between Units 2 and 3. The licensee stated that process computer use training will also be provided to all of the present class of operator license candidates. This item will be examined during a future inspection. (Reference: SSER#1, Item I.D.1, paragraph B.1.b, Fuel Load Item).
- . SSER#1, Item I.D.1, paragraph B.2.d (Fuel Load Item) indicates that open/closed legends for hydrogen purge control on the HVAC panel are reversed. The inspector observed similar inconsistencies on HVAC panel 3LI155. The licensee stated that the legend/light marking system used on the hydrogen purge control panels would be reexamined to determine conformance with design conditions. This item will be examined during a future inspection.

d. (Open) Item I.G.1, Training During Low Power Testing

Discussions with the licensee and the NRR Licensing Project Manager indicate that the need for performing natural circulation demonstrations on Unit 3, during the low power physics test sequence, merely for the training of operators is being reevaluated by both parties. This item is open pending the results of those evaluations.

e. (Closed) Item II.B.1, Reactor Coolant System Vents

The inspector examined the licensee's actions resolving this item. Specifically, the following examinations were conducted.

- . Design Change Package DCP-4N was properly reviewed, approved and closed.

- . Procedure S023-3-2.33 (Reactor Coolant Gas Vent System) adequately specified system operating instructions and was properly approved for use.
- . System hydrostatic test data including boundaries, pressure gage calibration, test pressure and time at test pressure appeared to be in conformance with the ASME B&PV Code.
- . Review of remote operated valve electrical and operability tests per procedure S02-GT-400-14 established that the valves fail closed on loss of power.
- . Verification of design commitments such as
 - .. remote venting capability (from the pressurizer or reactor vessel head vent) in the control room
 - .. positive indication and control of power operated valves in the control room.
 - .. administrative requirements assuring that power is removed during normal operations.
 - .. all valves are powered from emergency power sources.
 - .. the system is capable of venting either to the quench tank or to the upper containment atmosphere.
- . Visual examination of selected portions of the installed system and valves, including welding quality, for conformance with design requirements, the ASME B&PV Code, and the FSAR system diagram.

No items of noncompliance or deviations were identified.

- f. (Closed) Item II.B.2, Design Review of Plant Shielding and Environmental Qualification of Equipment for Spaces/Systems which may be used in Post-Accident Conditions

The licensee's evaluation of this item was contained in FSAR Amendment 23 and indicated that the only modification of plant design was the addition of a steel shielding door to prevent radiation streaming toward the control room area. The inspector examined the installation of the required door and verified the installation.

No items of noncompliance or deviations were identified.

g. (Closed) Item II.D.3, Direct Indication of Relief and Safety Valve Position

The inspector verified selected details of the installation and calibration of the acoustic monitoring system for position indication of the pressurizer code safety valves. Units 2 and 3 do not have power operated pressurizer relief valves.

No items of noncompliance or deviations were identified.

h. (Closed) Item II.E.1.2, Auxiliary Feedwater Initiation and Indication

The licensee's response and commitments with regard to this item are contained in the FSAR, Amendment 23. The inspector performed the following verifications of licensee commitments with regard to this item:

- . Design Change Package - 28M was properly reviewed, approved and closed out.
- . The AFW system initiating circuitry incorporates both manual and automatic initiation capability.
- . The initiating signals and circuits are powered from IE emergency power supplies.
- . Manual initiation is from main control room panel CR52 and 53.
- . The AFW flow indications provide for one channel of safety grade flow indication for each steam generator.
- . The instrument channels are powered from safety grade instrument buses.
- . Preoperational Test Procedure No. 3PE-235-01, Revision 0, (Auxiliary Feedwater Pump Motor and Turbine Driven System) data review demonstrates compliance with specified acceptance criteria.

No items of noncompliance or deviations were identified.

i. (Open) Item II.E.3.1, Emergency Power Supply for Pressurizer Heaters

The licensee's response and commitments relative to this item are contained in the FSAR, Amendment 23. The inspector performed the following verifications:

- . The two banks are powered from emergency buses and are automatically isolated by safety injection or emergency feedwater actuation signals.
- . An override switch enables the operator to override the above automatic signals and reclose the breakers.
- . The use of the override capability is administratively controlled and is annunciated in the control room.

The licensee had submitted a Unit 2 Licensee Event Report (No. 82-036) describing a condition wherein under loss of offsite power these pressurizer heaters could not be reenergized from the emergency power source. In response to the inspector's concern for Unit 3 applicability, it was established that the identical conditions existed in Unit 3 and that a design change rectifying the situation had not yet been completed. This item will be examined further upon completion and testing of the changes identified by the licensee.

j. (Closed) II.E.4.1, Containment Dedicated Penetrations-Hydrogen Control

The licensee's primary means of containment hydrogen control is provided by electrical hydrogen recombiners installed inside containment. A backup method uses penetrations to containment. System operating procedures applicable to Units 2 and 3 are established.

The inspector examined the results of test procedure No. 3PE-504-03, Revision 0, (Hydrogen Recombiner System) which tested the operation of the internal hydrogen recombiners. The test was complete and the procedure obtained data was under review by the Test Working Group. It appeared that the data demonstrated operation of the hydrogen recombiner system and compliance with specified acceptance criteria.

No items of noncompliance or deviations were identified.

k. (Closed) Item II.E.4.2, Containment Isolation Dependability

The licensee's response and commitments relative to this item are contained in the FSAR Amendments 23 and 24. The list of valves providing containment isolation is contained in Table 3.6-1, Section A, of the Technical Specifications.

The inspector performed the following examinations relative to this item:

- . valve operator actuation logic diagrams for a sample of several containment isolation valves
- . preoperational test procedure No. 3PE-101-04, Revision 0 (Containment Isolation Valves) - data review
- . preoperational test procedure No. 3PE-455-01, Revision 0 (Verification of Load Group Assignments) - data review

Based upon the above reviews the inspector concluded that:

- . Containment isolation valve operator logic had been modified to provide containment isolation on receipt of the Containment Isolation Actuation Signal (CIAS) and Safety Injection Actuation Signal (SIAS), with the allowed exception of the Main Steam Isolation Valves and Main Feed Isolation Valves.
- . Override capability of a sample of five valves contained in FSAR Table II.E.4.2-1 was verified to be in compliance with commitments.
- . Resetting of the CIAS signal does not result in the automatic opening of containment isolation valves.
- . Preoperational test procedures verified the operation of all containment isolation valves in accordance with design requirements as regards actuation and override capability.

The licensee was currently in the process of verifying the proper operation of Train B actuation. Train A had been completed. By Technical Specifications, the operation of Train B must be completed prior to entry into Mode 4. The licensee's schedule would support this requirement.

Pursuant to the above examinations, the inspector identified an apparent oversight in the Technical Specification surveillance requirements relative to Containment Isolation Valves.

Technical Specification paragraph 4.6.3.2a requires that each containment isolation valve in Table 3.6-1 be demonstrated operable at least once per 18 months by "Verifying that on a containment isolation test signal, each isolation valve actuates to its isolation position." In response to this TMI Action item the licensee provided for diversity of isolation by requiring that each containment isolation valve actuate to its isolation position on receipt of the Safety Injection Actuation Signal in addition to the Containment Isolation Actuation Signal. The existing Technical Specification does not provide for testing the SIAS diversity modification. However, the licensee's procedure for accomplishing this surveillance (S023-3-3.12) correctly performs this surveillance by verifying isolation with both the CIAS and SIAS signals. This oversight has been brought to the attention of the licensee and NRR for resolution.

No items of noncompliance or deviations were identified.

l. (Open) Item II.F.1, Additional Accident Monitoring Instrumentation

The licensee's response and commitments relative to this item are contained in the FSAR and are detailed by Amendments 21 through 28.

The inspector verified selected details of licensee commitments related to the installation and calibration of the following additional instrumentation:

- . Containment wide-range water level monitor
- . Containment wide-range pressure monitor
- . Containment Hydrogen concentration monitor

No items of noncompliance or deviations were identified.

m. (Open) Item II.F.2, Identification of and Recovery from Conditions Leading to Inadequate Core Cooling

The licensee's response and commitments relative to this item are contained in the FSAR. Additional instrumentations required are:

- . A two channel sub-cooled margin monitor system

. Reactor vessel level indication using heated junction thermocouples

The inspector performed a preliminary evaluation of the licensee's actions and system calibration procedures relative to this topic. This item will be examined during a future inspection pending the completion of installation and testing of the above systems.

4. Low Power Level Data Review - Unit 2

The data obtained pursuant to the conduct of low power physics testing and initial criticality were examined. The inspector verified that these evolutions were conducted in accordance with approved procedures, the data conformed to specified acceptance criteria, and the data had been appropriately reviewed by the licensee.

No items of noncompliance or deviations were identified.

5. Precritical Data Review - Unit 2

The inspector reviewed the following licensee tests and data:

- . Incore Instrumentation Functionals
- . Reactor Coolant System Leakage Measurement
- . Pressurizer Performance and Spray Valve Adjustment
- . Reactor Coolant System Flow Measurement
- . Reactor Internals Vibration Monitoring
- . Control Element Drive Mechanism Test
- . Post Core Hot Functionals
- . Pre-critical Comparison of the Core Protection Calculator, Plant Protection System, and Computer, and
- . Precritical Check on Initial Criticality.

These tests had been conducted as specified by approved procedures, the data has been reviewed by appropriate licensee personnel and the data appears to conform to specified acceptance criteria.

No items of noncompliance or deviations were identified.

6. Licensee Actions to Resolve Allegation

During the course of the inspection the licensee notified the inspector that on September 7, 1982, certain allegations had been received by SCE regarding welding adequacy at SONGS 2 and 3. The alleged had been previously employed at SONGS by Bechtel Power Corporation. The alleged's concerns were:

- . Allegation 1: The welding requirements of AWS D1.1 regarding "end returns" were not being complied with on pipe hangers, electrical struts and structural steel. In addition, it was alleged that "end return" requirements were not shown on design/detail drawings.
- . Allegation 2: A spacer plate was believed, by the alleged, to be missing on the upper inside door hinge of the Unit 2 containment personnel hatch.
- . Allegation 3: The alleged believed that Bechtel had misinterpreted the ASME Section III welding standards regarding socket weld engagement length without initiating a code case and obtaining appropriate code relief.
- . Allegation 4: Based upon numerous spelling errors in nondestructive testing reports, the alleged believed that the quality of non-destructive examinations performed by Peabody Testing personnel may be questionable. (The concern here appears to center on the qualifications and capabilities of testing personnel if those personnel make frequent spelling errors.)

The inspector reviewed the licensee's actions to resolve these allegations by discussions with licensee personnel and examination of documentation.

The licensee appeared to have taken comprehensive investigative action and adequately addressed all issues. The licensee's investigation did not substantiate any allegation.

This item is considered closed.

7. Exit Interview

The inspectors met with licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on September 17, 1982 and discussed the inspection scope and findings.