U.S. NUCLEAR REGULATORY COMMISSION

REGION V

Report Nos. 50-206/86-26, 50-361/86-20, and 50-362/86-20

Docket Nos. 50-206, 50-361, and 50-362

License Nos. DPR-13, NPF-10, and NPF-15

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

Facility Name: San Onofre Nuclear Generating Station Units 1, 2, and 3

Inspection at: San Clemente, California

Inspection Conducted: June 2 - 6, 1986

Inspectors: Kenneth D. Ivey, Jr. — 06-09-86
K. Ivey, Jr., Reactor Inspector — Date Signed

Approved by: Joseph Young Jr. — 6-9-86
T. Young, Jr., Chief, Engineering Section — Date Signed

Summary:

Inspection during the period of June 2-6, 1986 (Report Nos. 50-206/85-26, 50-361/86-20, and 50-362/86-20)

Areas Inspected: A routine unannounced inspection of the implementation of Unit 1 TMI Action Items, follow-up of previously identified items, licensee actions on 10 CFR Part 21 Reports, and follow-up of IE Bulletins and Information Notices. The inspection involved 41 hours by one NRC inspector on Module Nos. 30703, 92701, 92702, 92703, 36100, and 25565.

Results: No violations or deviations were identified.

DETAILS

1. Persons Contacted:

H. E. Morgan, Station Manager
J. Reeder, Unit 1 Plant Superintendent
M. P. Short, Unit 1 Project Manager
W. K. Barney, Independent Safety Engineering Group (ISEG) Engineer
M. Barr, Compliance Engineer
N. B. Bloom, Maintenance Engineer
C. A. Couser, Compliance Engineer
G. T. Gibson, Supervisor, Compliance
V. A. Gow, Quality Assurance (QA) Engineer
J. F. Grosshart, QA Engineer
D. A. Herbst, ISEG Supervisor
M. J. Kirby, Nuclear Training Administrator
W. M. Lazear, QA Supervisor
T. A. Mackey, Jr., Compliance Supervisor
S. W. McMahan, Maintenance Engineering Manager
D. H. Peacor, Station Emergency Preparedness Manager
D. E. Shull, Jr., Manager, Maintenance
M. A. Wharton, Deputy Site Manager
W. G. Zintl, Manager, Compliance
Various other personnel

All personnel listed were in attendance at the exit meeting on June 6, 1986.

2. TMI Action Plan Requirements (Unit 1)

This section includes the status of TMI Action Items as determined by the inspector through review of documentation and discussion with responsible licensee personnel.

a. I.C.1 (OPEN) "Short-Term Accident and Procedures Review - ICC/Transients and Accidents".

NUREG-0737 requires licensees to perform analyses of transients and accidents, prepare emergency procedure guidelines, upgrade emergency procedures, including procedures for operating with natural circulation conditions, and to conduct operator retraining. Supplement 1 to NUREG-0737 (Generic Letter No. 82-33), dated December 17, 1982, requires that each applicant submit a Procedure Generation Package (PGP) at least three months before the date of formal operator training on the upgraded procedures. Additional clarification was provided in NUREG-0578 and NUREG-0694.

Findings:

The licensee's Emergency Operating Instructions (EOIs) have been revised based on the Westinghouse Owner's Group (WOG) Emergency Response Guidelines (ERGs). The ERGs were found acceptable for implementation as stated in an NRC letter, Eisenhut to Sheppard, dated June 1, 1983. The overall upgrades of the EOIs were completed in November, 1984, as stated in a letter to NRC dated April 12, 1985.

The inspector reviewed a sample of the EOIs in comparison with the WOG emergency reponse guidelines and concluded that they appear to be consistent in content with one another. The inspector also reviewed training records from two different courses given on the EOIs since the revisions. The inspector concluded that the licensee had met the requirements of NUREG-0737. This item will remain open pending the results of the formal NRR review of the licensee's April 12, 1985 submittal.

No violations or deviations were identified.

b. I.D.2 (OPEN) "Safety Parameter Display System".

NUREG-0737 Position: Each licensee shall install a safety parameter display system (SPDS) that will display to operating personnel a minimum set of parameters which define the safety status of the plant. This display system augments the safety related instrumentation already in place. Detailed requirements are provided in NUREG-0737, Supplement 1.

By letter dated April 23, 1985 (Medford, SCE to Thompson, NRR), the licensee committed to the following actions:

(1) Development of SPDS design criteria by October 10, 1986.
(2) Submittal of finalized SPDS design criteria to NRR by January 9, 1987.
(3) Submittal of SPDS upgrade plans to NRC by May 1, 1987.

The licensee is continuing their work on the SPDS and expect to meet these commitments.

No violations or deviations were identified.

c. II.E.1.1.2 (OPEN) Long-Term Auxiliary Feedwater (AFW) System Modifications

The remaining NUREG-0737 requirements to be completed for SONGS 1 are: (1) the upgrade of the two trains of control grade auxiliary feedwater to safety grade by the end of the cycle 9 outage and; (2) the installation and upgrade (to safety grade) of a third train of auxiliary feedwater by the end of the cycle 10 outage.

Findings:

The licensee is presently working to upgrade the two trains for cycle 9 and expects to complete the actions prior to startup from the outage. The changes are being worked in Design Change Package (DCPs) 3006, 3066, and 3174. DCP 3006 replaces the AFW flow control valve positioners, transducers, and airsets and will be completed following testing of the system. DCP 3174 replaces the relief valve for the turbine driven train and will be complete following testing.

The licensee has installed the third train of AFW and expects to upgrade it in accordance with the Cycle 10 committment date.

No violations or deviations were identified.

d. II.F.2.3.B (OPEN) Level Instrumentation for Detection of inadequate Core Cooling.

NUREG-0737 Position: Licensees shall provide a description of any addtional instrumentation or controls (primary or backup) proposed for the plant to supplement existing instrumentation (including primary coolant saturation monitors) in order to provide an unambiguous, easy-to-interpret indication of inadequate core cooling (ICC).

In association with this item, GL 82-28 requested that licensees submit a reactor coolant inventory design and evaluate the current ICC instrumentation at their plants.

Findings:

The licensee plans to submit a letter to the NRC by the end of June, 1986, which will provide: (1) an assessment of the current ICC instrumentation capability; (2) plans for any required upgrades to the existing instrumentation; and (3) a justification for relief from the requirement to install a reactor vessel level measurement system.

The inspectors discussion with responsible licensee personnel indicated that the licensee considered the installed subcooling monitor and improvements made to the core exit thermocouple system provide an adequate system for ICC considerations.

No violations or deviations were identified.

e. II.K.3.5 (OPEN) Automatic Trip of Reactor Coolant Pumps During Loss-of-Coolant Accident

NUREG-0737 Position: Tripping of the reactor coolant pumps (RCPs) in case of a loss-of-coolant accident (LOCA) is not an ideal solution. Licensees should consider other solutions to the small-break LOCA problem (for example, an increase in safety injection flow rate).

On February 8, 1983, Generic Letter (GL) 83-10d was issued to provide criteria for resolution of this TMI Action Item, and subsequently on June 28, 1985, GL 85-12 was issued to provide guidance concerning implementation of the RCP trip criteria.

The GL 85-12 Position: We have determined that the information provided by the Westinghouse Owner's Group (WOG) in support of the alternative RCP trip criteria was acceptable on a generic basis. It stated that a suitable reactor coolant pump trip criterion can be selected by each licensee to minimize reactor coolant pump trip during steam generator tube ruptures and non-LOCA events, while still providing RCP trip for small break LOCAs. The GL also requested that licensees select and implement an appropriate RCP trip criterion based upon the WOG methodology.

Findings:

In two letters, dated October 10, 1985, and January 21, 1986, the licensee submitted their response to Generic Letters 83-10d and 85-12. The response included the results of a Westinghouse (W) evaluation of RCP restart criteria. The submittals provided the following conclusions:

- The evaluation has indicated an acceptable plant response to a SBLOCA regardless of RCP status. Therefore, the RCP trip on safety injection caused by low reactor coolant system pressure will be removed.
- The evaluation recommended revisions to the steam generator tube rupture (SGTR) emergency operating instruction (EOI) and they are being incorporated into the procedure.

The inspector verified the procedure changes were being made in accordance with the Westinghouse recommendations and training has been given on the changes. This item remains open pending NRR acceptance of the licensee submittals.

No violations or deviations were identified.

3. Licensee Action on 10 CFR Part 21 Reports

a. (Closed) Raychem Auto-Trace 20PTVI Electrical Heat Trace (RV Item 85-17-80)

A June 24, 1985 letter from Raychem Corporation to the NRC described a problem with the subject heat trace in that it may have a slightly lower than specified power output. For applications where the heat trace is on continuously this may mean a lower maintenance temperature. For other applications it could mean a higher duty cycle.

The licensee's review of this item found that all of the suspected heat tracing at the site was located in the Unit 1 maintenance warehouse and had not been issued for application. The licensee has

quarantined the heat tracing and stated that it will not be issued for application until it has been evaluated and approved.

This item is considered closed for Units 1, 2, and 3.

No violations or deviations were identified.

b. (Closed) BBC Brown Boveri, Inc. Voltage Balance Relay (ITE-60) (RV Item 84-00-P)

On October 29, 1984, the NRC received a letter from BBC Brown Boveri, Inc. describing a problem with the subject relays in that testing had indicated that the relays were outside of published specifications for operating time.

The licensee performed a review of the relays in use in the plant and concluded that degraded operating times would have no adverse effects. However, all of the relays are being returned to the manufacturer for factory modification to meet the specifications.

This item is considered closed for Units 1, 2, and 3.

No violations or deviations were identified.

4. Licensee Action on IE Bulletins and Information Notices

a. (OPEN) Bulletin 85-03 Motor-Operated Valve Common Mode Failures During Plant Transients Due To Improper Switch Settings

This item was examined and partially closed for Unit 2 in inspection report 50-361/86-16. The licensee's response, issued May 19, 1986, provided the results of a review of the design bases for the operation of each valve. This satisfied action "a" of the bulletin.

Remaining actions to be performed include "b" review of the design bases, "c" changes to individual valve settings, and "d" revisions to procedures to ensure correct switch settings. The licensee has scheduled to complete actions "b" through "d" prior to startup from:

- Maintenance outage ending June 1987 for Unit 1
- Refueling outage ending June 1986 for Unit 2
- Refueling outage ending March 1987 for Unit 3

This item will remain open pending inspection of the completed actions.

No violations or deviations were identified.

b. (Closed) Information Notice 85-91 Load Sequencers For Emergency Diesel Generators

The notice advised licensees of potential design deficiencies that could bypass load sequencers, thereby causing the loss of redundant emergency diesel generators (EDGs).

The licensee reviewed the design of their electric power system and concluded that the same event could not occur due to a different transformer to bus load design. However, the licensee is reviewing the possibility that other voltage sources could feed the bus causing a similar event to occur.

This item is closed based upon the licensee's action to date and their system for information notice review

No violations or deviations were identified.

5. Licensee Actions On Previously Identified Items

a. (CLOSED) Enforcement Item 84-28-01 Moisture Seals On Solenoid Valve Operators

Previous Inspection

Inspection report 50-206/84-28 identified that no seals were installed in the electrical conduit/cable connections to the solenoid operators for the reactor head and pressurizer vent valves SV-2401, 02, 03, 04; and 3401, 02, 03, and 04. This condition was in violation of regulatory requirements.

As a result of this violation, the licensee committed to replace the existing seal material with CONAX electrical connection seal assemblies.

This Inspection

The inspector held discussions with licensee personnel and reviewed applicable documentation to conclude that the licensee has installed and tested CONAX seals on the subject valves. Design Change Package (DCP) No. 3066.12 which was approved on October 2, 1985, completed the installation of the seals for valve nos. SV-2401, 2402, 3401, and 3402. The remaining valves (SV-2403, 2404, 3403, and 3404) were included in DCP 3066.19. The DCP remains open pending the completion of work on items non-related to these valves. All of the work on the subject valves has been completed, tested, and documented. Therefore, this item is closed.

No violations or deviations were identified.

b. (OPEN) Enforcement Item 85-37-01 As-Found Main Steam Safety Settings

Previous Inspection

This item involved a violation for failing to record the as-found condition of the Main Steam Safety Valve settings during testing as required by plant procedures.

This Inspection

In response to this violation, the licensee committed to revise the test procedures to specifically require the as-found condition to be recorded. Also, due to questions regarding the accuracy of the test data and the present valve settings, the licensee committed to re-test all ten of the valves prior to entry into Mode 2 during restart from the current outage.

The inspector reviewed the procedures (SO1-I-2.4, SO1-I-6.64 and others) and noted that they had been revised to require that the initial test lift be recorded as the as-found value on the data sheet. This item remains open, however, until the completed test data can be reviewed to ensure the correct settings. At the exit meeting, the licensee committed to provide the test results to the NRC Resident Inspector's Office upon completion of the testing.

No violations or deviations were identified.

c. (OPEN) Unresolved Item 85-37-02 Calibration of Equipment Used to Test the Main Steam Safety Valve Settings

Previous Inspection

During the inspection resulting in enforcement item 85-37-01, the inspector also questioned whether two test calibration requirements had been met. The first question was whether the hydroset device (used to perform the safety valve test) had been calibrated as a unit within 24 months of the test as recommended by the manufacturer. The second question was whether the hydraulic test gauges were within calibration during the required gauge recalibration after the test.

This Inspection

The inspector reviewed calibration data for the hydroset device dated August 29, 1984 and concluded that the hydroset device had been calibrated within 24 months of the test. Therefore, the first question was resolved.

Concerning the second question, ASME Section XI requirements of Power Test Code (PTC) 19.2-1964, "Pressure Measurement Instruments and Apparatus", for valves covered by the Inservice Inspection (ISI)

program, states in part "....Gauge correction tests shall be made within 48 hours before and within 24 hours after a test, with no pressure applied in the intervals." The licensee initiated a Corrective Action Request (CAR) no. SO-P-914 which concluded that in the case of both gauges used in the testing, the correction test was not performed.

This deficiency was identified in an April, 1985 licensee review of the testing procedures and the licensee initiated procedure changes to specifically require the correction test to be performed. The revised procedures were in routing for review when the NRC concerns were identified. The procedures were issued on December 14, 1985. Therefore, the inspector concluded that the licensee had identified the deficiency and taken the appropriate corrective actions to resolve it prior to the NRC inspection.

However, as part of CAR SO-P-914 the licensee is reviewing their records to identify any other ISI valves that were tested with the subject gauges so a review of the data can be performed to determine the accuracy of the test results. At the exit meeting, the licensee committed to provide the inspector with the results of this review. This item will remain open pending the NRC review of the results.

No violations or deviations were identified.

6. Exit Meeting

On June 2, 1986, an exit meeting was held with the licensee representatives identified in paragraph 1. The findings as documented in this report was discussed.