U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report Nos. 50-206/85-37, 50-361/85-35, 50-362/85-34

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

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

Licensee: Southern California Edison Company
P. O. Box 800
2244 Walnut Grove Avenue
Rosemead, California 92770

Facility Name: San Onofre Units 1, 2 and 3

Inspection at: San Onofre, San Clemente, California

Inspection conducted: November 12-15 and December 9-18 and 30, 1985

Inspector: PPNarbut 1/21/86
P. P. Narbut, Project Inspector Date Signed

Approved By: P Qualls FOR 1/21/86
P. H. Johnson, Chief Date Signed
Reactor Projects Section No. 3

Summary:

Inspection during period of November 12-15 and December 9-18 and 30, 1985 (Report Nos. 50-206/85-37, 50-361/85-35, 50-362/85-34)

Areas Inspected: Unannounced inspection by a regional inspector of the licensee's tests and experiments program and of the licensee actions on previously identified items. The inspection involved 113 inspection hours onsite and 24 inspection hours in-office by one inspector. During this inspection, IE inspection procedures 37703, 92701, 92717, 92712, 90712, and 92703 were used.

Results: Of the areas inspected, one violation was identified (failure to record as-found settings of Unit 1 Main Steam Relief Valves - paragraph 3.a).

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DETAILS

1. Persons Contacted

Southern California Edison Company

*H. B. Ray, Vice President, Site Manager
#*W. G. Zintl, Manager, Compliance
#*C. A. Kergis, Compliance Engineer
*N. Maringas, Independent Safety Engineering Group (ISEG)
#*J. T. Reilly, Manager, Station Technical
#*H. E. Morgan, Station Manager
*R. W. Krieger, Operations Manager
*J. M. Curran, QA Manager
Z. Inwalski, Station Technical Engineer
M. J. McDevitt, Computer Engineer
S. Goslin, Station Technical, NSSS
J. Redmon, Station Technical
#D. B. Schone, Site QA Manager
#M. A. Wharton, Deputy Site Manager
#H. W. Newton, Manager, Material Supply
#D. E. Shull Jr., Manager, Maintenance
#N. Maringas, ISEG Engineer
#D. A. Herbst, ISEG Supervisor
#W. R. Savage, Maintenance General Foreman
#H. Merten, Maintenance Manager
#G. Gibson, Supervisor, Compliance

Combustion Engineering, Inc.

G. Bundick, Site Representative

*Indicates persons attending the exit interview of November 12, 1985.

#Indicates persons attending the exit interview of December 18, 1985.

2. Examination of Tests and Experiments Program (37703)

The inspector examined the licensee's program for the control of tests and experiments to assure that it was in conformance with regulatory requirements.

10 CFR 50.59 authorizes licensees to make changes from the conditions described in the FSAR. The licensee is authorized, therein, to perform tests and experiments different from those described in the FSAR. Limitations and conditions are placed on the changes that the licensee can make. Prior NRC approval is required if the change involves an unreviewed safety question or is not in accordance with technical specifications. The licensee is required (when implementing departures from the FSAR description) to maintain a record of the experiment, perform a safety evaluation, and make an annual report to the NRC.

The most difficult aspect of this process is the determination of whether a test or experiment is different from that described in the FSAR. Clearly, the regulation was not intended to limit endeavors such as troubleshooting components in isolated portions of systems or performing detailed maintenance procedures (none of which are described in the FSAR).

Procedures

The inspector reviewed the licensee's implementing procedures, which prescribed requirements for tests and experiments to verify that the requirements and/or commitments of 10 CFR 50.59, ANSI 18.7, the FSAR and the license technical specifications were incorporated. The procedures reviewed were:

- S0123 VI-1.0 Revision 10, Document Review and Approval Process
- S0123 VI-1.3 Documenting Safety and Environmental Evaluations
- S0123 GCO-2 Rev. 0, Reporting Requirements to the NRC
- E&C Procedure 40-9-21, NSG Review, Evaluation and Audit Responsibility

The inspector concluded that the licensee was adequately addressing the review for an unreviewed safety question and the review for conformity to technical specifications. These reviews are documented on a "Form 09-1" contained in procedure S0123 VI-1.3. The review is performed by the cognizant functional division manager or his specified designee.

There was no clearly and separately documented decision in the licensee's process as to whether the test or experiment is different from that described in the FSAR. The licensee decision must be inferred from the overall 50.59 review and approval. The lack of a documented decision regarding the FSAR description is not a regulatory issue; it simply is not as clear and direct as the licensee's method of documenting decisions regarding an unreviewed safety question or technical specification applicability. This subject was discussed at the exit interview on November 18, 1985.

Sample of Tests and Experiments

The inspector examined a sample of tests and experiments conducted by the licensee to determine if the licensee's procedures for review were properly implemented. Procedures reviewed included:

S023-SPE-33, CEDM 20 Investigation
S02 SPSU 8051, CVCS Letdown System Test
S023-V-1.0.6, Control Element Assembly Worth by Exchange

All the procedures were determined, by the licensee's review process, not to involve an unreviewed safety question, not to violate technical specification and not to be different from the FSAR description.

The inspector had lengthy discussions regarding procedure S023-V-1.0.6 dealing with control rod worth. The central topic was whether or not the procedure was different from that described in the FSAR for control rod worth measurement. The licensee had performed the control rod worth in the same manner as described in the FSAR (by boration/dilution) but, in addition, had performed the rod worth measurements by an exchange method. The method used was experimental in nature but had been extensively discussed with NRC licensing personnel and was part of a CE owner's Group initiative. The FSAR did not specifically address the method used but did generally authorize "alternate CEA configurations", when "boration/dilution is impractical". The inspector discussed the situation with NRC licensing personnel and concluded that the licensee experiment was formally within the scope described by the FSAR but that the licensee could have been more conservative and addressed the test as a 50.59 test and experiment.

Reports to the NRC

The inspector followed up the above noted observation by reviewing the last SCE Annual Report to the NRC dated May 10, 1985. It was noted that the licensee reported no tests and experiments in that report, which was for the entire 1984 calendar year for Units 1, 2 and 3.

At the exit interview on November 15, 1985, the inspector noted, for licensee management's consideration, the two major conclusions from the examination of the tests and experiments area;

- The licensee's procedures do not force a documented decision as to whether a test or experiment is or is not different from that described in the FSAR.

- The licensee's threshold for classifying a test or experiment as applicable to 50.59 may be too high based on the absence of any such classifications in 1984.

Licensee management stated they would consider the inspector's findings. This item will be followed up in the normal course of periodic inspections in this area.

No violations or deviations were identified.

3. Licensee Action on Previously Identified Items

a. (Closed) Followup Item 50-206/82-15-03 - Main Steam Safety Valves

This item is closed based on being superseded by a violation as described herein. The item dealt with the failure to record the as-found setpoint pressures of the main steam safety valves. At the time (1982) only the as-left setpoint pressures were recorded.

As-found relief settings are important information necessary to judge whether the periodicity of testing is sufficient to ensure the valves remain at the proper set point pressure between test verifications.

The inspector examined the applicable test procedure which had been revised to ensure as-found settings would be recorded. The procedure, S01-I-2.4, Valve Main Steam Safety, Pressure Setpoint Check and Adjustment, Revision 4, dated October 26, 1984 was revised to clearly require a sequence of determining the setpoint, recording the data, comparing the data with acceptance criteria, adjusting the valve (if required) and then repeating the cycle until three acceptable tests had been performed.

The inspector reviewed the main steam safety valve test data taken using the procedure during the return to service in 1984 to determine whether the as-found relief point pressures were taken.

Contrary to the procedure requirements, the as-found relief point pressures were not recorded for 6 of the 10 main steam safety valves, RV-2, 3, 4, 6, 8 and 10. The data did show that adjustments of up to 3 flats of the adjustment screw were necessary to bring some of the valves into the proper set pressure tolerances. Licensee personnel were not able to provide an estimate of how much out of tolerance the valve relief pressures were in the as-found condition.

The failure to follow procedural requirements to record as-found main steam safety relief valve set pressure is considered an apparent violation of NRC requirements (Violation 50-206/85-37-01).

At the exit interview on December 18, 1985, the inspector discussed the apparent violation with licensee management. It was noted that although proper management policies and adequate procedures were in place in the circumstances of this violation, it appeared that involved personnel failed to adequately implement those policies and procedures. This is considered similar to the circumstances surrounding the auxiliary feedwater pump violation described in report 50-206/85-33.

In this case the procedure was performed by and the resultant improperly recorded data was witnessed and signed for by a maintenance mechanic, a quality control inspector, and a codes engineer. Additionally, the improperly recorded data were subsequently reviewed and approved by a maintenance supervisor, a quality assurance engineer, and a senior reactor operator. The fact that multiple reviews failed to note the lack of procedure compliance strongly indicated a need for additional emphasis focussed at the implementation level of all involved organizations.

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 gages were within calibration during the required gage recalibration after the test.

The licensee could not provide the information prior to the exit meeting on December 18, 1985. On January 8, 1986, the Supervisor of Compliance notified the inspector that no information had been found on the hydroset device calibration, and that the gage recalibration had apparently been done but no records could be found. The licensee was generating a corrective action request to resolve the matter.

The apparent lack of proper calibration of the test equipment used on the main steam safety valves is considered an unresolved item and will be examined further in a future inspection. (Unresolved item 50-206/85-37-02)

As an additional matter, the inspector noted that the main steam safety valve procedure permitted the option to gag all main steam safeties except the one being tested, with reactor power at up to 10%. The licensee provided information to assure the inspector that the one remaining operable safety valve had sufficient capacity to accommodate the steam load expected at 10% reactor power. Additionally, the licensee stated that the procedure would be revised to eliminate the option since it was less desirable than the option to use the hydroset device. Followup is not considered required since the procedure revision was underway at the time of inspection.

b. (Closed) Followup Item 50-206/85-13-03 - Improper Test Pressure on System Boundary Valves

This item dealt with the post maintenance leakage check of the Unit 1 residual heat removal (RHR) to reactor coolant system (RCS) boundary valves. The valves had been tested at RHR system pressure instead of the RCS system pressure even though the parts replaced (valve bonnet studs) would see the RCS pressure in service.

During this inspection, the inspector reviewed an analysis of the problem as documented in a memorandum from the Station Technical Manager to the Compliance Manager dated November 8, 1985. The letter recommends a change to the procedure for system testing (S0123-V-4.16) to require testing system boundary valves twice, once at the lower system pressure and once at the higher system pressure. The inspector then verified that the requirement to revise the procedure was entered on the San Onofre Commitment Register (SOCR).

This item is considered closed based on the licensee's actions.

c. (Closed) Followup Item 50-206/85-13-02 - Alternate Bolting Material, Allowed by The Piping Specification, Should be Verified Technically Sound

This item dealt with the addition to the piping material specification of an alternate pipe flange bolting material (stainless steel in lieu of carbon steel). The licensee had committed to evaluate whether the lower strength stainless steel was an acceptable substitute.

During this inspection the inspector determined that the licensee had taken action to eliminate stainless steel as an option and had issued DCN-3 to drawing M-18668 (the piping material specification) on May 29, 1985 eliminating stainless steel as an option for the piping bolting in question.

Prior usage of the improper material was evaluated and either changed or scheduled for change as described in Inspection Report 50-206/85-31.

This item is considered closed based on the licensee's actions.

d. (Closed) Followup Item 50-206/80-11-03 - Pressurizer Code Safety Valves

This item dealt with the Unit 1 pressurizer code safety valves. At the time, the licensee performed cold testing to determine the relief setpoints and did not utilize cold-to-hot correlation factors which would ensure the valves would relieve at the proper set pressure when the valve was at normal operating temperature in service.

The licensee has decided to implement a program similar to that used in Units 2 and 3 wherein the Unit 1 valves will be tested hot at a test facility thereby eliminating the need for cold-to-hot correlation factors. The inspector reviewed the specifications issued to control the hot testing of the valves (S01-408-01 Revision 2 and S01-048-02 Revision 0).

This item is considered closed based on the licensee's actions.

e. (Closed) Followup Items JH-82-04 Through 82-09 - Commitments made for Handling Heavy Loads in Unit 1

These items dealt with commitments made by the licensee in a letter to the NRC dated July 6, 1982. The commitments were in regard to fulfilling the requirements of NUREG-0612.

The inspector determined that the licensee's commitments made in 1982 were no longer valid and had been superseded by a continuing flow of correspondence between the licensee and the NRC.

The licensee's program for heavy lifts in Unit 1 was reviewed and accepted by the NRC as summarized in the NRC Safety Evaluation Report (SER) dated November 4, 1985.

The subject followup items are considered closed on the basis of the issuance of the SER.

4. Licensee Action on IE Bulletins and Generic Letters

a. (Closed) IE Bulletin 84-02 - Failures of General Electric Type HFA Relays

This item had been extensively examined in previous inspections. The remaining action item was the completion of the licensee's commitment to implement a comprehensive material control program as described in the licensee's letter to NRC dated March 29, 1985. The comprehensive program was described as the Control of Problem Equipment (COPE) program and was committed to be fully implemented by June 1, 1985.

The inspector examined the COPE program and considered that it did not represent a comprehensive program as indicated in the licensee's response to the bulletin. This consideration was based on review of applicable procedures, interviews with involved personnel and examination of actions taken to date. The following were determined:

- The current COPE list was surprigingly short; only 16 items were included whereas there have been hundreds of notifications by IE Bulletins, Information Notices, INPO reports and vendor reports regarding material problems. The low number of items on the COPE list was apparently due to a severe screening by project engineering. Non-conservative approaches were taken such as (1) not adding an item to COPE if it was an older vendor Part 21 report because "the vendor and suppliers should have taken appropriate action" and (2) not adding an item to COPE if the problem applies to equipment with older manufacturing dates because "the older material is probably not available any more".

- There was a backlog of about fifty older (over a year) items awaiting project engineering review for COPE applicability.

- The COPE coordinator did not agree with the adequacy of some material searches, and did not agree with decisions made regarding COPE applicability, but did not formally voice his disagreement. Responsible management stated they were not aware of the situation.

- Procedural requirements for responsible management to perform "a periodic review of effectiveness" and "taking corrective actions" had not been formalized.

- One of the COPE items appeared improperly closed - item 15 of the COPE list, which dealt with Brown Boveri Corporation ITE-60 relays. The relays must be tested to ensure they operate within the required 10 milliseconds. The action identified in the COPE package was that 9 such relays had been identified. Instructions had been issued to test the relays. The COPE information showed that only 8 of the 9 relays had been tested and 6 of the 8 had failed. No corrective action for the failed

relays was noted and it was not known if further action was planned. The COPE "Problem Equipment Tracker", Form SO(123) 421, was closed based on performance of the testing only.

- The COPE coordinator was not receiving all required information. The COPE procedure requires all IE Bulletins, Notices, vendor notices, etc. to be forwarded to the COPE coordinator. In practice, however, the COPE coordinator was only receiving screened information, items that the other involved organizations deemed to be COPE material. Therefore, the COPE coordinator did not have the ability to concur or disagree with the screening done.

At the exit interview on December 18, 1985, the subject of the COPE program was discussed. Licensee management committed to review the COPE program status and take action as required by April 1986.

This subject of the bulletin is considered closed. Action taken regarding the COPE program will be examined in a future inspection (Followup Item 50-361/85-35-01).

b. (Closed) Generic Letter 85-05 - Inadvertent Boron Dilution Events

This generic letter was issued January 31, 1985, and was provided for information to all licensees. The letter did not require licensee action but strongly urged all licensees to assure themselves that adequate protection against boron dilution exists.

The inspector examined licensee actions taken in response to the generic letter. Specifically, the licensee documented a review of existing protection against boron dilution events in Units 1, 2 and 3. The analysis dated March 11, 1985 showed multiple indications, alarms and automatic measures in each of the units. The analysis was reviewed by the manager of station technical and that review was documented in a memorandum to file dated May 29, 1985.

This generic letter is considered closed based on the licensee's actions.

5. Licensee Action on 10 CFR Part 21 Reports

a. (Closed) Part 21 Item 85-15-PO - TEC Model 914-1 Analog Level Detector

This Part 21 report was submitted to the NRC by the Technology for Energy Corporation (TEC) on July 19, 1985, and concerned the TEC Model 914-1 Acoustic Valve Flow Monitor Module. The failure involved was one of indication, not operation; it concerned an LED improperly remaining lit after the alarm condition had passed.

The licensee's records showed that TEC properly notified SCE of the problem. SCE investigated and determined the components were used in the tail pipe section of the pressurizer relief valves. The

licensee had completed testing for the Unit 2 detector and had scheduled testing for the Unit 3 detectors.

This Part 21 report is considered closed based on the licensee actions taken.

b. (Open) Part 21 Item 85-16-PO - Pacific Scientific Snubbers Using Pipe Clamps Manufactured by NAVCO

This item involved pipe clamps manufactured by NAVCO and supplied with snubber assemblies made by Pacific Scientific. The problem dealt with pipe clamps which did not clamp the pipe with sufficient force and could slip in service. The NRC was notified by Pacific Scientific of the Part 21 condition in a letter dated August 23, 1985. The licensee had been notified in a letter dated July 19, 1985. The corrective action recommended replacing the clamp bolting material with a higher strength material and increasing the installation torque values.

Several problems were identified as a result of the inspector's examination of licensee actions for this item:

- The ISEG group performed an evaluation of the Part 21 report and reached an improper conclusion. Specifically, the conclusion reached did not recognize the fact that new bolting material was required. This was in part due to the fact that the Pacific Scientific letter to the licensee was somewhat obscure in stating that new bolting material was required.

- The maintenance procedure group did not recognize the need or intend to obtain design engineering concurrence when changing the procedure torque values for the pipe clamp bolting material. Increasing bolt torque values could exceed design code allowable stresses and such a decision should be made by the design organization.

These areas were discussed with licensee management at the exit interview on December 18, 1985. The inspector was informed that the maintenance procedure would be revised to require new bolting material and the procedure would be reviewed by a responsible design organization. The inspector noted that there may be a broader problem in maintenance personnel awareness of when they are broaching design issues as evidenced by this occurrence and by the modification of the auxiliary feedpump oil sight glass in Unit 1 discussed in report 50-206/85-33.

Based on the above, licensee action on the above Part 21 report is considered open and will be examined further in a future inspection report.

6. Licensee Actions on Information Notices

The inspector examined licensee actions on several IE Information Notices. The licensee's actions were found to be generally thorough,

adequately documented and actions properly administered and tracked to completion. The inspector noted a relatively minor backlog of older Information Notices, some of which only required final supervisory review for closeout. These were processed during the course of the inspection in a timely fashion with the net result that the licensee had 36 open IE Notices under evaluation with an average age of 3.3 months. Only 6 of the 36 were older than 6 months. Based on the inspector's sample the following Information Notices were considered closed for Units 1, 2 and 3 based on the status of the licensee's action:

Information Notices 83-54, 83-55, 83-56, 83-57, 83-60, 83-61, 83-62, 83-93 and 85-23.

7. In-office Review of LER's

The following Licensee Event Reports (LER's) were reviewed in the NRC regional office during the period of this report. Attributes examined included: report timeliness, inclusion of required information, adequacy of proposed corrective action and the need for further follow-up inspection. The following LER's and their revisions are considered closed based on this review:

Unit 1

85-016	Fire System Nozzles Plugged with Rust

Unit 2

84-023 Rev. 1	Spurious Noise Spikes on Control Room Isolation System (CRIS)
84-02 Rev. 2	Spurious Noise Spikes on Containment Purge Isolation System (CPIS)
84-046 Rev. 1	Revised to Correct Dates
85-054	Circuit Breakers not Tested
85-052	Spurious Toxic Gas Isolation System (TGIS) Actuation
85-55	Fuel Handling Isolation System (FHIS) Actuation due to Failed Monitor
85-56	Spurious CPIS Actuation
85-47	Spurious TGIS Actuation

Unit 3

85-032	Spurious FHIS Actuations
85-019 Rev. 1	Spurious Noise Spikes on FHIS
85-035	CPIS Actuation due to a contaminated tool movement near a radiation monitor
85-034	FHIS Actuation due to grounded lead
85-033	Spurious FHIS actuation

8. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of

noncompliance, or deviations. An unresolved item disclosed during this inspection is discussed in Paragraph 3.a of this report.

9. Management Interview

The inspector and the NRC resident inspector met with the licensee representatives (denoted in Paragraph 1) on November 15 and December 18, 1985. The scope of the inspections and the inspector's findings, as noted in this report, were discussed.