

U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report Nos. 50-206/86-11, 50-361/86-16, 50-362/86-16

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 91770

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

Inspection at: San Clemente, California

Inspection conducted: April 14-25, 1986

Inspectors:

Clifford R. Clark
C. Clark, Reactor Inspector

5/15/86
Date Signed

James F. Melfi
J. Melfi, Reactor Inspector

5/15/86
Date Signed

Approved by:

Talbert Young Jr.
T. Young Jr., Chief
Engineering Section

5-15-86
Date Signed

Inspection During the Period April 14-25, 1986 (Report Nos. 50-206/86-11, 50-361/86-16 and 50-362/86-16)

Areas Inspected: A routine unannounced inspection of Inservice Inspections (ISI), Open Items, Part 21 Item, IE Notices and Bulletins. The inspection involved Module Nos. 73753, 92701, 92702 and 92703.

Results: In the areas inspected, no violations of NRC requirements were identified.

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DETAILS

1. Personnel Contacted

*H. Morgan, Station Manager
*M. Wharton, Deputy Station Manager
*J. Reilly, Station Tech. Manager
*J. Curran, Manager, QA
*W. Zintl, Manager, Compliance
*C. Couser, Lead Compliance Engineer
*V. Gow, Codes QA Engineer
*W. Savage, Maintenance Planning Supervisor
*C. Olvera, ISEG Engineer
*D. Herbst, ISEG Supervisor
*M. Sullivan, ISEG Engineer
*D. Henry, ISI Engineer
*D. Schone, Site QA Manager
J. Schramm, Unit 1 OP
P. Croy, IST Coordinator
W. Lazear, QA Supervisor
M. Ramsey, Codes QA Engineer
R. Phelps, Supervisor, Nuclear Systems Engineering
G. Gibson, Supervisor, Compliance
T. Graham, Supervisor, Electrical Test
J. Grimes, Supervisor, Plant Maintenance, Electrical and Mechanical
J. Cronk, Electrical Supervisor

*Denotes those individuals attending the exit meeting April 18, 1986.

The inspectors also held discussions with other licensee and contractor personnel during the inspection.

2. Licensee Action on Previously Inspector Identified Items

a. (Closed) Followup Item No. 50-206/85-26-01: Licensee Review of Inservice Testing (IST) Program Procedures

During the previous IST inspection the licensee stated they would review the inspectors identified procedure discrepancies and/or weaknesses and take remedial action as required.

During this inspection a licensee representative stated that they had performed a 100 percent review of all IST procedures and issued changes addressing the previously identified procedure discrepancies and/or weaknesses, plus some additional items they identified during their review. The above procedure improvements were confirmed by a sample review of the latest IST procedures.

This item is closed.

b. (Closed) Notice of Violation No. 50-206/85-26-02: Incomplete Summary Records of Corrective Actions Performed on Pumps

During the previous IST inspection the licensee IST procedures required a summary record of corrective action or a licensee check-off sheet 5.2 in the IST program records or station engineering files, for pump repair work. The above identified repair documents were not always filed.

During this inspection the licensee identified that the missing records had been placed in the IST program records/station engineering files, and this was confirmed. IST procedures have been changed for San Onofre 1 to eliminate the use of the licensee summary record of corrective action (check-off sheet 5.2) form for future pump repair work. The licensee has taken the position that the San Onofre Maintenance Management System (SOMMS) contains Maintenance Order (MO) records and the Corporate Documentation Management (CDM) records contains completed test records, memoranda, Nonconformance Reports (NCRs), and all this data is readily available to site personnel as a summary record of corrective actions performed on pumps.

This item is closed.

c. (Closed) Followup Item No. 50-206/85-26-03: Review of Licensee Memorandum on Acceptance Criteria for RHR Pump Differential Pressure

The acceptance criteria used for differential pressure (DP) during IST of RHR pumps, did not appear to agree with the reference test values specified in pump test records. After the previous IST inspection, the licensee identified a memorandum that explained the basis for use of the subject acceptance criteria.

During this inspection a memorandum for file, subject: Inservice Testing of Residual Heat Removal (RHR) Pumps at SONGS-1, dated September 18, 1981, from D. W. Bailey, was reviewed.

This subject memorandum stated that "setting reference pump test conditions from previous tests every time would be a difficult task and in some cases could be harmful to the system. Therefore, as an intermediate method, until a design change can be completed, installing inlet pressure gauges on the pumps, the calculated DP will be compared to the as-built pump performance curves. The "acceptable" range will then become greater than or equal to 0.93 times the differential head taken from the point on the curve, at a reference flow rate. This and the vibration data results will be used as the basis for pump operability." Based on the above memorandum and other information provided by the licensee, the question on the subject DP discrepancy appears to have been answered.

This item is closed.

d. (Closed) Unresolved Item No. 50-206/85-26-04: Records for 14 Relief Valves Were Not Readily Accessible for Audit

During the previous IST inspection the licensee was not able to provide requested associated records on 14 relief valves, for review during the site inspection period.

During this inspection, available records were reviewed.

This item is closed.

e. (Closed) Followup Item No. 50-206/85-26-05: A Comprehensive Licensee Review of IST Program Activities Appears Necessary

A licensee representative stated a comprehensive review of all IST program activities was performed after the initial IST inspection and provided documentation of some of the improvements and training generated from this review. During discussions with the licensee it was identified to them, that it is to their advantage to clearly record all the changes, positions and results generated during reviews of activities at their site. It appears that the licensee has taken positive action on this subject and the program has improved since the initial inspection.

This item is closed.

f. (Closed) Unresolved Item No. 50-206/86-05-01: The Location of All of San Onofre Unit No. 1 ISI Records Were Not Readily Identified

During this inspection the licensee provided copies of inservice inspection (ISI) reports, which were issued by the organizations that performed inservice inspections on San Onofre Unit No. 1. These reports contained copies of ISI records, inspection results and evaluations, for inspections performed during the years 1973, 1975, 1976, 1978, 1979, 1980 and 1984.

During this inspection, licensee representatives stated the following:

- o "The only complete set of or copies of ISI records on site for San Onofre Unit No. 1, if the original inspection records were not maintained on site, were the ISI reports identified above."
- o "Some companies like Westinghouse, who performed ISI's in 1980 and 1984, have retained the original ISI records. This will not be the case for future inspections."
- o "During this and the previous inspections, the licensee copy of the ISI reports identified above, were not index in a system maintained in the corporation documentation management (CDM) system." Without an index of available quality ISI inspection reports, there is no controls or identification as to what and where this information is on site. Some ISI reports were found in an uncontrolled area, in another building, on the floor and

in boxes under an ISI engineer desk and work tables. Some ISI reports were setting on various desks in the CDM, not in a controlled file area. It is the licensee position that the official records (not on site) are maintained off site under the control of the ISI contractor who performed the ISI inspection and issued the original report.

o The subject copies of the reports had been removed from a control area prior to January 1986, when that area was reassigned. This movement was not controlled by written documents, and that is the reason all the copies of the reports did not end up in a controlled area.

This lack of control of copies of ISI reports/inspection information at all times on site, does not appear to follow the licensee position/statement that all quality records/information required on site are stored in CDM for accurate retrieval of information without undue delay. When the above situation was brought to the licensee attention, they took immediate actions to transfer the applicable copies of the ISI reports into the CDM system and stated they will ensure all future movement of similar information on site is controlled by written documentation.

This item is closed.

g. (Open) Followup Item No. 50-361/85-22-03: Safety Analysis and ASME Section XI Operability Limits for Inservice Testing of Pumps

During a previous inspection, inspectors questioned whether the operability limits of IST requirements for pumps were bounded by the safety analysis.

During this inspection the licensee provided a copy of a memorandum from K. D. Flynn to P. A. Croy, dated February 17, 1986, on the subject of "Safety Analysis and ASME Section XI Operability Limits for In Service Testing of Pumps". This memorandum provided the results of a licensee evaluation of the inservice testing of pumps program at SONGS 1, 2 & 3, in order to determine whether ASME Section XI acceptable test parameter ranges are bounded by FSAR analyses. The last paragraph of the subject memorandum stated in part, "from the above discussion it appears that the inservice testing of pumps program conducted in accordance with section XI of the ASME B&PV code provides adequate assurance that pump performance will not be allowed to degrade to the point where FSAR analyses become invalid." The inspector noted that attachment I to this memorandum, titled "Unit 1 Pump IST Reference Values", did not list the RHR pumps. A licensee representative stated this deletion of the RHR pumps from attachment I, appeared to be an oversight and they will look into it. The memorandum identified below, includes the RHR pumps.

A memorandum from P. A. Croy to J. Rainsberry, dated April 7, 1986, on the subject of "In-Service Inspection Acceptance Criteria San Onofre Nuclear Generating Station, Unit 1", requested a new review

to determine if any pumps are currently being tested and accepted which do not meet the minimum required performance criteria of the safety analysis. As of this inspection a reply to the above memorandum, with the results of this latest review, were not available for inspector review. This is followup item no. 50-206/86-11-01 for Unit 1.

This item will remain open until the identified review in the April 7, 1986 memorandum is completed and reviewed by an inspector.

- h. (Open) Unresolved Item No. 50-206/85-12-01 Failure to Correctly Calculate the As-Found Leakage Rate from Containment During an Integrated Leak Rate Test

The licensee is still working on this item and has not completed its review.

This item will remain open until the licensee's review is completed and reviewed by an inspector.

3. Licensee Action on IE Bulletins

(Open for Units 1, 2 and 3) IE Bulletin 85-03: Motor-Operated Valve Common Mode Failures During Plant Transients Due to Improper Switch Setting

This IE Bulletin deals with Motor Operated Valve (MOV) common mode failures. This bulletin specifically addresses MOVs located in the High Pressure Safety Injection (HPSI), Core Spray and Emergency Feedwater systems. There have been instances where valves did not lift because the Differential Pressure (DP) across the valve was such that the torque generated by the motor could not lift the valve. The licensees were requested to develop and implement a program to ensure that the torque and torque bypass switches were correctly set to operate the valve against the maximum DP. The basis for this maximum DP has to be an analysis for both normal and abnormal events.

During the inspection, it was noted that the licensee was proceeding with work per this bulletin, in Unit 2. In addition, the licensee personnel stated that they were looking at other MOVs in other safety related systems (e.g. Low Pressure Safety Injection) and will attempt to complete the bulletin specific MOVs before restart. The valves in Unit 3 will be checked per this bulletin, during the next refueling (Cycle 4). Also, the bulletin specific MOVs for Unit 1 will be checked per this bulletin, before restart.

The inspectors understanding of additional information required for closing this bulletin includes the following items:

- A. Review and document the design basis for the calculated maximum DP across the valves.
- B. Review the switch settings for valves, that are derived from the design basis, to ensure the valve will lift.

- C. Review documentation on switch settings and/or changes to switch settings.
- D. Review the appropriate procedures on switch settings.
- E. Determine how the correct switch settings will be maintained over plant life.
- F. Observe work on several MOVs and ensure that procedures are being properly implemented.

INSPECTION RESULTS:

Item A - above, will be discussed in the licensee report on IEB 85-03, which is due May 15, 1986. The licensee stated that the basis for the maximum calculated DP across the valve would include line breaks. This sub item will remain open pending review of the report at a later time.

Item B - is the amount of movement that the bypass switches are set for. The licensee stated that the bypass switches are set to 15-20% of movement for gate valves, 20-25% for globe valves. This setting appears adequate to ensure proper lifting of the valves. This sub-item is closed.

Item C - is the documentation on the switch settings. The licensee had started work on this bulletin for Unit 2. In the procedure data sheets, the licensee recorded as-found and as left switch settings for the torque and bypass switches. A review of 3 completed data forms, revealed that they appeared to be complete with signoffs and the documentation seems adequate. This sub-item is closed.

Item D - is the review of the procedures used in adjusting the torque and bypass switches. The procedures used are S0123-I-6.7 and S0123-I-6.8 for the motor operated valves and S0123-I-8.313 is the procedure for the Motor Operated Valve Analysis and Testing System (MOVATS). The MOVATS system may be used as a diagnostic aid for the motor operators. Switch settings are kept in the as found condition or, when changed, generally require supervisor approval. When setting of the limit and/or torque bypass switches, the licensee normally appears to rely on the number of hand cranks. The torque switches, when set, are verified to be in the mid position. The MOVATS system may be used to help verify the switch settings. This sub-item is open, pending work on sub item F.

Item E - The correct switch settings will be maintained over core life with the official copies in the CDM, and MOV data also maintained in the maintenance department (for information). This sub-item is closed.

Item F - The observation of actual work was not performed by the inspector. Actual work should be observed on the valves. This sub-item remains open, pending further inspection.

4. Licensee Action on I.E. Information Notices

- a. (Closed for Units 1, 2 and 3) I.E. Information Notice No. 84-37:

Use of Lifted Leads and Jumpers During Maintenance or Surveillance Testing

This notice deals with the independent review of the use of lifted leads and jumpers. Mentioned in this notice is San Onofre Unit 3, where 4 of 8 reactor trip breakers did not have their shunt trip devices operable because some leads were not connected to the Reactor Protection System (RPS). The cause for this was personnel failing to reconnect leads that had been lifted during an 18 month surveillance. The surveillance procedure lacked independent verification of proper system restoration.

There are 2 solutions to this problem. Either hardware changes or procedural changes to prevent further problems. Due to the infrequency of the root cause event (once in 18 months), the licensee decided not to install switches.

The procedural changes initiated by the licensee requires a second operator verification of proper system configuration. The licensee has also modified 235 procedures and implemented training on the revised procedures.

This item is closed.

- b. (Closed for Units 1, 2 and 3) I.E. Information Notice No. 85-47: Potential Effect of Line-Induced Vibration in Target Rock Solenoid Operated Valves

This notice alerts the licensee that certain models of Target Rock (TR) solenoid operated valves failed during Environmental Qualification (EQ) testing. San Onofre Nuclear Generating Station (SONGS) has several of the TR valves mentioned in this notice.

This item was addressed in previous inspection report nos. 50-206/85-18, 50-361/85-17 and 50-362/85-16 issued July 2, 1985, under a Part 21 Item. This item was considered closed for Units 2&3 based on the licensee's issued Design Change Packages (DCPs).

The licensee stated that there are no Target Rock Valves in Unit 1.

This item is closed.

- c. (Closed for Units 1, 2 and 3) I.E. Information Notice No. 85-49: Relay Calibration Problem

This notice provides information on calibration of an Agastat Time-Delay Relay. An Agastat is a solenoid switch with a air passage that slows down the action of the solenoid. If this switch was calibrated horizontally, then operated vertically, gravity has an effect in the time to operate the switch.

The licensee addresses this with procedures S0123-II-11.152 and S0123-II-11.160. These procedures address the functioning of newly

installed circuitry and calibration of time delay relays in place for the proper time delay.

This item is closed.

- d. (Closed for Units 1, 2 and 3) I.E. Information Notice No. 85-66: Discrepancies Between As-Built Construction Drawings and Equipment Installations

This notice deals with the as-built construction drawing not completely reflecting equipment installations. Also, modifications of equipment might be susceptible to the same problem.

To verify that construction drawings reflected as-built installation, the licensee has performed a plant walkdown of Unit 1. During construction of units 2 and 3, design changes were incorporated into the drawings in a formal review process. When Units 2 and 3 completed their start-up phase, the drawings were verified to reflect as-built installations.

To ensure that drawings will reflect any modifications to Units 1, 2 and 3, the licensee issued procedures S0123-XIV-3.1 and S0123-V-4.15. These procedures require a review process at several levels, system walkdowns (before any changes are made), control documents, quality assurance (QA) procedures, and configuration control personnel.

The procedures appear to adequately address this notice.

This item is closed.

- e. (Open for Units 1, 2 and 3) I.E. Information Notice No. 85-71: Containment Integrated Leak Rate Tests

This notice addresses a potentially significant problem pertaining to Containment Integrated Leak Rate Tests (CILRTs). The problem is a misinterpretation between Local Leak Rate Testing and CILRTs.

The licensee currently is reviewing this problem. This item will remain open until the licensee's review is completed and reviewed by an inspector.

5. Licensee Action on Generic Letters

(Open for Units 1, 2 and 3) Generic Letter No. 85-22: Potential for Loss of Post-LoCa Recirculation Capability Due to Insulation Debris Blockage:

This letter addresses the potential loss of recirculation capacity due to a LOCA. This letter informs the licensee of the concern of LOCA generated debris blocking the emergency sump.

The analysis of this item was based on Regulatory Guide 1.82, Rev. 0. The letter informs the licensee of a new revision of this Regulatory

Guide, which has new insights into the amount of debris that might be generated during a LOCA.

At the time of this inspection, a licensee representative stated they had not received this generic letter and could not provide any documentation that the subject of the letter had been reviewed or evaluated by the licensee.

This item will remain open until the licensee has completed a review of the new information and the results of this review are reviewed by an inspector.

6. Licensee Action on Part 21 Items (Closed for Units 1, 2 and 3) Part 21 No. 85-13-P0: Anchor/Darling - Missing Lock Welds on Swing Check Valves

- o The licensee received the two letters from Anchor/Darling identified below:
 - a. Anchor/Darling to Greg Agosti, Procurement Agent, dated July 31, 1985, on the subject of missing lock welds on hinge pin set screws at Palo Verde Nuclear Generating Station.
 - b. Anchor/Darling to Greg Agosti, Procurement Agent, dated December 11, 1985, on the subject of lock welds also missing at the hinges support/hinge support capscrews interface and at the hinge support/bonnet interface.

After reviewing the two letters identified above, the licensee issued TCN's to maintenance procedures S023-I-6.19 and S023-I-6.71, to include a requirement to verify that setscrews had been lockwelded or peened in place and that missing hinge support welds were installed.

This item is closed.

7. Observation of NDE Activities

The inspectors observed ultrasonic examination being performed on selected reactor vessel head welds. The following attributes were evaluated and found to be consistent with the approved procedure and ASME Section XI requirements: the type of apparatus used, scanning technique, extent of coverage, calibration of the instrumentation and system prior to examination, beam angles, size and frequency of the search unit, limits of evaluation and recording of indications, and determination of acceptance limits.

8. Exit Meeting

On April 18, 1986, an exit meeting was conducted with the licensee representatives identified in paragraph 1. The inspectors summarized the scope of the inspection and findings as described in this report.