

U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION V

Report No. 50-361/79-32
50-362/79-29

Docket No. 50-361, 50-362 License No. CPPR-97, CPPR-98 Safeguards Group _____

Licensee: Southern California Edison Company
2244 Walnut Grove Avenue
Rosemead, California 91770

Facility Name: San Onofre Units 2 and 3

Inspection at: Construction Site, San Diego County, California

Inspection conducted: December 1-31, 1979

Inspectors: R.C. Haynes 3/10/80
for R. J. Pate, Resident Inspector Date Signed

Date Signed

Date Signed

Approved By: R.C. Haynes 3/10/80
R. C. Haynes, Chief, Reactor Construction Proj. Sec. Date Signed
Reactor Construction & Engineering Support Branch

Summary: Inspection on December 1-31, 1979 (Report Nos. 50-361/79-32 and 50-362/79-29)

Areas Inspected: Routine, unannounced inspection by the resident inspector of construction activities including: reactor pressure vessel and internals protection, 50.55(e) report followup, licensee corrective actions on previous inspection findings, and general work in progress. The inspection involved 22 inspector-hours onsite by one NRC inspector.

Results: Of the three areas inspected, no items of noncompliance were identified.

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DETAILS

1. Individuals Contacted

a. Southern California Edison Company (SCE)

- +*P. A. Croy, Site Quality Assurance/Quality Control Supervisor
- R. Frick, Quality Assurance Engineer
- R. R. Hart, Construction Superintendent
- J. Huey, Quality Assurance Engineer
- + D. A. Erdman, Project Construction Engineer
- +*D. E. Nunn, Manager Quality Assurance
- *W. F. Rossfeld, Construction Lead QA Engineer
- H. B. Ray, Project Management
- D. B. Schone, Lead Engineering Site Representative

b. Bechtel Power Corporation (Bechtel)

- +*C. A. Blum, Quality Control Manager
- + R. H. Cutler, Project Field Engineer
- +*J. E. Geiger, Project Quality Assurance
- + W. D. Nichols, Assistant Project Field Engineer
- +*L. W. Hurst, Project Field Quality Assurance Supervisor
- R. W. Welcher, Project Quality Assurance Engineer
- J. E. Bashore, Division Quality Assurance Manager

In addition, construction craftsmen, engineers and foremen were contacted during the inspection.

*Denotes attendees at management meeting on December 7, 1979

+Denotes attendees at management meeting on December 14, 1979

2. Construction Status

The licensee reported the site construction work is 76% complete as of December 26, 1979. The licensee's project management personnel estimated that the construction of Units 2 and 3 was 87% and 64% complete, respectively.

3. Licensee Action of Previous Inspection Findings

The inspector examined the action taken by the licensee on the following outstanding items:

- a. (Closed) Followup Item (50-361/78-18/03): The licensee's Procedure No. GT-400-19, "Preventive Maintenance Program for the Station Batteries", was examined. The inspector noted that the procedure did not address a number of IEEE STD 450 requirements for long-term maintenance.

The procedure GT-400-19 was used for construction maintenance and was not intended for maintenance of batteries after turnover to SCE. The procedure to be used after turnover is MPE G009. This procedure was reviewed and found to differ from IEEE STD 450 in two areas. The frequency of performing an equalizing charge was not specified, and the criteria for changes in specific gravity which would require an equalizing charge were not defined. Revision 1 to procedure MDP G009 was issued February 1, 1980 which included the necessary changes to bring the procedure in agreement with IEEE Standard 450. The inspector had no additional questions.

- b. (Closed) Followup Item (50-361/79-22/02): The inspector requested additional definition concerning the use of a "mare's tail" type basket grip for pulling cable.

The licensee revised the construction specification, GS-E01, to specifically allow the use of a mare's tail type basket grip for cabling pulling. A training session was held with all the cable pulling crews to discuss the use of mare's tails and how to attach the grip to the cable. Also, the Construction Procedure, WPP/QCI-604, was revised to require the QC inspector to inspect the mare's tail to insure it "is properly made and applied to the cable(s)". The inspector was satisfied that the actions taken by SCE and the constructor would be adequate to insure the proper use of the mare's tail type cable pulling connection.

- c. (Closed) Unresolved Item (50-361/79-28/02): One anchor bolt used to support electrical conduit U2 CA-X-F01 was not embedded to the depth required by the Construction Specification CS-C8. The contractor torque tested the anchor bolt and found that the bolt successfully passed the torque test. The contractor tested an additional 850 installed anchor bolts that had passed final inspection. Twenty-three were identified that were not installed in accordance with the specification. Only two of the 23 failed the torque test. The two that failed were removed and new bolts installed as required by the nonconformance report (NCR) No. E-1091. In addition, field supervisory personnel were directed to follow the requirements of the specification CS-C8 to insure all the anchor bolts are properly installed.
- d. (Closed) Followup Item (50-361/79-28/03): The concrete placement activities had the potential for nonconformance with the revolution limit of ASTM C94 as no limit was placed on the number of revolutions of the agitating blades.

The potential for nonconformance was discussed with SCE and it was concluded that the open top tub agitator would probably result in less slump loss from agitation caused by the rotating blades than the agitation caused by the rotating drum type agitator. However, SCE decided to limit the agitator operating speed of the open-top tub agitator truck to "slow" speed (less than 3 rpm) which would made the 1 1/2 hour time limit more restrictive than the 300 revolutions allowed by ASTM C94 for rotating drum type agitators.

The Construction Specification CS-C3 was revised by specification change notice (SCN) No. CS-186 to include the above requirement.

4. Followup on Licensee Identified Deficiency (10CFR50.55(e)) Report

Design Deficiencies in Containment Polar Crane Support Girder/Bracket Connection.

SCE issued a letter to R. H. Engelken from D. E. Nunn, dated May 23, 1979, describing a design deficiency in the design of the polar crane support for San Onofre Units 2 and 3. The design of the polar crane support would not withstand the forces of a design bases seismic event. Failure of the support could allow the polar crane to fall to the refueling floor.

On June 22, 1979, SCE issued the final report on this subject. The design was modified to an acceptable configuration to withstand the maximum design loads. Other work of the designer and of the design engineer that performed the original design review for the polar crane support was reviewed to determine whether other supports contained similar errors; no other errors were found. The need for independent design verification and the check of calculations for numerical accuracy as well as methodology was re-emphasized by the contractor with the two engineers involved and with all the project civil/structural design personnel.

The NRC inspector reviewed the design drawing describing the design changes to the polar crane support and found the drawing adequately reflected the design change committed to in the final report. The drawings reviewed were:

23072-3 Containment Structural Service Crane
23067-10 Containment Interior Structural Polar Crane Girder
 Support.

The actions taken by the licensee to remedy the deficiency was found to be appropriate. The inspector had no other questions.

5. Reactor Vessel and Internals Installation and Storage

Site activities for storage of the Units 2 and 3 reactor pressure vessels and internals were observed. Both vessels are installed and installation of Unit 2 internals is essentially complete. Installation of Unit 3 internals is in progress.

No items of noncompliance or deviations were identified.

6. Plant Tour

The inspector toured both Units 2 and 3 several times each week during the inspection report period. Particular attention was directed to observing work in progress, availability of supervision and quality control inspectors at the work areas, housekeeping and preservation of equipment.

No items of noncompliance or deviations were identified.

7. Management Interview

The inspector met with the licensee representatives (denoted in paragraph 1) on December 7 and 14, 1979. The scope of the inspections of the inspector's findings were discussed.