

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

REGION V

Report No. 50-361/79-30
50-362/79-28

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: November 1-30, 1979

Inspectors: R. J. Pate for 1/3/80
R. J. Pate, Resident Inspector Date Signed

Date Signed

Date Signed

Approved By: R. T. Dodds 1/3/80
R. T. Dodds, Chief, Engineering Support Section Date Signed
Reactor Construction and Engineering Support Branch

Summary:

Inspection on November 1-30, 1979 (Report Nos. 50-361/79-30 and 50-362/79-28)

Areas Inspected: Routine, unannounced inspection by the resident inspector of construction activities including: piping storage and welding, reactor pressure vessel and internals protection, part 21 followup, electrical cables and conduit procedures, licensee corrective actions on previous inspection findings, and general work in progress. The inspection involved 39 inspector-hours onsite by one NRC inspector.

Results: Of the five 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
- P. R. King, Quality Assurance Engineer
- =* D. E. Nunn, Manager, Quality Assurance
- J. H. Pantaleo, Quality Assurance Engineer
- * H. B. Ray, Project Management
- M. Rodin, Quality Assurance Engineer
- +* W. F. Rossfeld, Construction Lead QA Engineer
- 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 Supervisor
- 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 November 2, 1979
- =Denotes attendees at management meeting on November 9, 1979
- +Denotes attendees at management meeting on November 30, 1979

2. Construction Status

The licensee reported the site construction work is 75% complete as of November 29, 1979. The licensee's project management personnel estimated that the construction of Units 2 and 3 was 85% and 62% complete, respectively.

3. Licensee Action on Previous Inspection Findings

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

- a. (Closed) Noncompliance (50-361/79-22/04): Cable tension calculations for cable pull number EP-151 were not done in accordance with construction specification CS-E01. The cable was pulled through a conduit and then through a duct bank. The calculations for the pull through the conduit and the pull through the duct bank were not added to determine the need for a tension limiting puller as required by CS-E01.

The calculations were redone adding the results of the calculation for the tension through the conduit to the calculation for the duct bank as required by the specification CS-E01. The results were less than 95% of the maximum tension. Therefore, a tension limiting puller was not required. The tension calculations for all installed cable were reviewed by the licensee, and they determined that no other similar calculational error had been made. All the calculations that were done by the engineer that had done the calculation for pull number EP-151 were reviewed. No additional errors were found. To prevent others from making a similar error, the construction specification CS-E01 was clarified to make it more obvious to the reader that calculations for a continuous pull are additive even when a discontinuity such as a manhole or cable tray exist between the conduit runs. Also training sessions were held with Field Engineers responsible for cable pulling activities to review the clarification to the specification.

- b. (Closed) Unresolved Item (50-362/79-19/01): The motor for valve 3HV-9940-FC was found to have the 120 volt heater leads connected to the motor windings instead of to the heater as required.

The motor for valve 3HV-9940 was meggered and found to be acceptable. Apparently, no damage to the motor resulted from the connection error. To prevent reoccurrence of this error, the construction procedure WPP/QCI 610 was revised to require the correct heater connection to be verified by a QC Engineer.

- c. (Closed) Followup Item (50-361/78-05): Bolts remaining from specific applications were returned to the iron workers rigging area and stored in ten gallon buckets. During rains, moisture accumulated in these buckets and rust was evident despite attempts to control this with various coverings.

During a recent inspection, eight large studs (approximately 4 inches by four feet) were observed in the storage area along the east fence. These studs had been exposed to the weather for several weeks and had a light coating of rust. Close examination of the studs revealed only slight deterioration of the threads, and the nuts on each end of the studs were free to turn. Although the studs and nuts were not functionally damaged, continued exposure could cause excessive corrosion.

Review of current methods of storing bolts, nuts, and studs indicated that the structural bolts were no longer stored in ten gallon buckets at the site, but some of the larger bolts and studs were stored outside. The method of bolt and stud storage that departed from the requirements of ANSI Standard N45.2.2-1972 was discussed with the licensee. ANSI N45.2.2, Section 3.2.4 (3) requires "Items subject to detrimental corrosion, either internally or externally, shall be suitably protected". The licensee took prompt action to protect the studs identified, plus all other bolts and studs stored outside were suitably protected.

To prevent reoccurrence, the licensee management personnel committed to initiate weekly inspections of the outside storage areas to identify and correct improperly stored fastener material. The measures taken appeared appropriate to correct the potential problem.

4. Notification of Deficiencies (10CFR 50.55(e))

SCE Management personnel reported the following deficiencies:

- a. The materials used for the WKM parallel disc gate valves were not according to the specification. The valves have a pressure relief valve in the seat. Part of the pressure relief valve is made of carbon steel instead of stainless steel. Failure of the carbon steel part could cause the release of the 1/10 inch diameter by 1/2 inch long valve that could end up in the fuel spacer grid. Followup of this item will be done in a future inspection after SCE issues the final report in accordance with 10CFR 50.55(e). (50-361/79-30/01).
- b. The vendors used to calibrate the site test equipment were not recording the "as received" condition of the test equipment. Therefore, equipment which was out of calibration when received could have been used on tests for safety-related equipment. Followup on this item will be done in a future inspection after SCE issues the final report in accordance with 10CFR 50.55(e). (50-361/79-30/02).

5. TRW Mission Valves, High Carbon Content. (Part 21 Report).

TRW Mission Manufacturing Company issued a letter to the NRC on December 13, 1978 stating that they were making a report pursuant to Part 21 of 10CFR. They reported that they had provided safety class 2 and 3 valves to six purchasers which may have had material with a carbon higher than allowed by the material specification. SCE was the purchaser of 13 of these valves to be used in Units 2 and 3 at San Onofre.

The material in the valves at the site were subsequently tested by TRW Mission, and the material was found to be within the range allowed by the material specification.

The test report were reviewed by the inspector and found acceptable. The inspector had no additional questions in this area.

6. Electrical Cable and Conduit Procedures

The construction specification CS-E02, "Installation of Electrical Cables in Cable Trays" was reviewed. The specification states that a calibrated tension measuring device shall be used on all cable power pulls when it is determined that the tension of any cable in the pull will exceed 90% of its maximum allowable tension. However, the specification does not provide a method of determining the tension of the cables in the pull. SCE Management Personnel committed to measure the tension on all power pulls through cable trays to establish a data base for determining when the maximum allowed tension was being approached. SCE also decided to measure the tension of all power pulls of cable through conduit to verify the calculations presently being used to determine the tensions. The results of measured power pulls through trays and conduit will be reviewed at a future inspection. (50-361/79-30/03)

7. 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.

8. Reactor Coolant Pressure Boundary and Safety-Related Piping

The piping related activities listed below were observed to ascertain compliance with applicable construction specifications and procedures.

<u>Activity</u>	<u>System</u>	<u>Identification No.</u>
Storage	Component Cool Water	S2-CC-365-1A Sh.1
Storage	Chem. and Volume Control	2S-VC-001-00A
Storage	Safety Injection	S3-SI-075-3B Sh.1
Storage	Chilled Water	S3-CH-067-2
Welding	Feedwater	S2-FW-053-002
		Welds SA, SB, SC and SD

No items of noncompliance or deviations were identified.

9. 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.

10. Management Interview

The inspector met with the licensee representatives (denoted in Paragraph 1) on November 2, 9 and 30, 1979. The scope of the inspections of the inspector's finding were discussed. The licensee representatives committed to make weekly inspections of outside storage areas and to measure the tensions of cables being installed with a power puller as noted in paragraphs 3c and 6.