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

REGION V

Report No. 50-361/80-15
50-362/80-10

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

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

Facility Name: San Onofre Unit 2 and 3

Inspection at: Construction Site, San Diego County, California

Inspection conducted: August 26-29, 1980

Inspectors: J. H. Eckhardt, Reactor Inspector — 9/30/80 Date Signed

P. P. Narbut, Reactor Inspector — 9/30/80 Date Signed

Date Signed

Approved By: R. C. Haynes, Section Chief, Reactor Projects, Reactor Construction and Engineering Support Branch — 9/30/80 Date Signed

Summary:

Inspection on August 26-29, 1980 (Report No. 50-361/80-15 and 50-362/80-10)

Areas Inspected: Routine, unannounced inspection by regional based inspectors of construction activities including: licensee action on previous inspection findings and IE Circulars; installation of piping and component supports; electrical cable installation; internal wiring of transfer switch cubicle; and an allegation concerning concrete anchors. The inspection involved 50 onsite inspection hours by two NRC inspectors.

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

RV Form 219 (2)

DETAILS

1. Individuals Contacted

a. Southern California Edison Company (SCE)

*D. E. Nunn, Manager, Quality Assurance
*T. O. Gray, Construction Lead QA Engineer
*V. A. Gow, QA Engineer
L. D. Tipton, Project Engineering
D. Hoffman, Construction
C. K. Balog, Engineer
A. Chan, QA Engineer

b. Bechtel Power Corporation (Bechtel)

*J. E. Bashore, QA Manager
*J. E. Geiger, Project QA Supervisor
*J. H. McCarty, Project QC Manager
*W. D. Nichols, Project Field Engineer
*A. W. Coate, Assistant Project QC Engineer
W. A. Skillicorn, Lead QA Engineer
F. Banker, Field Engineer
J. McLean, QC Engineer
D. E. Robinett, Lead QC Engineer
D. Jeter, Piping Superintendent
C. A. Blum, Project Field QC Supervisor
N. Banos, Lead Nuclear Field Engineer
W. Ferguson, Lead Piping Construction Field Engineer
M. Hoffman, Subcontract Engineer
V. Haywood, Pipe Support Construction Field Engineer

*Denotes those attending exit interview.

2. Licensee Action on Previous Inspection Findings

The inspector examined the action taken by the licensee on the following items.

a. (Open) Followup Item (50-362/79-09/01) Piping Inspection Prior to Insulating

The inspector previously noted that the licensee's practices had not limited the time interval between the final inspections of the installed piping and the covering of the piping with insulation. The inspector's concern was that if the interval was long, contamination or mechanical damage could occur which may be undetected and covered over by the insulation.

Licensee personnel presented a Bechtel memorandum dated August 6, 1980 which indicated 1,900 feet of piping had been inspected just prior to release for insulation and had been found free of damage. Licensee personnel stated that they considered their controls on piping damage adequate.

The inspector determined that the 1900 feet of piping inspected was quality class 2 piping and the same damage controls applied to quality class 1 piping. The inspector examined five piping runs which had been released for insulation but were not part of the 1,900 feet inspected by the contractor personnel. The pipe runs were quality class 2 since no quality class 1 piping had been released for insulation. The pipe runs were portions of S2-1203 ML-070 -072, 074, 076 and -010. No damage was observed. The inspector observed insulation being installed on quality class 1 stainless steel pipe S2-RC-016 near hanger S2-RC-016 -H005. The insulation partially covered a weld joint which had ultrasonic examination couplant gel on the weld joint. The piping also had tape adhesive residue on it. It was subsequently determined that the piping had not been released for insulation; that the work in progress was fitup of insulation only. It was further determined that all insulation was treated as quality class 4 independent of the piping system quality classification. The contract for installing insulation does not currently include provisions for cleaning the piping. Bechtel personnel indicated the contract was currently being revised to include cleaning requirements for stainless steel piping. This item remains open pending observation of insulation installation on quality class 1 piping systems to verify piping cleanliness is satisfactory and the piping is free of unacceptable damage.

b. (Closed) Followup Item, Rotohammer Valve Operators

During a previous inspection the inspector had questioned the use of quality class 3 rotohammer valve operators on quality class 1 valves. During this inspection the licensee presented a Bechtel memorandum (File S023-712-A) dated August 6, 1980 which stated the reach rods are designed to withstand design basis earthquake loads and do not apply a significant load to the valves. Additionally, the letter stated that reach rod assemblies are not used on any valves that are required to be operated following a design basis earthquake or other design basis event.

The inspector had no further questions on this matter.

3. Licensee Action on IE Circulars

The status and licensee actions regarding the following IE Circulars were reviewed and the inspector's findings were as follows.

78-02 Re: Terry Turbine (HPCI) lube oil. Licensee action is considered complete.

78-04 Re: Installation errors that could prevent closing of fire doors. The licensee's normal construction practices will ensure correct installation.

78-08 Re: Environmental qualification of safety-related electrical equipment. This item is being covered as part of IE Bulletin 79-01A.

78-09 Re: Arcing of GE size 2 contactors. The licensee has determined that these contractors are not used at SONGS-2/3.

78-15 Re: Tilting disc check valves fail to close with gravity in vertical position. This issue was previously reported separately by the licensee for SONGS-2/3 pursuant to 10 CFR 50.55(e).

78-18 Re: UL fire test. No specific action was requested by this circular.

79-02 Re: Failure of 120 volt vital AC power supplies. This item is being carried by the licensee's NRC Action Item Report (NRCAIR) system to ensure implementation and followup.

79-04 Re: Loose locking nut on Limitorque valve operators. This item is covered by a SONGS-2/3 50.55(e) report.

79-05 Re: Moisture leakage in stranded wire connectors. Licensee action is considered complete.

79-10 Re: Pipefittings manufactured from unacceptable materials. This item is carried by the licensee on a Deficiency Evaluation Report to ensure action is completed.

79-11 Re: Design/construction interface problems. This item was previously reported separately by the licensee for SONGS 2/3 pursuant to 10 CFR 50.55(e).

79-12 Re: Potential diesel generator turbocharger problem. This item is being carried on the licensee's NRCAIR system to ensure vendor supplied kits are installed.

79-13 Re: Replacement of diesel fire pump starting contactors. New contactors have been installed.

79-17 Re: Contact problem in SB-12 switches on GE metalclad circuit breakers. The licensee has determined that this equipment is not used at SONGS-2/3.

79-19 Re: Loose impeller locking devices on Ingersoll-Rand pumps. This item was previously reported separately by the licensee for SONGS 2/3 pursuant to 10 CFR 50.55(e).

79-20 Re: Failure of GTE Sylvania relays. The licensee has determined that these relays are not used at SONGS-2/3.

79-22 Re: Stroke times for power operated relief valves (PORV). CE plants do not use PORVs, thus this circular is not applicable to SONGS-2/3.

79-23 Re: Motor starters and contactors failed to operate. The vendor is supplying retrofit kits to correct this problem. The item is being carried on the licensee's NRCAIR system.

79-25A Re: Shock arrestor strut assembly interference. The licensee has determined that this equipment is not used at SONGS-2/3.

80-05 Re: Emergency diesel generator lube oil addition and onsite supply. This item is being carried on the licensee's NRCAIR system.

80-11 RE: Emergency diesel generator lube oil cooler failures. This item is being carried on the licensee's NRCAIR system.

4. Installation of Piping and Component Supports

a. Review of Procedures

The inspector examined the following procedures for conformance to the FSAR commitments, requirements of the ASME B&PV Code, Section III, Subsection NF, 1974 Edition through Summer 1974 Addenda, and the manufacturer's installation and maintenance manuals for hydraulic and mechanical snubbers.

1) WPP/QCI 414, Revision 6, including PCN 23 through 27, "Fuel Fabrication and Installation of Pipe Supports for Project Class A-1 and P and Portions of the Fire Protection System".

2) CS-P-207, Revision 7, including SCN CS-238, "Pipe Support Field Fabrication and Installation".

No items of noncompliance or deviations were observed.

b. Observation of Work

The inspector examined the following supports with mechancial snubbers for conformance to drawing, weld sizes, weld appearance, cold settings, torqueing of fasteners, thread engagement, and snubber alignment:

S2-RC-016-H-010
S2-RC-016-H-004
S2-RC-016-H-008
S2-SI-045-H-015
S2-SI-045-H-011
S2-SI-044-H-006
S2-SI-015-H-017

Also, the inspector examined the hydraulic snubbers installed on Unit 2 reactor coolant pumps 001 and 003 for cold settings, liquid levels, leakage, damage and deterioration.

In addition, the inspector examined storage conditions of a hydraulic snubber at warehouse B intended for use on a Unit 2 steam generator.

No items of noncompliance or deviations were identified.

5. Electrical Cable Installation

Electrical cable installation was examined to ascertain compliance with CS-301, Installation of Electrical Cables in Conduit and Duct Banks. These included nine 600V control cables (0AJL21009 through 017) for the Unit 2 evacuation and paging system. These cables were installed in a conduit from the cable spreading room to amplifier room. Even though this was a hand pull, the tension was monitored during the pull because the calculated expected tension exceeded 90 percent of the maximum allowable tension. During the pull the maximum tension measured was only 60 percent of the maximum allowable. In addition, the cable pull cards and calibrations records of the dynamometer used were reviewed.

No deviations or items of noncompliance were identified.

6. Internal Wiring of "Third-of-a-Kind" Load Transfer Switch

The internal wiring of the 4KV Transfer Switch Cubicle 2D005 for the "third-of-a-kind" (swing) component cooling water pump MP0025 was examined. This transfer switch cubicle was manufactured by Golden Gate Switchboard Company. It was observed that the channel A/B control cable for the motor heater is routed for approximately 18 inches with the channel A control cable in the channel A portion of the cubicle. Thus, when the switchboard is aligned from channel B power, there is a lack of 6 inch separation between the channel A and B circuits which is not in accordance with IEEE-384 requirements. This item was discussed with the licensee and nonconformance report F-292 was written.

This item is considered unresolved pending further review of separation requirements for third-of-a-kind switchgear (50-361/80-15/01).

7. Allegation Concerning Concrete Anchors

a. Allegation

On August 26, 1980 the NRC Senior Operations Resident Inspector received an anonymous telephone call concerning the installation of concrete anchor bolts for pipe supports. Specifically, it was alleged that some installed "Hilti Kwik Bolt" concrete anchors were too short and the manufacturer's alpha-numeric symbol indented on the end of the bolt (designating length) was changed to indicate correct length. The caller named two individuals supposedly involved in this practice. On August 28, 1980 a second telephone call was received from the same caller who alleged that a 1-inch diameter anchor was installed too deep in a floor and that a chain-fall was then attached to the anchor and it was pulled up to the correct depth. The alleger stated that this activity was not documented. The caller stated that further contact would be made to identify the support number associated with this anchor bolt.

b. Investigation

Work records of the individuals named were reviewed for the period of July 1, 1980 through August 28, 1980. Pipe supports and restraints that these individuals were associated with during this period were identified. The supports that were anchored with "Hilti's" were examined with specific inspection of the length symbols for indication of tampering or modification. This included ten pipe supports of Quality Class 1, 2, and 3 in unit 2 containment. In addition, approximately 200 Hilti's on supports in the vicinity of the ones specifically examined were inspected. No instances were identified where the length symbol had been changed.

The allegation and inspection was discussed with the licensee. They indicated that a larger sample of Hilti's would be examined to attempt to determine whether there is validity to the allegations. This is considered a followup item pending further investigation. (50-361/80-15/02)

8. Unresolved Items

Unresolved items are matters about which more information is required to ascertain whether they are acceptable items, items of noncompliance or deviations. An unresolved item disclosed during the inspection is discussed in Paragraph 6.

9. Management Interview

The inspectors met with licensee representatives (denoted in paragraph 1) on August 29, 1980. The scope of the inspection and the inspectors' findings as noted in this report were discussed.