

U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report No. 50-206/82-27
50-362/82-23

Docket No. 50-206, 50-362 License No DPR-13, CPPR-98 Safeguards Group _____

Licensee: Southern California Edison Company
P. O. Box 800
2244 Walnut Grove Avenue
Rosemead, California 91770

Facility Name: San Onofre Units 1 and 3

Inspection at: San Onofre Nuclear Generating Station, San Clemente, California

Inspection conducted: September 27 - October 1, 1982

Inspectors: *G. Hernandez* 11/5/82
G. Hernandez, Reactor Inspector Date Signed

W. J. Wagner 11/5/82
W. J. Wagner, Reactor Inspector Date Signed

Approved by: *D. F. Kirsch* 11/5/82
D. F. Kirsch, Chief Date Signed
Reactor Projects Section No. 3

Summary:

Inspection on September 27 - October 1, 1982 (Report Nos. 50-206/82-27 and 50-362/82-23)

Areas Inspected: Routine, unannounced inspection by regional based inspectors of construction activities involving licensee action on 50.55(e) items, I.E. bulletins, Unit 1 seismic modifications, previous enforcement and inspector followup items, and inspector review of quality assurance implementing procedures. The inspection involved 59 onsite inspection hours by two NRC inspectors.

Results: No items of noncompliance or deviations were identified.

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DETAILS

1. Individuals Contacted

a. Southern California Edison Company (SCE)

- *G. P. Vaslos, QA Engineer
- *D. B. Schone, Project QA Supervisor, Units 2/3
- D. C. Stonecipher, Construction QA Supervisor, Units 2/3
- *C. R. Horton, Startup QA Supervisor, Units 2/3
- *V. A. Gow, QA Engineer
- *G. T. Gibson, Lead Compliance Engineer
- **P. A. Croy, Manager, Configuration Control & Compliance
- **E. Gulbrand, Assistant Manager, Maintenance
- **G. W. McDonald, QA/QC Supervisor, Unit 1
- **N. R. Dickinson, Construction Supervisor
- **R. Montroy, QA Engineer
- **D. K. Nelson, Project Manager, Unit 1
- H. A. Timmons, QA Engineer
- R. Sarouhan, QA Engineer
- N. M. Ferris, QA Engineer
- J. M. Francis, Compliance Engineer
- C. C. Warren, QA Engineer

b. Bechtel Power Corporation (Bechtel)

- *J. W. Sheppard, Project QA Supervisor
- J. H. McCarty, Project QA Manager
- J. A. MacKinnon, Project Engineering Coordinator
- **G. L. Renfeldt, Project QA Engineer
- **R. M. Nilius, Project QC Engineer
- G. A. Bishop, Lead Field Civil Engineer
- T. Blumfield, Lead Field Welding Engineer

*Denotes those attending Unit 3 exit interview on September 29, 1982.

**Denotes those attending Unit 1 exit interview on October 1, 1982.

2. Licensee Action on 10 CFR 50.55(e) Items, Reportable Construction Deficiencies - Unit No. 3

The following 10 CFR 50.55(e) items were examined to determine the adequacy of the licensee's corrective action:

a. Improperly Sized Wire Connectors on Radiation Monitoring Devices-Unit No. 3

The inspector reviewed startup Nonconformance Report Number 0650-J for proper disposition, QA review and acceptance. The NCR indicated that installation of the correct size pin connectors was accomplished in accordance with the licensee's corrective action. This was verified by visual examination of the replaced connectors for Units 2 and 3 in-common as reported in I.E. Inspection Report Numbers 50-361/81-34 and 50-362/81-09.

This item is closed.

b. Unit No. 3 Main Steam Dump to Atmosphere Valves

During testing of the Unit #2 main steam dump to atmosphere valves, the actuation spring load was determined to be insufficient, preventing the valves, 2HV8419 and 2HV8421, from closing upon loss of control air pressure, as required under certain postulated accident conditions. This condition was considered suspect for Unit 3, valves nos. 3HV8419 and 3HV8421.

Resolution was accomplished by the addition of a second spring within the actuator of the subject valves. The actual installation was performed in accordance with the disposition of Southern California Edison Nonconformance Report (NCR) No. S023-P-255 for Unit 2 and Bechtel Startup NCR No. 0702-J for Unit 3. Also, vendor drawing No. S023-503-7-2-117-0, Revision 0, has been revised to show the additional spring.

This item is closed.

3. Licensee Action on Previous Inspection Findings-Unit No. 1

(Open) Unresolved Item (50-206/82-25/01): Beam Improperly Attached to Clip - Unit 1

The inspector reviewed the status of NCR No. S01-P-1155 which addresses the condition of the insecure wide flange beam identified during the last NRC inspection. At that time, the licensee indicated that all quality documents associated with this item, such as drawings and inspection reports, would be retrieved and made available for NRC review (NRC Report No. 50-206/82-25).

The inspector was informed that no action had been taken on this item due to a misunderstanding caused by the wording of the NCR. Discussions with licensee quality assurance personnel resulted in issuance of Revision 1 to NCR S01-P-1155. At the exit interview the inspector emphasized the need to review these documents in order to determine the status of this item. This item will be examined during a subsequent inspection.

4. Licensee Action on Previous Inspection Findings - Unit No. 3

- a. (Closed) Noncompliance (50-362/82-11/01); Upper seismic restraints not in accordance with drawings.

The licensee's response to the item of noncompliance was submitted by letter dated July 28, 1982.

The inspector examined the licensee's corrective action and observed that the corrective actions appeared to be accomplished as stated. In addition, the licensee performed a 100% visual inspection of all Unit 3 equipment seismic restraints and by interoffice memo No. IOM P-794, dated 5/13/82, all field engineers were instructed to assure that all work is accomplished in accordance with approved drawings and/or procedures.

This item is closed.

- b. (Closed) Followup Item (50-362/82-11/03): Audit of civil/structural drawings to assure compliance with AWS.

As a result of the initial questions arising from findings of the Unit 3 seismic restraints (Noncompliance No. 50-362/82-11/01), the inspector indicated that an audit of civil/structural drawings was necessary to assure that drawings issued after 10-23-79 complied with AWS D1.1 requirements when a prequalified joint design is utilized.

In July 1982, the licensee performed an audit of all civil drawings which detail seismic restraints to permanent plant equipment. This audit identified one undersized weld which had been added to civil drawing no. 23205, by Field Change Request (FCR) No. C-2623. Accordingly, a review of all civil FCR's was undertaken and 117 civil FCR's were identified which had discrepant weld sizes (out of 4,332 civil Field Change Requests reviewed).

These discrepant welds were documented on Nonconformance Reports Nos. C-3093, S023-P-580, SE-F-1071, and on Corrective Action Reports Nos. F-1442 and F-1443. The licensee's corrective action consisted of:

- (1) All Civil/Structural design engineering personnel on SONGS 2 & 3 were instructed individually to adhere to the requirements of AWS D1.1, Table 2.7.
- (2) Documented training sessions were held for appropriate field engineering and quality assurance personnel, emphasizing the requirements and details of Welding Procedure P1-A-LH and Welding Code AWS D1.1, Table 2.7.
- (3) The Project Procedure (WPP/QCI-018), which defines the requirements for the processing and approval of FCRs, has been totally revised to clarify the responsibility for checking the FCR for accuracy and completeness prior to sign off.

In addition, the inspectors, on September 28, 1982, held discussions with cognizant licensee personnel, Bechtel civil/structural and Bechtel Materials and Quality Services engineers on the possible metallurgical and design aspects of the discrepant welds. This discussion provided assurance that the licensee had taken all necessary precautions to assure that the discrepant welds are structurally sound and that the design had not been jeopardized.

This item is closed.

5. Licensee Action in Response to I.E. Bulletins

The following I.E. Bulletins were reviewed by the inspector to determine the promptness and thoroughness of licensee actions to correct or avoid those known or potential deficiencies:

a. Bulletin No. 78-12: Atypical Weld Material in Reactor Pressure Vessel Welds.

By letter, dated June 18, 1979 and the references contained therein, the licensee provided a certification from their NSSS vendor, Combustion Engineering, attesting that the record search required by the subject bulletin had been completed. In addition, a generic report covering all reactor vessels manufactured by Combustion Engineering had been submitted to the NRC on June 8, 1979, which included all the required vessel weld material information.

This bulletin is closed.

b. Bulletin No. 78-14: Deterioration of Buna-N Components in ASCO Solenoids.

This bulletin addresses the deterioration of Buna-N components in ASCO solenoid valves. The action taken by the licensee has been reviewed during two previous inspections, (I. E. Inspection Report Nos. 50-361/79-28 and 50-362/80-05). The licensee has drafted a maintenance procedure, "MPMP-540 Maintenance Procedure for ASCO Valves," which includes a list of the affected valves and a replacement schedule for the Buna-N components. This procedure appears to meet the intent of the bulletin.

This bulletin is closed.

- c. Bulletin No. 79-04: Incorrect Weights for Swing Check Valves Manufactured by Velan Engineering.

The licensee's response letter, dated May 24, 1979 stated that a review of all documentation has determined Velan Engineering has not supplied, nor are they scheduled to supply the subject valves for use at San Onofre Units 2 or 3. Therefore, this bulletin is not applicable to this project.

This bulletin is closed.

- d. Bulletin No. 79-07: Seismic Stress Analysis of Safety Related Piping.

The licensee's response letter, dated May 23, 1979, stated that the bulletin identified methods for seismic analysis of safety-related piping were not used for either the balance of plant or the nuclear steam supply system.

This bulletin is closed.

- e. Bulletin No. 79-11: Faulty Overcurrent Trip Device in Circuit Breakers for Engineered Safety Systems.

The licensee's response letter, dated June 29, 1979, stated that none of the subject circuit breakers (Westinghouse Model Nos. DB-50 and DB-75) are in use, planned for use, or in spares at San Onofre Units 2 or 3. In addition, the Architect/Engineer has been instructed to ensure that the subject breakers are not purchased in the future.

This bulletin is closed.

- f. Bulletin No. 79-24: Frozen Lines

By interoffice memo, dated October 10, 1979, the licensee related that discussions with the NRC had confirmed that for Southern California Edison (SCE) no response to this bulletin was required. The memo referred to the San Onofre FSAR, Section 2.3.1.1 which indicated that temperatures below freezing are rare in the general vicinity of the site and, therefore, the possibility of frozen lines is virtually non-existent.

This bulletin is closed.

- g. Bulletin No. 80-18: Maintenance of Adequate Minimum Flow thru Centrifugal Charging Pumps Following Secondary Side High Energy Line Rupture.

The licensee states in a memo, dated August 11, 1980, that the Combustion Engineering NSSS, utilized at San Onofre Units 2 and 3, does not use centrifugal charging pumps or power operated relief valves and, further, that no minimum flow control valves are used on any ECCS pumps. The inadequate minimum flow problem described in this bulletin is not applicable to the site.

This bulletin is closed.

- h. Bulletin No. 81-01: Surveillance of Mechanical Snubbers.

A licensee memo, dated March 11, 1981, states that as a result of discussions with the NRC and the subsequent revision to the bulletin, this bulletin was determined to be not applicable to the site.

This bulletin is closed.

6. Structural Concrete - San Onofre Unit No. 1

Review of Quality Records

The quality records for the Turbine Building's Foundation A and B concrete placements at elevation (-)1'6" to (+)14'0" were reviewed for compliance to the applicable specifications, procedures, codes and standards. The records reviewed included preplacement, placement, post-placement records, batch plant tickets, and a summary of concrete test reports. This review identified the following:

- a. A review of the summary of concrete test reports performed by U. S. Testing Company indicated several instances where the concrete slump was not in compliance with the requirements.

However, because the slump losses were in the conservative direction, that is, the only probable consequences are in concrete consistency/workability, this is not considered an item of noncompliance. In addition, the slumps documented on the test reports indicated that the water to cement ratios encountered would provide for an actual concrete compressive strength which exceeded design requirements. At the exit interview, on October 1, 1982, licensee personnel stated that the requirements would be changed to specify only a maximum concrete slump with no minimum indicated. The inspector will review the concrete specification during a future inspection to assure that licensee commitments have been implemented. This is a followup item. (50-206/82-27/01)

- b. During the above reviews the inspector observed that Batch ticket no. 51594 indicated that two slumps were taken, one at 6:32 A.M. which was 1½" and one at 6:44 A.M. which was 4½". This non-uniformity of slumps could indicate a problem with the batching/mixing or the testing methods. The variance in slump, of which this is only one example, is of concern and is an item that will be examined during a future inspection to assure that the batching/mixing and testing techniques are in compliance with the site procedures, specifications and the ACI Code. In addition, the compressive test results will be reviewed to assure that test results are in compliance with design strength requirements. This is a followup item. (No. 50-206/82-27/02)

7. Safety Related Structures (Welding) - Review of Quality Assurance Implementing Procedures - Unit 1

The inspector reviewed the following specifications for compliance with applicable codes:

- a. Specification No. 300 PD-001, Rev. 0, of August 3, 1982 "Specification for Safety Related Pipe Support Field Fabrication and Installation."
- b. Specification No. CS-C16, Rev. 3 of March 1980 "Visual Inspection Criteria for Structural Steel and Miscellaneous Metal Welding to Meet Design Requirements."

Section 5.6.1.11 of Specification No. 300 PD-001 and Section 3.3.7 of Specification No. CS-C16 contain the following instructions:

"Arc strikes are acceptable provided that the craters, (1) do not contain cracks as determined by visual inspection, and (2) maximum size does not exceed 3/8 inch plan nor 1/16 inch profile. Arc strikes shall be free of any foreign deposits which might interfere with the performance of visual examination." The inspector's concern with this approach to arc strikes, as expressed to the licensee, is as follows:

- (1) The inspector requested information regarding the qualification of inspectors who perform such visual examinations. Cracks may not be detected if visual examination is performed three feet away with the unaided eye. Also, oxides may fuse into the crack thus inhibiting detection.
- (2) AWS D1.1 (3.10) states "Arc strikes outside the area of permanent welds should be avoided on any base metal. Cracks or blemishes caused by arc strikes shall be ground to a smooth contour and checked to insure soundness." The inspector requested information clarifying the licensee's criteria for determining blemish acceptability. Since arc strikes represent a melted region on the base metal it does not appear unreasonable to expect that a crack or blemish may occur.

The inspector emphasized that arc strikes are important if found on structural steel supporting quality class 1 components. This is a follow-up item. (50-206/82-27/01).

8. Management Interview

On September 29, 1982 (for Unit No. 3) and October 1, 1982 (for Unit No. 1), the inspectors met with licensee representatives denoted in paragraph 1. The scope of the inspection, the observations, and the findings of the inspectors were discussed. The licensee acknowledged the inspector's concerns.