

UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION V

SUITE 202, WALNUT CREEK PLAZA  
1990 N. CALIFORNIA BOULEVARD  
WALNUT CREEK, CALIFORNIA 94596

Docket No. 50-362

APR 7 1977

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

Attention: Mr. J. B. Moore  
Vice President

Gentlemen:

Subject: NRC Inspection of San Onofre Unit 3

This refers to the inspection conducted by Messrs. W. G. Albert and J. H. Eckhardt of this office on March 22-25, 1977 of activities authorized by NRC Construction Permit No. CPPR-98, and to the discussion of our findings held by Mr. Albert with H. B. Ray, R. R. Hart, and other members of your staff at the conclusion of the inspection.

Areas examined during this inspection are described in the enclosed inspection report. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspector.

No items of noncompliance with NRC requirements were identified within the scope of this inspection.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosed inspection report will be placed in the NRC's Public Document Room. If this report contains any information that you believe to be proprietary, it is necessary that you submit a written application to this office, within 20 days of the date of this letter, requesting that such information be withheld from public disclosure. The application must include a full statement of the reasons why it is claimed that the information is proprietary. The application should be prepared so that any proprietary information identified is contained in an enclosure to the application, since the application without the enclosure will also be placed in the Public Document Room. If we do not hear from you in this regard within the specified period, the report will be placed in the Public Document Room.



Southern California  
Edison Company

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Should you have any questions concerning this inspection, we will be glad to discuss them with you.

Sincerely,



G. S. Spencer, Chief  
Reactor Construction and  
Engineering Support Branch

Enclosure:  
IE Inspection Report  
No. 50-362/77-02



## Summary

### Enforcement Action

None

### Licensee Action on Previously Identified Items of Enforcement

Not applicable

### Other Findings

#### A. Project Status

The project remains on schedule with work paced approximately one year behind corresponding activity on Unit 2. (Paragraph 2 of Details)

#### B. Heating, Ventilation and Air Conditioning (HVAC) Programs

1. University Mechanical & Engineering Co. (UMEC) Program - The implementation of this contractor's QA program was found satisfactory. (Paragraph 3 of Details)
2. Air Conditioning Co., Inc. (ACCO) Program - This contractor's QA program was not completely defined by applicable procedures. Revised procedures were under development and will be completed within a month. (Paragraph 3 of Details)

#### C. Items from 10 CFR 50.55(e) Reports

1. Sullivan Bolt Problem - The dye penetrant examination of the Schmidt steel nuts for forging defects has been completed and the item is closed. (Paragraph 4 of Details)
2. Nelson Stud Problem - An open question regarding the statistical treatment of data was resolved and the item is closed. (Paragraph 5 of Details)
3. Two-Inch Carbon Steel Seamless Pipe - The final 50.55(e) report on this problem was received by IE:V during the course of the inspection. Resolution of the problem remains to be examined. (No reference in Details)

4. SS Liner Plant Cracking - Full examination of this problem remains to be completed. An interim report has been received by IE:V. Final report is due June 30, 1977. (Paragraph 6 of Details)
5. Loss of Guide Plugs in Steam Generators - A letter was sent to the licensee requesting further information on corrosion potential of mechanically damaged inconel tube surfaces. A response was requested by April 15, 1977. (No reference in Details)

D. Bechtel Procedure Schedule

It was found that implementing procedures were being prepared as required by the status of work. (Paragraph 7a of Details)

E. Bechtel Electrical Procedures

New electrical quality control instructions were examined and found satisfactory. (Paragraph 7b of Details)

F. Design Review Sample Selection

At a management meeting in the corporate offices, SCE described a program under which they would review certain design disclosure documents which were not among those having been designated for SCE approval. This action closes out the last open item from the mid term QA inspection. (Paragraph 8 of Details)

Management Interview

At the conclusion of the site inspection the results were discussed by the inspector with H. B. Ray, R. R. Hart, other SCE personnel and H. K. Williams of San Diego Gas & Electric Company. Discussion included items under "Other Findings" above and schedules for the movement and installation of Unit 2 NSSS components. Also discussed was a question concerning the unavailability at the site of material certification records for containment liner plate steel and the licensee's plans for the eventual receipt of such records which are being maintained by CB&I at off-site facilities but subject to SCE audit. The licensee stated that the subject would be examined. (Paragraph 10b of Details)

The schedule of licensee site quality assurance audits was also discussed. The inspector stated that site QA audits during the month of March 1977 were practically non-existent compared to previous months. The licensee stated that necessary actions were being taken to bring audit activities back on schedule. (Paragraph 13 of Details)

## Details

### 1. Individuals Contacted

#### Southern California Edison Company (SCE)

P. A. Croy, QA/QC Supervisor  
H. B. Ray, Manager, Quality Assurance  
D. Martin, Manager, Project Engineering  
W. Schwab, Construction Engineer  
R. R. Hart, Project Construction Supt.  
B. Cooper, QA Engineer  
T. Garven, Inspector  
E. Scherba, Lead Inspector  
D. Schone, Civil Structural Design Engineer  
S. Alexiu, QA Engineer  
M. F. Person, Engr. Trainee  
K. L. Baldwin, QA Engineer  
K. Baskin, Manager, Generation Engineering Services  
G. Haynes, Chief Nuclear Engineer

#### Bechtel Power Corporation, Los Angeles (Bechtel) (AE)

H. A. Davis, Lead Civil QC Engineer  
N. P. Besich, Lead Welding QC Engineer  
C. A. Blum, QA/QC Supervisor  
A. Lopez, Engineering Group Leader (Civil)  
G. Taylor, Material Supervisor  
H. Granquist, QC Engineer  
W. Vatcher, QC Welding  
P. McGrath, Concrete Test Lab Coordinator  
W. R. Biscoe, QC Engineer  
F. Henderson, QA Engineer  
J. R. Hunter, Project QA Engineer  
R. J. Kosiba, Project Engineer  
F. J. Sherman, QA Engineer

#### University Mechanical & Engineering Co. (UMEC)

W. E. Underwood, QA Manager  
R. McAskill, QA Engineer  
D. Dukes, Inspector  
M. Bales, Foreman  
M. Schulze, Project Manager

Air Conditioning Co., Inc. (ACCO)

L. C. Raymond, QA Manager  
C. Raymond, Project Manager

Chicago Bridge & Iron (CB&I)

G. Silva, QA Engineer  
W. Kemp, Welder

Peabody Testing Co. (Peabody)

M. Sibley, QA Manager  
C. Sibley, Inspector

2. Project Status

At the time of inspection, site construction for both units was estimated to be 32% complete. Unit 3 construction appears to be paced approximately one year behind Unit 2 at this time. Dome panel installation for Unit 3 containment was in progress and the polar crane had been set in place.

3. Heating Ventilation Air Conditioning (HVAC) Program

a. UMEC Program

The UMEC QA program was reviewed and duct fabrication work at the manufacturing site (Jap Mesa) was observed for program implementation. UMEC appeared to be performing their QA program satisfactorily, and the inspector had no further questions.

b. ACCO Program

The ACCO QA program was reviewed. It was determined that this contractor's QA program is not yet completely defined by applicable procedures. Revised procedures (under development) will be completed within a month. This item will remain open.

4. Sullivan Bolt Problem

The inspector observed the dye penetrant examination of the Schmidt Steel nuts for forging defects. The licensee later reported that the examination had been completed with no defects detected. The inspector had no further questions pending an examination of inspection records.

5. Attachment of Spot Welded Anchors (Nelson Studs)

A 50.55(e) report concerning inadequate quality controls over welding of Nelson Studs to structural steel members was reviewed by the inspector. The report included a statistical study used to evaluate the problem. A question from the inspector concerning the treatment of the statistical data was discussed with AE representatives at a meeting in the AE's offices. The inspector was satisfied that the study established the integrity of individual beams in any area rather than merely addressing the probability of having a percentage of good studs. The item is considered closed.

6. Stainless Steel Liner Plate Cracking

An interim 50.55(e) report concerning the cracking problem has been received by IE:V and is being reviewed. The licensee and AE are continuing to examine this problem and a final report is due June 30, 1977.

7. Bechtel Procedures

a. Schedules

The preparation of Bechtel WPP/QCI's was examined against ongoing project activities. No problems were noted.

b. Electrical Procedures

Recently completed procedures for the installation of electrical cable were examined and found satisfactory.

8. Design Review Sampling Selection

During the mid term QA inspection the inspector had noted that certain design disclosure documents were subject to SCE review and approval but that most design documents received no review by SCE and were treated differently. The inspector noted that SCE had no direct assurance of design quality other than QA audits for a large body of design documents. In a meeting with SCE engineering personnel SCE described a program for selecting and reviewing certain design disclosure documents. These would represent various design disciplines and involve direct review of the design by a team of SCE engineers in the Bechtel offices. The inspector found the program to be a satisfactory resolution of his concern.



9. Containment Concrete

Concrete quality records (batch, preplacement and post placement) for the following two containment placements were reviewed:

- a. South isolation and pressure relief valve support, placement number 23-583. 913-A of 2/18/77.
- b. Interior southwest walls and shaft, placement number 23-514, 519-A of 2/25/77.

No items of nonconformance were identified.

10. Containment Structural Steel

a. Observation

Installation and erection of containment dome panels was observed. The inspector observed storage, installation, welding, vacuum box testing, and inspection effort. No items were identified which did not conform to procedures, accepted practices or requirements.

b. Records

Installation records for the containment dome panels were examined. The records included filler metal certification, shop release for shipment checklists, installation checks (ring 9), and vacuum box records. It was noted that no material certification records for the panels were available at the site; the CB&I Quality Assurance engineer indicated that the records were available at the manufacturing facility. This matter was discussed at the exit interview.

11. Containment (Welding)

Quality records for welds of the containment polar crane were examined. The records included weld history, NDE, filler metal control, weld repair, and nonconformance reports. Also, radiographs of the welds were viewed. All records appeared to be satisfactory.

12. Safety Related Structures (Steel Structures and Welding)

a. Steel Structures

Quality records (Construction Installation Data Reports) for two beams in the Auxiliary/Radwaste Building were reviewed. Also, the working installation drawing was reviewed. The records were compared with the applicable Work Plan Procedure/QC Instructions and no items of noncompliance with these instructions were noted.

b. Welding

Quality records for three welds on HVAC support steel in the Auxiliary Building were reviewed. The records included weld procedure, filler metal withdrawal authorization, and inspection records. No items were noted which did not conform with procedures and accepted practice.

13. Quality Assurance Audits

Licensee Quality Assurance Audit Reports for audits performed since January 1, 1977 were reviewed. The reports covered two audits performed in January, two in February, and none in March although the licensee indicated that one audit had been performed in March and the report was in the final stages of review. The licensee indicated that an increased number of audits were scheduled in the future. Based on the audit reports, the inspector considers the audits that were performed to be well planned and comprehensive. However, this item will remain open pending review of future audits.

14. Bechtel Nonconformance Reports

A sample of nonconformance reports (24 items) was examined. The report system appeared to be functioning according to procedures.

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*Central Files*

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Docket No. 50-362

APR 7 1977

MEMORANDUM FOR: G. W. Roy, Chief, Field Coordination and  
Enforcement Branch, IE:HQ

FROM: G. S. Spencer, Chief, Reactor Construction and  
Engineering Support Branch, IE:V

SUBJECT: SOUTHERN CALIFORNIA EDISON COMPANY  
SAN ONOFRE UNIT 3

Enclosed is a report on a routine construction inspection at the subject facility. This inspection was conducted on March 22-25, 1977 and was unannounced. No items of noncompliance were identified by the NRC inspector. One item of potential generic interest was identified by the licensee in a 50.55(e) report. This report, concerning problems with two-inch seamless steel tubing, has been referred to IE:IV LCVIP for whatever action they may deem appropriate.

*G. S. Spencer*

G. S. Spencer, Chief  
Reactor Construction and  
Engineering Support Branch

Enclosures:  
Ltr to SCE w/IE Inspection  
Report No. 50-362/77-02

