UNITED STATES
ATOMIC ENERGY COMMISSION
DIVISION OF COMPLIANCE
REGION V
2111 BANCROFT WAY
BERKELEY, CALIFORNIA 94704

TELEPHONE: 841-5121
EXT. 651

October 13, 1971

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

Docket Nos. 050-0361
050-0362

Attention: Mr. Jack B. Moore
Vice President

Gentlemen:

This refers to the inspection conducted by R. T. Dodds of this office on September 21-22, 1971, of quality assurance activities relating to the San Onofre Units 2 and 3 power reactor project, and to the discussion of our findings held by Mr. Dodds with Mr. J. B. Moore and Mr. M. Wilms of your staff at the conclusion of the inspection.

Areas examined during this inspection were limited to the verification of the action taken to correct the deficiencies in the proposed quality assurance program that were identified during the initial quality assurance inspection that was conducted in February 1971. Within these areas, the inspection consisted of selective examinations of procedures and representative records and interviews primarily with Quality Assurance personnel.

No deficiencies were identified within the scope of this inspection.

It is our understanding that the proposed Quality Assurance Manual will be approved and issued for implementation by November 1, 1971.

No reply to this letter is necessary, but should you have any questions concerning this inspection, we will be glad to discuss them with you.

Sincerely,

R. W. Smith
Director

bcc: J. B. Henderson, CO (5)
A. Giambusso, CO
R. H. Engelken, CO
L. Kornblith, CO
DR Central Files

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October 13, 1971

J. B. Henderson, Chief
Reactor Construction Branch
Division of Compliance, Headquarters

SOUTHERN CALIFORNIA EDISON COMPANY (SAN ONOFRE UNITS 2 AND 3)
DOCKET NOS. 050-361/362

Attached is our report of a followup inspection on September 21-22, 1971, at SCE's General Office in Rosemead, California, for the purpose of reviewing corrective action on deficiencies identified during the initial QA inspection.

The proposed SCE QA manual has been modified to reflect our previous observations. Mr. Moore, SCE Vice President, stated that the proposed manual will be approved and distributed for implementation by November 1, 1971.

R. T. Dodds for
G. S. Spencer
Senior Reactor Inspector

Enclosure:
CO Inspection Rpt No 71-02
by R. T. Dodds

cc w/encl:
E. G. Case, DRS (3)
R. S. Boyd, DRL (2)
R. C. DeYoung, DRL (2)
D. J. Skovholt, DRL (3)
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U. S. ATOMIC ENERGY COMMISSION
DIVISION OF COMPLIANCE

REGION V

INSPECTION REPORT

CO Report No. 050-0361/71-02
050-0362/71-02

Subject: Southern California Edison Co.
San Onofre 2 and 3

Docket No.(s) 050-361/362

License No.(s) CP Pending

Location: San Clemente, California

Priority: _____

Category: A

Dates of Inspection: September 21-22, 1971

Dates of Previous Inspection: February 5, 22-26, & April 8, 1971

Type of Licensee: 1140 Mwe PWR (Combustion Engineering)

Type of Inspection: Announced, Followup QA Inspection

Principal Inspector: R. T. Dodds
R. T. Dodds, Reactor Inspector — Date: 10/13/71

Accompanying Inspectors: None — Date: _____

_____ — Date: _____

Other Accompanying Personnel: None

Reviewed By: RT Dodds for
G. S. Spencer, Senior Reactor Inspector — Date: 10/13/71

Proprietary Information: None

SECTION I

Enforcement Action

None

Licensee Action on Previously Identified Enforcement Matters

None required

Unresolved Items

None

Status of Previously Reported Unresolved Items

The deficiencies identified during the initial QA inspection in February 1971 have been satisfactorily corrected. (Paragraphs 3. thru 14.)

Persons Contacted

J. B. Moore	-	Vice President
M. Wilms	-	Quality Assurance Engineer
A. Delgrosso	-	Quality Assurance Engineer
J. E. Arnold	-	Document Control Clerk
E. Morton	-	Chief Librarian

Management Interview

The results of the inspection were discussed with Messrs. Moore and Wilms at the conclusion of the inspection. The inspector acknowledged the action taken to correct the QA program deficiencies that were identified during the initial QA inspection. Mr. Moore stated that the proposed Quality Assurance Manual would be approved and issued for implementation by November 1, 1971.

SECTION II

Additional Subjects Inspected, Not Identified in Section I, Where No Deficiencies or Unresolved Items Were Found

1. Items Examined During Inspection

   Proposed Quality Assurance Manual (QAM) - Revision No. 4 September 11, 1971.

   Librarian records for the procurement of codes and standards.

Details of Subjects Discussed in Section I

2. General (Status of Quality Assurance Manual)

The proposed QAM has been revised four times and was being reviewed for comment prior to its final approval at the time of the inspection. Mr. Moore stated that the manual would be approved and issued for implementation by November 1, 1971.

The corrective action for the deficiencies identified during the initial QA inspection is discussed below in paragraphs 3-14.

3. Criterion I - Organization

a. Deficiency - The organization charts showed the Quality Program Committee reporting to the Senior Quality Assurance Engineer, rather than to the Vice President of Engineering and Construction, as stated in the PSAR.

Corrective Action - Exhibit 1.1 in the QAM shows the latest reorganization which is now consistent with the PSAR.

b. Deficiency - SCE QA-QC personnel and organizations did not have "stop-work" authority for vendor or construction activities related to the San Onofre project.

Corrective Action - Section 1.2.9 of the QAM now gives "stop-work" authority to SCE designated personnel on any job as they deem necessary to obtain an acceptable quality product. Section 1.4.5.5.5.4 specifically gives stop-work authority to the QC Engineers.

c. Deficiency - SCE Quality Control Engineers were not fully independent of the responsible construction organization since they would be reporting directly to Field Construction Engineers who have responsibility for (1) quality, (2) cost, and (3) scheduling.

Corrective Action - SCE has reviewed this area and recognizes the potential problem for conflict of interest. However, it is not visualized as a real problem since inspection is a surveillance function and the examination of the quality of work. SCE will not be doing the actual work but rather will be performing a management inspection function which should be consistent with Criteria I and X.

4. Criterion II - Quality Assurance Program

a. Deficiency - The proposed QA manual did not contain the necessary detail required to provide management instructions for full implementation of the QA program.

Corrective Action - In general, the QAM has been updated to show the assignment of responsibilities for the implementation of the QA program.

b. Deficiency - The QA manual was not specific as to the requirement for the verification of quality by independent inspection.

Corrective Action - (Discussed under Criterion X.)

c. Deficiency - Material traceability on parts applied only to SCE designated Class I items and not Class II, (both classes include AEC designated Class I items) both of which require traceability by AEC Criteria.

Corrective Action - Material traceability is now required by the QAM on all SCE designated Class I and II items in accordance with the following statement, "when required by code, standard or other regulatory requirements". This item was reviewed and the wording found acceptable during a meeting with DRL and DRS on April 7, 1971 according to the SCE notes of that meeting. Source evaluation is now required for all Class I and II vendors per item 7)c) of the "Matrix" in Chapter 2 of the QAM.

5. Criterion III - Design Control

a. Deficiency - For reviews pertaining to engineering documents, the following items were listed as areas requiring further definition:

(1) Engineering design review guides.

Corrective Action - All four engineering disciplines now have approved design review guides as follows:

Electrical Engineer's Design Control and Review Guide dated February 18, 1971.

Procurement Document Review Guide dated July 16, 1971.

Nuclear Design Review Guide dated October 16, 1970.

Civil Engineering Design Review Guide dated February 1, 1971.

Mechanical Engineering Review Guide dated January 25, 1971.

(2) The SCE Design Control and Review Summary Reference Table did not recognize the general content of engineering control and review of technical factors for either the coordinated reviews accomplished with other contractors or for engineering documents produced by SCE.

Corrective Action - The SCE Design Control and Review Summary Reference Table has been changed to show responsibility for technical review.

(3) The Design Verification release form did not satisfy all the signature approvals for various documents displayed on Figure 2.1 in the QAM since it did not include provision for QA approval.

Corrective Action - The "Design Verification/Release" form has been changed to require QA approval prior to design release.

(4) The QAM did not specifically address the review by SCE or the control of reviews performed by contractors of design documents for the accessibility requirements of in-service inspection, maintenance, and repair.

Corrective Action - Accessibility for inservice inspection is now specifically required by item 2 of the "Summary Reference Table". This requirement was also verified to be contained in a letter from SCE to Bechtel dated August 11, 1970 and November 19, 1970. The problems experienced at San Onofre Unit 1 were itemized in the letter dated November 19, 1970.

(5) The control of design changes required further definition in the manual in order to be consistent with the commitment in the Application under 2.4 of the QAPP (Quality Assurance Program Plan).

Corrective Action - Items 4 thru 7 in Figure 3.1 in the QAM now state the requirements for design changes and are consistent with the Application.

b. Deficiency - Sufficient numbers of codes and standards, referenced in the PSAR, did not appear readily available for use by the engineers assigned to this project.

Corrective Action - The examination of the Librarians purchase orders disclosed that SCE has purchased and has on order one or more sets of the applicable codes and standards for each of the engineering disciplines and QA.

6. Criterion IV - Procurement Document Control

a. Deficiency - Instructions were not included in the Phase III Work Order (procurement document) to require Bechtel to provide a QA program consistent with regulatory requirements.

Corrective Action - Section 4.2.6 of the QAM now requires QA to include in the procurement specifications the quality assurance program required of prospective vendors. The Bechtel work order was cancelled last June when SCE devoted its efforts towards the settling of the seismic criteria questions. Presumably, future contracts will impose QA requirements of Bechtel.

b. Deficiency - The forms used for design verification/release did not show QA input as required by Section 4.2.b of the QAM.

Corrective Action - The "Design Verification/Release" form has been revised to show QA input.

c. Deficiency - Instructions did not exist in the QA Manual to assure the review of interim procurement documents for quality requirements.

Corrective Action - Section 4.3.7 has been added to the QAM to require the review of interim procurement documents for quality requirements and that the results of the review be documented in a letter to the Engineering Manager. Sections 4.2.11 and 4.2.12 also contain additional stipulations regarding contractual negotiations and procurement document review.

7. Criterion V - Instructions, Procedures and Drawings

a. Deficiency - The instructions for documenting intended PSAR deviations prior to the release of design disclosure documents had not been defined in the QAM.

Corrective Action - Section 5.2.8 of the QAM now requires that deviations from the PSAR intended by Engineering during the design stage to be processed and documented in accordance with Engineering's written internal procedure No. 5.3.

8. Criterion VI - Document Control

a. Deficiency - Chapter 6 of the QAM did not provide for the control and identification of the SCE Class I or II documents to assure their coordinated assembly in the final files of the Document Control Center.

Corrective Action - Section 6.1.10 of the QAM now requires that disclosure documents and those documents that evidence compliance with design intent to be referenced to a primary control number (purchase order and quality class list) for their coordinated assembly and retrievability in the Document Control Center. Mr. Wilms acknowledged that it would take time and work on the part of Engineering to achieve full compliance with this requirement.

b. Deficiency - The QAPP, 6.2.4 states, "The configuration control system (for change ot design disclosure documents) shall include provisions for review and approval by those responsible for review and approval of the original design disclosure documents, as shown by Figure 5" (Figure 3.1 of the QAM). The following items appeared not to meet the requirements of this statement.

(1) Configuration Change Notice (Exhibit 6.2) did not have provisions for approval by the Qualtiy Assurance Organization.

Corrective Action - SCE management has determined that QA sign off is not appropriate since QA does not perform technical reviews and does not orginate design disclosure documents. However, the final approved documents will be transmitted to QA where proper sign-off will be verified.

(2) Subsection 6.1.5 of the QAM appeared to indicate that changes at the job site could proceed without the engineering review required by Fig. 3.1 providing the Supervising Construction Engineer was cognizant of the change.

Corrective Action - Sections 6.15 and 6.19 of the QAM now require Engineering approval of all changes and allow construction or manufacturing to proceed only in accordance with approved design disclosure documents.

c. Deficiency - Exhibit 4.1 and Figure 3.1 of the QAM did not provide instructions to control the review of quotations by such groups as Procurement, Engineering, or the Quality Assurance organizations, prior to approval for contract award.

Corrective Action - QAM Section 4.3.7 now requires review of quotation by Purchasing, Engineering and QA. The consensus of opinion that the bidder's proposal together with other procurement documents conforms to design intent and quality requirements, is to be documented in a letter to the Engineering Manager.

d. Deficiency - For the specifications sampled, the QA organization did not review or approve the specifications after Engineering and QA comments were submitted to the originator. This did not appear consistent with the control requirements of Figure 3.1 of the QAM for design release (sign-off).

Corrective Action - Final review of specifications is now required by QAM Section 4.3.7.

9. Criterion VII - Control of Purchased Material Equipment and Services

a. Deficiency - The instructions in the QAM did not indicate what documentary evidence is required to provide assurance that material and equipment conform to the procurement specifications prior to installation or use.

Corrective Action - QAM Section 7.1.9 now requires that documentary evidence of compliance with procurement specifications will be subjected to "documentation review" during the receiving inspection in accordance with instructions contained in Sub-Sections 7.1.9.1 thru 7.1.9.7.

b. Deficiency - The instructions in the QAM did not make reference to the review of bids or quotations as a measure to assure that purchased material, equipment, and services conform to procurement documents.

Corrective Action - QAM Section 7.2.3 now stipulates the type of review required and the requirement for the preparation of a receiving inspection to assure conformance with procurement documents in accordance with Sections 7.1.8 and 7.1.9.

c. Deficiency - The responsible procurement buyer was not required to send bid response documents to Engineering for evaluation. No instructions existed to assure that the Quality Assurance organization was required to review the bid response documents when "alternates", involving quality of materials or components, to the original bid document were presented by the selected bidders. This was not consistent with 6.2.4 of the QAPP.

Corrective Action - QAM Section 4.3.7 now requires QA to perform a documented review of "offers" by prospective vendors prior to contract award.

10. Criterion X - Inspection

a. Deficiency - The proposed SCE QA manual was not specific as to:

(1) The requirement that inspections be performed by others than those performing the work.

Corrective Action - QAM Section 10.0 now requires personnel making inspections or examining hardware and work activities to be independent and different from personnel doing production work.

(2) The requirement for inspection of Class I and II components.

Corrective Action - QAM Section 10.1.6 now requires Class I and Class II (both classes include AEC Class I) structures and components to be subjected to planned source, receiving and construction inspections.

(3) Requirements for designation or establishing mandatory hold points which require independent witnessing or inspecting by SCE's designated reqresentative.

Corrective Action - QAM Section 10.1.2 now requires the SCE caused source inspection to emphasize the witness and hold-points specified in the procurement documents or by the Project Manager.

11. Criterion XI - Test Control

a. Deficiency - The QA manual did not contain provisions for the evaluation of test results.

Corrective Action - QAM Section 11.1.6 now requires test results to be reviewed, as a minimum by QA before the records are filed in the Document Control Center. The test results will be evaluated in accordance with instructions from Engineering.

b. Deficiency - The QA manual did not specifically provide that the developed test procedures must include provisions concerning prerequisites for a given test, availability and use of test instrumentation, and suitability of environmental conditions.

Corrective Action - QAM Section 11.1.7 now states that testing, as specified in procurement and design disclosure documents, shall proceed as planned by Engineering. Testing is to be performed when the written test procedures have been checked against specified prerequisites, calibrated instrumentation to be used and suitable environmental conditions.

12. Criterion XV - Nonconforming Materials, Parts, or Components

a. Deficiency - The program did not include provisions for the segregation of nonconforming material as required by Criterion XV.

Corrective Action - QAM Section 15.1.10 now requires that nonconforming items be appropriately segregated from acceptable materials as approved by SCE QA.

b. Deficiency - The QA manual did not require that "reject" materials be documented on a Nonconformance Report to assure that project management is aware of supplier and/or constructor performance for the purpose of evaluating trends affecting quality items and to provide assurance of prompt disposition of reject materials.

Corrective Action - QAM Sections 15.2.1, 13, 14 and 15 now contain the requirements for the documentation of reject materials to assure "prompt removal from site" and to enable evaluation for the "prevention of recurrences".

c. Deficiency - The scope of the term "rework on the spot" had not been defined by the QA manual but should be, since "rework on the spot" is not required to be documented on a Nonconformance Report.

Corrective Action - The term "rework on the spot" has been defined in the QAM Glossary to be a rework disposition whereby an Inspector's or Construction Engineer's order can be adhered to within reasonable time. Such a disposition requires daily monitoring for the completion of corrective action for it may be changed to repair when determined that the "reasonable time" has been exceeded.

13. Criterion XVI - Corrective Action

a. Deficiency - The QA manual procedures for corrective action were found to be consistent with the requirements of AEC Criterion XVI and the PSAR, except that it did not specify who will make trending studies for Quality Program Committee review.

Corrective Action - QAM Section 16.1.3 now requires the Quality Program Committee to assign the responsibility for trending studies to "competent SCE personnel".

14. Criterion XVII - Quality Assurance Records

a. Deficiency - The QA manual did not specify a retention period for QA records as required by the PSAR.

Corrective Action - QAM Section 17.02 now states that QA records shall be retained for the entire construction period and operating life of the plant.

b. Deficiency - The QA manual did not specifically require organizations other than QA to establish and implement procedures to ensure that they maintain sufficient records to provide objective evidence of quality, as required by the PSAR.

Corrective Action - QAM Sections 6.1.10, 17.1.6 and 17.2.4 establish procedures for the maintenance of records by Construction, Engineering and Special Vendors which shall subsequently be filed at the Documentation Control Center.

c. Deficiency - The SCE Engineering files have not been coordinated with QA to permit easy assembly into the QA Documentation Control Center.

Corrective Action - QAM Section 6.1.10 now requires design disclosure documents to be identified by the purchase order number and quality class for their coordinated assembly and "retrievability" in the Documentation Control Center.