

PROGRAM PLAN SUMMARY

INDEPENDENT VERIFICATION OF SONGS 2 & 3 SEISMIC DESIGN

PREPARED FOR



Southern California Edison Company

DECEMBER 1981

PROGRAM PLAN SUMMARY

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I. SUMMARY

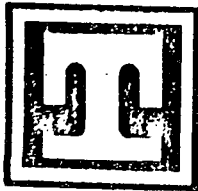
A program plan has been developed to conduct an independent review of the San Onofre Units 2 and 3 seismic design, including an assessment of the effectiveness of the quality assurance program for design. This program will be performed by Torrey Pines Technology division of General Atomic Company for Southern California Edison Company. This program is divided into seven tasks as follows:

Task A	Design Procedure Review
Task B	Design Procedure Implementation Review
Task C	Seismic Design Technical Review
Task D	Audit Plan Review
Task E	Processing of Findings
Task F	Reports
Task G	Pipe Segment Walkdown

General Atomic Company through its Torrey Pines Technology Division is eminently qualified to perform this evaluation for Southern California Edison. We operate under the first NRC approved quality assurance program. We have available the significant expertise in both quality assurance and design required to review in detail the seismic design starting with the approved design basis, through soil-structure interaction, to dynamic structural response to produce the seismic environment applied to specific components, and finally the component structural response to these environments.

We, as a company, have not had significant involvement with Southern California Edison in the immediate past. The individuals assigned to this project will be free from conflict of interest.

The independent review is scheduled to be complete in March 31, 1982. The overall schedule is shown in Figure 1.



TORREY
PINES
TECHNOLOGY

Figure 1 Proposed Project Schedule

PAGE ____ OF ____

REVISION LTR ____

DATE ____

PROJECT TITLE Independent Verification of San Onofre
Units 2 and 3 Seismic Design

PROJECT MANAGER G. L. Wessman

TASK	1981					1982								COMMENTS
	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV		
A. Design Procedure Review														
B. Design Procedure Implementation														
C. Seismic Design Technical Review														
D. Audit Plan Review														
E. Processing of Findings														
(2) F. Reports	1 ▽	2 ▽			3 ▽									
<u>Reporting Milestones</u>														
1. Program Plan														
2. Interim Report														
3. Final Report														

II. TASK DESCRIPTIONS

The purpose of this program is to conduct an independent review of the seismic design of San Onofre Units 2 and 3 from NRC approved design basis to implementation at the constructor or fabricator. This effort shall include review of the effectiveness of the applicable portions of the quality assurance program.

The program will be structured to verify that the design process converted the seismic design basis specified in the FSAR into design documents that are transmitted to the constructor or the fabricator. The program will include a review of the Southern California Edison (SCE) and Bechtel Power Corporation (BPC) audit plans and their implementation at the construction site and the fabricator's shop. The program will not review the design process performed by equipment fabricators other than Combustion Engineering Co. (CE).

The program will be structured to concentrate on Unit 2. It will review Unit 3 insofar as there are significant unique features of Unit 3.

A summary description of the tasks included in this program are in the following subsections.

TASK A - DESIGN PROCEDURE REVIEW

Objective

To verify compliance of seismic design-related QA procedures and controls to the NRC-approved QA section of the PSAR or to 10CFR-Part 50, Appendix B. The procedures and controls used by SCE, BPC, and CE will be reviewed.

Approach

The following steps are included:

- o Provide a detailed description of the complete structure of the design control procedures applicable to the seismic design work performed by SCE, BPC and CE.
- o Obtain copies of SCE, BPC, and CE procedures.
- o Review current procedures affecting the seismic design work for conformance to the most recent NRC-approved Appendix A of the PSAR.
- o Summarize the seismic design control process.
- o Review selected design control procedure revisions applicable in previous time periods.
- o Summarize the design procedure review.

TASK B - DESIGN PROCEDURE IMPLEMENTATION REVIEW

Objective

To verify the implementation of design procedures and controls identified in Task A.

Approach

The following steps are included:

- o Select points and steps for procedure implementation review.
- o Identify and locate pertinent design documents and governing procedures.

- o Review the selected steps and points for compliance to the governing procedures.
- o Summarize the results of the task.

TASK C SEISMIC DESIGN TECHNICAL REVIEW

Objective

Review the seismic design of selected safety-related structures, components, and systems of San Onofre Nuclear Generating Station Units 2 and 3 for compliance with the NRC approved design basis and methodology per FSAR Section 3.7 and 3.8. ANSI N45.2.11, Section 6.3.1, criteria will be used for guidance.

Approach

The following steps are included:

- o Develop the network for the seismic design chain for safety-related structures, components, and systems for San Onofre Units 2 and 3.
- o Establish a selection plan for a detailed seismic design review.
- o Select the features for design review.
- o Develop specific procedures and acceptance criteria for this design review. The following questions from ANSI N45.2.11-1974, Section 6.3.1, shall be included as they relate to seismic design: 1, 2, 3, 4, 6, 7, 8, 9, 15, 19.
- o Obtain design documents and perform the detailed technical design review of selected structures, components, and systems.

- o Summarize the design review.

TASK D - AUDIT PLAN REVIEW

Objective

To review and evaluate the QA audit plan(s) of SCE and BPC, and verify implementation of those plans. The review and evaluation will be restricted to audit plans and audits covering implementation of seismic design output at the construction site or the fabricators' shops.

Approach

The following steps are included:

- o Identify SCE requirements for the QA audit plan(s) and evaluate those requirements against the then-existing regulatory requirements.
- o Review the SCE and BPC records to verify that audit plan(s) were prepared in accordance with the SCE requirements identified in D1.
- o Evaluate the audit plans.
- o Review records for evidence that the audit plan(s) were implemented.
- o Summarize the work performed on this task.

TASK E - PROCESSING OF FINDINGS

Objectives

To review Potential Findings and transmit any Findings to Southern California Edison, Bechtel Power Corp. and Combustion Engineering.

Approach

The following steps are included:

- o Establish a Findings Review Committee. This committee shall be composed of senior technical personnel with broad experience in technical management.
- o The Committee shall define criteria for determining the degree of impact that Potential Findings have on the seismic design adequacy of San Onofre Units 2 and 3.
- o The Committee shall establish a procedure to process Potential Findings.
- o The Committee shall review each Potential Finding including the definition and the accuracy of the Potential Finding. They shall assess the impact of the Potential Finding on the overall seismic design process for the plant. If the Committee determines the Potential Finding is accurate and has the potential for significant impact on the design adequacy of San Onofre Units 2 and 3, it shall recommend to the TPT Project Manager that these Potential Findings be identified as Findings. If the Committee determines the Potential Finding is accurate, but does not have the potential for significant impact on the design adequacy of San Onofre Units 2 and 3, it shall recommend to the TPT Project Manager that these Potential Findings be identified as Observations. If a Potential Finding is not accurate and therefore does not become a Finding or an Observation its record shall be retained and included in the Final Report.

- o The TPT Project Manager shall review the recommendations of the Findings Review Committee for compliance with established criteria. If criteria have been properly applied and documented he shall declare the Potential Finding as a Finding or an Observation, and so report it in the interim and final reports. If the recommendation is not accepted, the Potential Finding shall be reprocessed by the Findings Review Committee.
- o The TPT Project Manager shall transmit both Findings and Observations to SCE and BPC or CE.
- o SCE and BPC or CE shall evaluate the Findings in accordance with established SCE procedures and propose a remedial action.
- o The individual reviewer and the Finding Review Committee shall review the remedial action plans and evaluate their adequacy.

TASK F - REPORT PROCEDURE

Objective

Prepare reports on Findings, and conclusions with respect to adequacy of the seismic design .

Approach

The following steps are included:

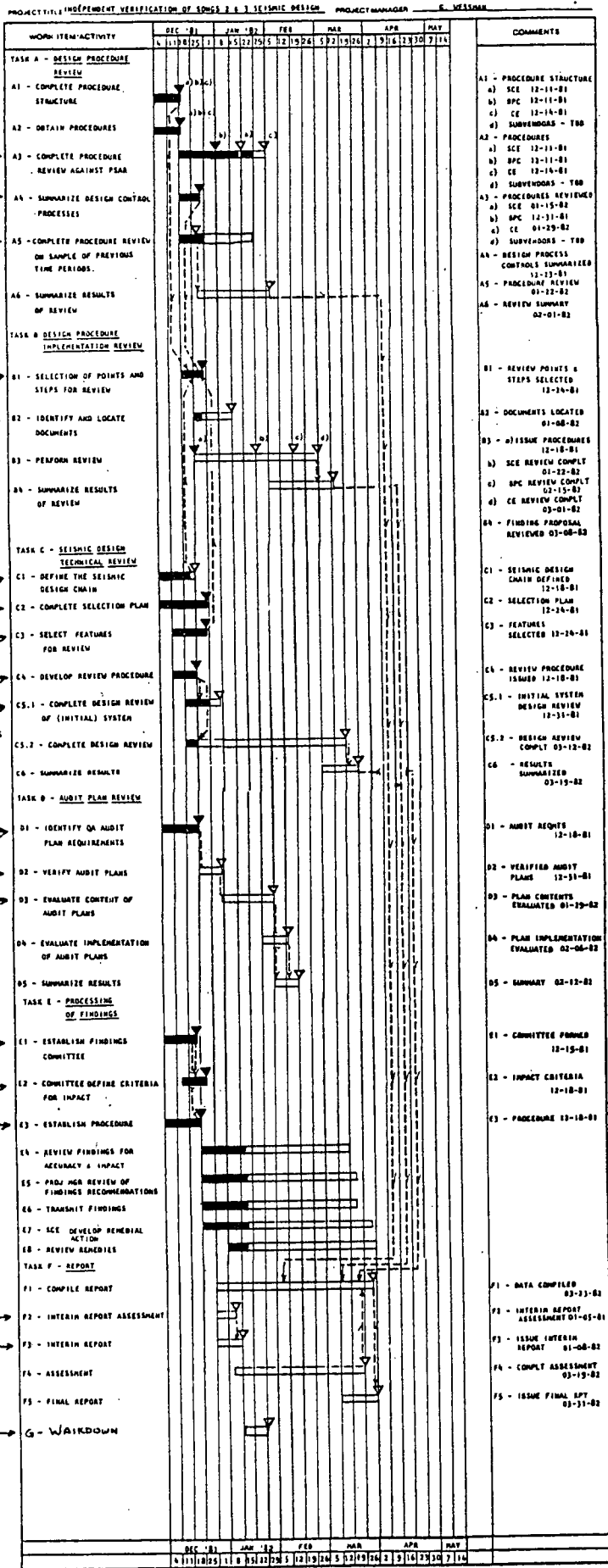
- o Compile all results.
- o Assess on an interim basis the adequacy of the overall seismic design for San Onofre Units 2 and 3 based on the part of the program completed by December 31, 1981.

- o Prepare an interim report and send it to the cognizant Executive Vice President for SCE.
- o Assess the adequacy of the overall seismic design for San Onofre Units 2 and 3.
- o Prepare a final report and send it to the cognizant Executive Vice President for SCE.

TASK G - PIPE SEGMENT WALKDOWN

Objective

To verify, to the extent possible with non-destructive, visual examination, the proper installation of a segment of pipe reviewed in Task C.



DEFINED
SECTIONS