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ACCESSION NBR: 8201210187 DOC. DATE: 82/01/19 NOTARIZED: NO DOCKET #  
 FACIL: 50-361 San Onofre Nuclear Station, Unit 2, Southern California 05000361  
 50-362 San Onofre Nuclear Station, Unit 3, Southern California 05000362  
 AUTH. NAME: AUTHOR AFFILIATION  
 DIETCH, R. Southern California Edison Co.  
 RECIP. NAME: RECIPIENT AFFILIATION  
 DENTON, H. R. Office of Nuclear Reactor Regulation, Director  
 EISENHUT, D. G. Division of Licensing

SUBJECT: Forwards GAI Co Potential Finding Repts 0014, 0015, 0016, 0017,  
 0018, 0019 & 0026 issued to Bechtel Power Corp. Repts not  
 verified for validity & accuracy by original design  
 organization.

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*Southern California Edison Company*

**SCE**

P. O. BOX 800

2244 WALNUT GROVE AVENUE

ROSEMEAD, CALIFORNIA 91770

ROBERT DIETCH

VICE PRESIDENT

TELEPHONE

213-572-4144

January 19, 1982

Mr. Harold R. Denton, Director  
Office of Nuclear Reactor Regulation  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Attention: Mr. Darrell G. Eisenhut

Dear Mr. Denton:

Subject: Docket Nos. 50-361 and 50-362  
San Onofre Nuclear Generating Station  
Units 2 and 3



Enclosed are seven copies each of Potential Finding Reports Nos. 0014, 0015, 0016, 0017, 0018, 0019 and 0026 issued to Bechtel Power Corporation by General Atomic Company. These reports reflect the reviewer's initial opinion and have not been verified for validity and accuracy by the original design organization.

If you have any questions regarding this matter, please call me.

Very truly yours,

*Robert Dietch*

cc: NRC Region V  
R. H. Engelken (with enclosure)

8201210187

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**TORREY PINES TECHNOLOGY**

P.O. Box 81608  
San Diego, California 92138  
Telephone: (714) 455-2654

*Rec'd. on Telex 1/19/82  
@ 11:00 A.M.*

**GEORGE L. WESSMAN**  
Director

**January 19, 1982**

**Mr. B. J. Fogarty**  
Executive Vice President  
SOUTHERN CALIFORNIA EDISON  
P. O. Box 800  
Rosemead, California 91770

Dear Mr. Fogarty:

Attached are Potential Finding Reports 2408-PFR-0014, 0018, 0019 and 0026.

Sincerely,

*George L.*  
George L. Wessman  
Project Manager

Attachments

cc: J. Adrian - SCE  
J. Henpe - BPC

POTENTIAL FINDING REPORT  
SONGS 2&3 SEISMIC DESIGN VERIFICATION

PFR NO. 2408-PFR-0014

REVISION

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS: Safety Injection Line to Reactor Coolant Loop 1A, Piping  
Stress Analysis Package PSC-78 Node 117, Calculation Tag S2-SI-043-H-020

REQUIREMENT REFERENCE DOCUMENTS:

Piping Stress Analysis Package S-78, ML204-043-2B

BASIC REQUIREMENT:

Calculation use latest design load.

DESCRIPTION OF POTENTIAL FINDING:

The load used in design calculation for pipe support at node 117 is (+69500/-69500;  
Sheet 63 of S-78 gives a load for node 117 of (+38736/-38736)

\*per DCN 05

PREPARED BY: R. Salavachoglu R.S. DATE: 1/18/82

REJECTION OF GA TASK LEADER COMMENTS BY: \_\_\_\_\_

DATE: \_\_\_\_\_

REJECTION OF ORIGINAL DESIGN ORG. COMMENTS BY: \_\_\_\_\_

DATE: \_\_\_\_\_

B. REVIEW BY GA TASK LEADER

COMMENTS

☒ AGREE PF IS VALID

BY

DATE

☐ REQUEST RE-REVIEW

BY

DATE

☐ DISAGREE

BY

DATE

☐ REVIEW OF ORIGINAL DESIGN ORGS. COMMENTS BY: \_\_\_\_\_

DATE: \_\_\_\_\_

POTENTIAL FINDING REPORT  
SONGS 2&3 SEISMIC DESIGN VERIFICATION

PFR NO. 2408 PFR-0018  
REVISION -

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS: Safety Injection Line to Reactor Coolant Loop 1A, Piping Stress Analysis Package PSC-78, Node 146 (Incorrectly shown as Node 147, Ref. 2408-PFR-0006) No. S2-S1-059-H-009.

REQUIREMENT REFERENCE DOCUMENTS:

Specification S023-409-2, Nuclear Service Pipe Supports, Hangers and Accessories for San Onofre Nuclear Generating Station, Units 2 and 3, Page 4F-9 (4/24/70).

BASIC REQUIREMENT: Structural Steel Design per AISC Spec. (Feb. 12, 1969).

DESCRIPTION OF POTENTIAL FINDING:

Revised Calculation P450-1.109 - 9.108, Sht. 1 uses weld allowable stress of 13.6 KSI, which is the allowable in AISC Spec (1963) for E60XX electrode. The weld allowable stress in AISC (1969) is 18 KSI for E60XX electrode. The calculation uses weld allowable stress for 2 different electrodes without calling out the electrodes.

PREPARED BY: A. Zimmer DATE: 1-18-82

REJECTION OF GA TASK LEADER COMMENTS BY: \_\_\_\_\_

DATE: \_\_\_\_\_

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B. REVIEW BY GA TASK LEADER

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DATE 1/18/82

☐ REQUEST RE-REVIEW

BY \_\_\_\_\_

DATE \_\_\_\_\_

☐ DISAGREE

BY \_\_\_\_\_

DATE \_\_\_\_\_

☐ REVIEW OF ORIGINAL DESIGN ORGS. COMMENTS BY: \_\_\_\_\_

DATE: \_\_\_\_\_

POTENTIAL FINDING REPORT  
SONGS 2&3 SEISMIC DESIGN VERIFICATION

PFR NO. 2408-PFR-CO  
REVISION 0019

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS: Safety Injection Line to Reactor Coolant Loop 1A, Piping Stress Analysis Package P5G-78, Node 146 (Incorrectly shown as node No. 147, Ref. 2408-PFR-0006),

REQ. No. S2-S1-039-H-009  
REQUIREMENT REFERENCE DOCUMENTS:

Specification S023-409-2, Nuclear Service Pipe Supports, Hangers and Accessories for San Onofre Nuclear Generating Station, Units 2 and 3, Page 4F-9 (4-24-74).

BASIC REQUIREMENT:

Allowable stress under DBE loading for structural steel is 0.90 times the minimum guaranteed yield stresses listed in the AISI Spec. (Feb. 12, 1969).

DESCRIPTION OF POTENTIAL FINDING: Revised calculation P450-1.109 - 9.100, Sht. 1 uses bending allowable = 19.14 KSI ( $0.6F_y \times 0.9$ ) and weld shear allowable stresses of 13.6 KSI and 21.0 KSI which are not equal to  $0.9 \times F_y$  per the basic requirement.

PREPARED BY: A. Zier *[Signature]* DATE: 1/16/82

REJECTION OF GA TASK LEADER COMMENTS BY: \_\_\_\_\_ DATE: \_\_\_\_\_

REJECTION OF ORIGINAL DESIGN ORG. COMMENTS BY: \_\_\_\_\_ DATE: \_\_\_\_\_

B. REVIEW BY GA TASK LEADER

COMMENTS

☒ AGREE PF IS VALID

BY *[Signature]*

DATE 1/18/82

☐ REQUEST RE-REVIEW

BY \_\_\_\_\_

DATE \_\_\_\_\_

☐ DISAGREE

BY \_\_\_\_\_

DATE \_\_\_\_\_

☐ REVIEW OF ORIGINAL DESIGN ORGS. COMMENTS BY: \_\_\_\_\_

DATE: \_\_\_\_\_

POTENTIAL FINDING REPORT  
SONGS 2&3 SEISMIC DESIGN VERIFICATION

PFR NO. 2408-PFR-0026

REVISION \_\_\_\_\_

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS: Safety Injection Line to Reactor Coolant Loop 1A, Piping Stress Analy Package PSC-78, Node 146 (Incorrectly shown as Node 147, Ref. 240E-PFR-0006) Tag. No. S2-S1-059-R-009.

REQUIREMENT REFERENCE DOCUMENTS:

Specification S023-409-2, Nuclear Service Pipe Supports, Hangers and Accessories for San Onofre Nuclear Generating Station, Units 2 and 3, Section 45.1

BASIC REQUIREMENT:

Materials used in the support should be called out on drawings and documents.

DESCRIPTION OF POTENTIAL FINDING:

Calculations and drawings do not identify steel type nor weld electrode used.

PREPARED BY: A. Zimmer DATE: 1/18/82

REJECTION OF GA TASK LEADER COMMENTS BY: \_\_\_\_\_ DATE: \_\_\_\_\_

REJECTION OF ORIGINAL DESIGN ORG. COMMENTS BY: \_\_\_\_\_ DATE: \_\_\_\_\_

B. REVIEW BY GA TASK LEADER

COMMENTS

☒ AGREE PF IS VALID

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DATE 1/18/82

☐ REQUEST RE-REVIEW

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DATE \_\_\_\_\_

☐ DISAGREE

BY \_\_\_\_\_

DATE \_\_\_\_\_

☐ REVIEW OF ORIGINAL DESIGN ORGS. COMMENTS BY: \_\_\_\_\_ DATE: \_\_\_\_\_



**TORREY PINES TECHNOLOGY**

P.O. Box 81608  
San Diego, California 92138  
Telephone: (714) 455-2654

*Rcd. on Telex 1/18/82  
5:00 P.M.*

**GEORGE L. WESSMAN**  
Director

**January 18, 1982**

**Mr. D. J. Fogarty**  
**Executive Vice President**  
**Southern California Edison**  
**P. O. Box 800**  
**Rosemead, California 91770**

**Dear Mr. Fogarty:**

**Attached are Potential Finding Reports 2408-PFR-0015 through  
2408-PFR-0017.**

**Sincerely,**

*George L. Wessman*

**George L. Wessman**  
**Project Manager**

**Enclosures**

**cc: J. Adrian - SCE**  
**J. Henpe - Bechtel**



# POTENTIAL FINDING REPORT SONGS 2&3 SEISMIC DESIGN VERIFICATION

## A. PREPARATION BY GA INITIATOR

**AFFECTED ITEMS:** The engineered safety features system control panel (panel 2CR57) of the I&C system.

**REQUIREMENT REFERENCE DOCUMENTS:** The Bechtel Power Corporation Specification for Control Room and Field Mounted Panels, specification number 5023-502-5 with Addenda I, II and III.

**BASIC REQUIREMENT:** That all natural frequencies be greater than 10 HZ horizontally and 15 HZ vertically (Para. 4.6.5.3 of specification and Addendum 1). Acceleration response when subjected to the DBE control room floor response spectrum shall not exceed 3 "g" in any direction (para. 6.6.1.4 of Addendum 1).

**DESCRIPTION OF POTENTIAL FINDING:** The specification fails to require that the internal panel wiring or the connecting wiring be simulated, accounted for or otherwise considered during seismic qualification testing of panels. Inaccurate determination mode shape, acceleration levels and natural frequency may have occurred if the wiring was not considered.

PREPARED BY: S. Rodkin DATE: 1-17-82  
REJECTION OF GA TASK LEADER COMMENTS BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
REJECTION OF ORIGINAL DESIGN ORG. COMMENTS BY: \_\_\_\_\_ DATE: \_\_\_\_\_

## B. REVIEW BY GA TASK LEADER

### COMMENTS

☒ AGREE PF IS VALID BY FRANK DATE 1/18/82  
☐ REQUEST RE-REVIEW BY \_\_\_\_\_ DATE \_\_\_\_\_  
☐ DISAGREE BY \_\_\_\_\_ DATE \_\_\_\_\_  
☐ REVIEW OF ORIGINAL DESIGN ORGS. COMMENTS BY: \_\_\_\_\_ DATE: \_\_\_\_\_

# POTENTIAL FINDING REPORT

## SONGS 2&3 SEISMIC DESIGN VERIFICATION

### A. PREPARATION BY GA INITIATOR

**AFFECTED ITEMS:** The engineered safety features system control panel (Panel 2CR57) the I&C System.

**REQUIREMENT REFERENCE DOCUMENTS:** The Bechtel Power Corporation Specification for control room and field mounted panels specification number S023-S02-5 with Addenda I, II, and III.

**BASIC REQUIREMENT:** That the acceleration level at device mounting points on the panel not exceed 3"G" when the panel is exposed to the control room floor (30' elevation) DBE response spectra (Section 4.6.5.4 of Addendum I to the specification).

**DESCRIPTION OF POTENTIAL FINDING:** The specification fails to require the vendor to consider the anchorage details designed by Bechtel (the embedments) in his analysis his test of panels. Consideration of such details might result in natural frequency and mode shapes which would cause the maximum specified "G" level at device mounting locations to be exceeded during seismic excitation.

PREPARED BY: Stan Rodkin

DATE: 1-17-82

REJECTION OF GA TASK LEADER COMMENTS BY: \_\_\_\_\_

DATE: \_\_\_\_\_

REJECTION OF ORIGINAL DESIGN ORG. COMMENTS BY: \_\_\_\_\_

DATE: \_\_\_\_\_

### B. REVIEW BY GA TASK LEADER

COMMENTS

☒ AGREE PF IS VALID

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☐ REQUEST RE-REVIEW

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☐ DISAGREE

BY

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☐ REVIEW OF ORIGINAL DESIGN ORGS. COMMENTS BY: \_\_\_\_\_

DATE: \_\_\_\_\_

POTENTIAL FINDING REPORT  
SONGS 2&3 SEISMIC DESIGN VERIFICATION

PFR NO. 2408-PFR-00

REVISION

A. PREPARATION BY GA INITIATOR

**AFFECTED ITEMS:** The engineered safety features system control panel (panel 2CR57) of the I&C System.

**REQUIREMENT REFERENCE DOCUMENTS:** The Bechtel Power Corporation specification for control room and field mounted panels, specification number S023-502-5 with Addenda I, II, and III.

**BASIC REQUIREMENT:** That the acceleration level at device mounting points on the panel not exceed 3 "G" in any direction when the panel is exposed to the control room floor (30' elevation) DBE response spectra (section 4.6.5.4 of Addendum I to the specification).

**DESCRIPTION OF POTENTIAL FINDING:** The specification fails to require the vendor to consider the dynamic interaction of cabinets arranged in the specific manner of the San Onofre Control Room cabinets. Such dynamic interaction may produce mode shapes resulting in excessive g levels during seismic excitation.

PREPARED BY: Stan Rodkin

DATE: 1-17-82

REJECTION OF GA TASK LEADER COMMENTS BY:

DATE:

REJECTION OF ORIGINAL DESIGN ORG. COMMENTS BY:

DATE:

B. REVIEW BY GA TASK LEADER

COMMENTS

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