

SEP 20 1978

Docket Nos. 50-361  
and 50-362

Mr. James H. Drake  
Vice President  
Southern California Edison Company  
2244 Walnut Grove Avenue  
P. O. Box 800  
Rosemead, California 91770

Mr. B. W. Gilman  
Senior Vice President - Operations  
San Diego Gas and Electric Company  
101 Ash Street  
P. O. Box 1831  
San Diego, California 92112

Gentlemen:

SUBJECT: ADDITIONAL QUESTIONS AND POSITIONS ON THE FINAL SAFETY ANALYSIS  
REPORT FOR THE SAN ONOFRE NUCLEAR GENERATING STATION, UNITS 2  
AND 3

As a result of our review of the Final Safety Analysis Report for the San Onofre Nuclear Generating Station, Units 2 and 3, we find that we need additional information to complete our evaluation. The specific information required is listed in the Enclosure. Almost all of the questions and positions in the Enclosure have already been verbally transmitted to your staff.

Please contact us if you have any questions about the information requested.

Sincerely,

Original signed by  
~~Robert Baer~~

Robert L. Baer, Chief  
Light Water Reactors  
Branch No. 2  
Division of Project Management

Enclosure:  
Request for Additional  
Information

ccs w/enclosure:  
See pages 2 and 3

Ap 3  
GD

OFFICE >	DPM:LWR #2	DPM:LWR #2				
SURNAME >	HRood:ab	RLBaer <i>RLB</i>				
DATE >	9/20/78 <i>HR</i>	9/20/78				

Mr. James H. Drake  
Vice President  
Southern California Edison Company  
2244 Walnut Grove Avenue  
P. O. Box 800  
Rosemead, California 91770

Mr. B. W. Gilman  
Senior Vice President - Operations  
San Diego Gas and Electric Company  
101 Ash Street  
P. O. Box 1831  
San Diego, California 92112

cc: Rollin E. Woodbury, General Counsel  
Southern California Edison Company  
2244 Walnut Grove Avenue  
P. O. Box 800  
Rosemead, California 91770

Chickering and Gregory  
ATTN: David R. Pigott, Esq.  
Counsel for San Diego Gas  
& Electric Company and  
Southern California  
Edison Company  
Three Embarcadero Center, 23rd Floor  
San Francisco, California 94112

Mr. Kenneth E. Carr  
City Manager  
City of San Clemente  
100 Avenida Presidio  
San Clemente, California 92672

Alan R. Watts, Esq.  
Rourke & Woodruff  
1055 North Main Street  
Suite 1020  
Santa Ana, California 92701

Lawrence Q. Garcia, Esq.  
California Public Utilities Commission  
5066 State Building  
San Francisco, California 94102

Mr. James H. Drake  
Mr. B. W. Gilman

cc: Mr. R. W. DeVane, Jr.  
Combustion Engineering, Inc.  
1000 Prospect Hill Road  
Windsor, Connecticut 06095

Mr. P. Dragolovich  
Bechtel Power Corporation  
P. O. Box 60860, Terminal Annex  
Los Angeles, California 90060

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

Henry Peters  
San Diego Gas & Electric Company  
Post Office Box 1831  
San Diego, California 92112

Ms. Lyn Harris Hicks  
Advocate for GUARD  
3908 Calle Ariana  
San Clemente, California 92672

Richard J. Wharton, Esq.  
4655 Cass Street, Suite 304  
San Diego, California 92109

Phyllis M. Gallagher, Esq.  
Suite 220  
615 Civic Center Drive West  
Santa Ana, California 92701

Mr. Robert J. Pate  
United States Nuclear Regulatory Commission  
P. O. Box 4167  
San Clemente, California 92672

040.0 POWER SYSTEMS BRANCH

040.64 It is not clear from your response to Item 040.54 (concerning power lockout to selected ESF valve actuators) that your design is in full conformance with Branch Technical Position ICSB 18 (PSB) found in Section 8A of the Standard Review Plan. The area of concern is the requirement for redundant valve position indication which meets the single failure criterion. Please provide one of the following: (1) further details of your design that demonstrates your compliance with the above position, (2) justification that your design provides an equivalent degree of assurance as that required by the position, or (3) the details of your modified design which meets the requirements of this position.

040.65 Provide your bases and justification for sequencing emergency loads  
8.2 when the preferred offsite power system is supplying power to the  
8.3 emergency bus.

Provide a comparison on a bus by bus basis for all emergency busses of the voltage and motor starting transients associated with sequenced versus instantaneous loading for the condition of grid voltage at the low end of its normal range and maximum plant auxiliary load.

Provide a description of what would be required to remove this non-standard design feature from your design and the associated safety implications, if any.

112.0

MECHANICAL ENGINEERING BRANCH, SECTION B112.33  
(3.9.3)

Provide the information requested in Question 112.29 for all NSSS and Non-NSSS supplied ASME Class 2 and 3 systems, components, equipment and their supports.

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(5.2.2) (3) Justify that relief valve 2PSV-9349 will function during and after an OBE.

(4) Justify that a single safety relief valve on the SDCS is satisfactory for overpressure protection. Address an increased testing frequency program for this valve.

212.142 The staff requires that the set point for the automatic closure  
(5.4.7) of the SDCS suction valves be increased to 700 psig to preclude inadvertent closure of the system during an overpressure transient.

212.143 Your response to question 212.120 on SLB outside containment  
(15.1) did not answer the posed question. During shutdown and startup, when the pressurizer pressure low limit safety injection trip has been bypassed, discuss the protective systems available, the alarm that alerts the operator to a SLB outside containment, and operator actions required to mitigate the event.

212.144 Provide reanalysis of the maximum cladding oxidation for the  
(15.6) 0.8 x DEG/PD break using the revised (Amendment 3) containment design values.

212.145 Your response on boron precipitation during long-term cooling is  
(6.3) not satisfactory. The staff's position requires a 4 percent w/o margin in your calculations. Provide the time to boron precipitation assuming a 4 percent w/o margin.

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212.146  
(5.2.5)

The applicant has stated that RCS leakage into the LPSI and HPSI systems through the SIS discharge line check valves is indicated by pressure sensors. The staff requires installation of control room alarms associated with these sensors which will annunciate on high pressure to warn the operator of possible intersystem leakage.

212.147  
(6.3)

The room which contains the third HPSI pump (P018) has no leakage detection system. The staff requires an environmentally qualified leakage detection system to alert the operator to passive failures (valve stem leakage, pump seal leakage, etc.) during long term cooling following a LOCA be installed in the third pump room.

The staff requires that the applicant demonstrate that a passive leak of 50 gpm following a LOCA can be successfully mitigated by the leakage control systems for the ECCS. No operator action may be credited for thirty minutes. Provide assurance that no damage is sustained to the redundant train.

212.148  
(15.1)

The staff requires that fuel failures for the Increased Steam Flow event with a concurrent single failure be recalculated using the criterion that any rod which has a DNBR less than 1.19 fails.

212.149  
(15.1)

Provide detailed information on the design and placement of the steam flow restrictor venturis in the main steam lines. Are the flow restrictor venturis designed to be Seismic Category 1? If not, reanalyze the steam line break accident,

(15.1) assuming maximum possible flow from the faulted steam generator with failed restrictor.

212.150 The staff requires that fuel failures for the locked rotor  
(15.3) accident be recalculated using the criterion that a fuel pin is assumed to fail if the DNBR of the pin is less than 1.19.

212.151 Your response to staff question 212.21 is not acceptable. The  
(15.6) staff finds no satisfactory basis for comparing the ECC systems of CESSAR, Calvert Cliffs Unit One, and ANO-2 to SONGS 2 & 3 in order to assure that small break results for SONGS 2 & 3 are bounded by the submitted results of the other 3 plants. Therefore, the staff requires that three small break calculations be performed for breaks  $0.01 \text{ ft}^2$ ,  $0.1 \text{ ft}^2$  and  $1.0 \text{ ft}^2$  using an approved model.



361.0

GEOSCIENCES BRANCH, GEOLOGY-SEISMOLOGY SECTION

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361.35

The applicant has not provided sufficient information to permit the staff to evaluate interpretations of the geologic structure as reported in "Generalized Sub-Surface Geological and Geophysical Study, Capistrano Area, Orange County, California, November 1975" by Jack C. West. The complex faulting shown in the sub-surface contour map, Exhibit B, and the geologic structure sections are described by the author as "highly interpretive." In order for the staff to understand the bases for these interpretations, we require the following information:

- (a) a map showing all lineaments derived from photo-geologic and remote sensing investigations,
- (b) determination of the cause of the lineaments including in particular any geologic cause such as faulting,
- (c) annotated seismic reflection profiles and a discussion of the extent of their use to define and evaluate the age and capability of any faults,
- (d) logs of all borings used to define geologic structure
- (e) the bases for the interpretation of the presence or the absence of faulting between all significant sets of control data points.

361.36

In addition, please provide the following:

- (a) An evaluation of the tectonic history and structural development of the Capistrano Embayment including in particular ~~the~~ structural and genetic relationship among faults in the embayment.

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- (b) An evaluation of the relationship between faulting in the Capistrano Embayment and the offshore zone of faulting.
- (c) An evaluation of terrace deformation across the Capistrano Embayment.
- (d) An evaluation of the correlation of seismicity with faulting in the Capistrano Embayment.

422.0

CONDUCT OF OPERATIONS, QUALITY ASSURANCE BRANCH422.11 (RSP)  
(13.4.2)

We do not agree that the NARC review of reports and meeting minutes of the OSRC assures that they review the evaluations of proposed changes to procedures to verify that such proposed changes do not constitute unreviewed safety questions, or proposed changes in procedures which may involve an unreviewed safety question. Therefore, it is the staff's position that you modify the responsibilities of your NARC to include the review of:

1. evaluations of proposed changes to procedures completed under the provisions of 10 CFR 50.59(a) to verify that such proposed changes do not constitute an unreviewed safety question,
2. proposed changes in procedures which may involve an unreviewed safety question as defined in 10 CFR 50.59(c).

Amend your response to address this position.

## Distribution

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