July 17, 1990

Docket File

Docket No. 50-206

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Mr. Harold B. Ray
Senior Vice President
Southern California Edison Company
Irvine Operations Center
23 Parker
Irvine, California 92718

Dear Mr. Ray:

SUBJECT: SAFETY-RELATED PUMP LOSS (BULLETIN 88-04), SAN ONOFRE NUCLEAR GENERATING STATION, UNIT NO. 1 (TAC NO. 69967)

By letters dated January 5 and December 15, 1989, you provided your response to NRC Bulletin 88-04, "Potential Safety-Related Pump Loss." By letter dated February 6, 1990, we requested additional information to complete our review and you provided your response to this request by letter dated May 4, 1990.

Based on our preliminary review of your submittals, we have concluded that your response to Bulletin 88-04 is unacceptable. Our specific comments are included as an enclosure to this letter for your information. You are requested to revise your response to Bulletin 88-04 to adequately address the concerns expressed by the bulletin and to submit your revised response by September 1, 1990, for our review.

Your failure to adequately respond to Bulletin 88-04 is of concern to us and warrants additional discussion. Therefore, we request that you meet with us at your earliest convenience to discuss your assessment and resolution of this problem. Please contact James Tatum at (301) 492-1373 to make the necessary arrangements.

The reporting and/or recordkeeping requirements contained in this letter affect fewer than ten respondents; therefore, OMB clearance is not required under Pub. L. 96-511.

Please contact us if you should have any questions regarding this matter.

Sincerely,

Original Signed By:

John T. Larkins, Acting Director
Project Directorate V
Division of Reactor Projects - III, IV, V and Special Projects
Office of Nuclear Reactor Regulation

Enclosure:
As stated

cc: w/enclosure
See next page

EJS by comments

DRSP/PD5	DRSP/PD5	EMEB	DRSP/(A)D:PD5
DFoster	JTatum:rc	ESullivan	JLarkins
7/5/90	7/16/90	7/12/90	7/17/90

DOCUMENT NAME: TAC 69967

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MAY

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

July 17, 1990

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Senior Vice President
Southern California Edison Company
Irvine Operations Center
23 Parker
Irvine, California 92718

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John T. Larkins, Acting Director
Project Directorate V
Division of Reactor Projects - III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation

Enclosure:
As stated

cc: w/enclosure
See next page

Mr. Harold B. Ray
Southern California Edison Company

San Onofre Nuclear Generating
Station, Unit No. 1

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ENCLOSURE

COMMENTS RE: SOUTHERN CALIFORNIA EDISON COMPANY RESPONSE TO NRC BULLETIN 88-04, "SAFETY RELATED PUMP LOSS," FOR SAN ONOFRE NUCLEAR GENERATING STATION, UNIT NO. 1

1. The licensee could not obtain concurrence from pump suppliers that existing miniflow rates are acceptable. In its response, the licensee did not provide a plan to obtain additional test data and/or modify the miniflow capacity as requested by Item 3 of the Bulletin.

2. Based on its review of IST data, the licensee concluded that miniflow rates are acceptable for all safety-related pumps except the feedwater pumps. Typically, a pump is operated over a period of 15 to 30 minutes for collecting IST data. This is not judged to provide a meaningful indication of how the pump would perform when operated in miniflow for considerably longer periods of time.

3. In the case of the feedwater pumps (G-3A and G-3B), the licensee performed a calculation to demonstrate the adequacy of miniflow rates for the safety injection mode of operation. The licensee's methodology was deficient in the following respects:

   a. The licensee assumed that a 700 gpm miniflow rate was adequate. The validity of this assumption was not established.

   b. The licensee assumed a clean piping system for determining pressure drop. Given the vintage of San Onofre Unit 1 and the fact that the system contains certain carbon steel components, this is not a realistic assumption.

   c. No design information was available for the miniflow orifices. The licensee used ultrasonic techniques to establish orifice geometry and concluded that the orifice consists of an eleven inch long section of pipe where the inside diameter was reduced slightly compared to the nominal pipe diameter. This is not a standard orifice design and should be investigated by the licensee. The feedwater system miniflow orifice is significantly different from this design consisting of many 1/8 inch diameter holes. The fact that the pressure drop across the feedwater miniflow control valves is twice the pressure drop across the safety injection miniflow control valves tends to discredit the assumed safety injection miniflow orifice geometry. Additionally, if the assumed geometry is correct, it is questionable that such an orifice design could prevent dead heading between the two feedwater pumps.

4. Information supplied by the licensee in its letter dated May 4, 1990, indicates that certain components in the safety injection miniflow flowpath are carbon steel. Included among these are the miniflow orifices and miniflow control valves. Carbon steel components may not be suitable for this application and this condition should be evaluated by the licensee.