

*Southern California Edison Company*

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L. T. PAPAY  
VICE PRESIDENT

September 29, 1982

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NRC

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REGISTRATION  
TELEPHONE  
213-572-1474

U. S. Nuclear Regulatory Commission  
Office of Inspection and Enforcement  
Region V  
1450 Maria Lane, Suite 210  
Walnut Creek, California 94596-5368

Attention: Mr. R. H. Engelken, Regional Administrator

Dear Sir:

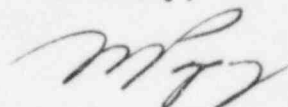
Subject: Docket No. 50-361 and 50-362  
NRC Inspection Reports 50-361/82-25  
50-362/82-16  
Response to Notice of Violation  
San Onofre Nuclear Generating Station  
Units 2 and 3

Mr. T. W. Bishop's letter of August 31, 1982 issued NRC Inspection Reports 50-361/82-25 and 50-362/82-16 and forwarded a Notice of Violation resulting from the July 3-August 19, 1982 routine monthly inspection conducted by Messrs. A. Chaffee, G. Johnston and J. Carlson.

The enclosure of this letter provides our response to the Notice of Violation contained in Appendix A to Mr. Bishop's letter of August 31, 1982.

I trust the enclosure responds adequately to all aspects of this Violation. If you have any questions, or if we can provide additional information, please contact me.

Sincerely,



Enclosure

cc: A. E. Chaffee (NRC - Site Inspector - San Onofre Unit 2)

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ENCLOSURE

Response to the Item of Non-Compliance identified in Appendix A to NRC  
Inspection Report 50-361/82-25, 50-362/82-16

ITEM

Appendix A to Mr. Bishop's letter of August 31, 1982, states as follows:

"Technical Specification 6.8.1 states: "Written procedures shall be established, implemented and maintained covering..."

- a. The applicable procedures recommended in Appendix 'A' of Regulatory Guide 1.33, Revision 2, February 1978." Appendix "A" of Regulatory Guide 1.33, Revision 2, February 1978 recommends, in part, the following procedures:

- "3. Procedures for Startup, Operation, and Shutdown of Safety-Related PWR Systems

Instructions for energizing, filling, venting, draining, startup, shutdown, and changing modes of operation should be prepared, as appropriate, for the following systems:

- b. Auxiliary Feedwater System"

"In accordance with the above requirement, Operating Instruction S023-2-4 "Auxiliary Feedwater System Operation" Revision 3, including Temporary Change Notices 4 and 5, was approved for use on May 17, 1982.

"This procedure describe two modes of operation for feeding the steam generators. Step 6.2.4 describes the flow path and control mode for feed rates greater than 200 gpm to a generator. Step 6.5 describes the allowed flow path for flow rates less than 200 gpm to a generator. Neither of these flow paths include reverse flow through Kerotest valves 553 or 154.

"Contrary to the above, on May 27, 1982, at approximately 4 p.m., the operators placed the auxiliary feedwater system in an unauthorized lineup which included reverse flow through Kerotest valve 154. This lineup resulted in overstressing of the auxiliary feedwater cross connect piping due to vibration induced metal fatigue. In the following weeks, during further follow-up testing and normal operation of the system, the overstress eventually contributed to two weld failures in the crossover line vent piping and the failure of valve 154.

"At the time of this occurrence the operators and other staff personnel were not aware of the damage this unauthorized lineup would cause. However, certain staff personnel, including the operators, were aware that reverse flow through Kerotest valves was unpredictable. Further, the operators were aware that backflow through Kerotest valves was to be avoided when possible."

"This is a Severity Level IV Violation. (Supplement I)."

RESPONSE

1. Corrective Steps Which Have Been Taken and Results Achieved

- a. Operating instruction S023-2-4 was revised effective August 31, 1982 to include the following caution:

"Misalignment of the 2 inch crosstie can result in backward flow through "Kerotest" type valves which will result in valve damage and potential excessive vibration. Strict compliance with the following alignment is necessary."

- b. With respect to the AFW system vibration effects on the integrity of the system the following actions were taken:

1. On June 9 and June 11, 1982 tests were performed to quantify the vibration effects noted on May 27, 1982. An engineering evaluation was completed to identify any portions of the system which could potentially have been degraded by the event. Two small portions of the 2 inch intertie line were replaced as a precautionary measure as a result of this evaluation. It should be noted that the intertie line is not used for any safety related Auxiliary Feedwater System function but is normally isolated from the system by locked closed valves. During emergency conditions, the AFW system automatically supplies feedwater to the steam generator with this intertie line isolated from the rest of the AFW system.
2. On June 12, 1982 liquid penetrant examinations were performed on 19 vent and drain installations similar to the vent valve S21305MR807 installation which failed. No relevant indications of defects were found.
3. Kerotest valves MU154 and MU553 were disassembled and inspected. Minor damage to MU553 internals was noted and repaired. MU154 exhibited more significant internals damage and was replaced.
4. AFW System supports were inspected. Minor damage to two restraints on the 2 inch intertie line was noted. The damaged restraints were replaced.

2. Corrective Steps Which Will Be Taken To Avoid Further Items Of Non-Compliance

- a. As part of their requalification program, licensed operators have been instructed in the details of Kerotest valve design and the problems associated with reverse flow through them. A video taped valve manufacturer representative presentation is used for this instruction. Additionally the presentation is now part of the initial licensed operator training program.
- b. Licensed operators were also instructed by means of special order 82-27 to be alert for flow instabilities within the AFW system by looking for local vibrations/abnormalities during manual operations in the AFWS pump room, and by looking for remote indications of flow instabilities based on instrumentation in the control room. If such instabilities are noted, important parameters such as steam generator level, temperature, pressure, feed rate, system alignment and operating conditions (e.g., chemical additions in progress, blowdown rate, etc.) are to be recorded and station engineering immediately notified.
- c. The station's strong position with respect to the need for verbatim compliance with procedures will continue to be stressed in training programs and station management guidance.

3. The Date When Full Compliance Will Be Achieved

Full compliance was achieved on August 31, 1982 when procedure S023-2-4 was revised to include the caution identified in Section 1.a above.

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