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2244 WALNUT GROVE AVENUE
ROSEMEAD, CALIFORNIA 91770

KENNETH P. BASKIN
VICE PRESIDENT

TELEPHONE
818-302-1401

August 29, 1988

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Gentlemen:

Subject: Docket Nos. 50-361 and 50-362
Reply to a Notice of Violation
San Onofre Nuclear Generating Station
Units 2 and 3

Reference: Letter, Mr. R. J. Pate (NRC) to Mr. Kenneth P. Baskin (SCE),
dated July 29, 1988

The above referenced letter forwarded NRC Inspection Report Nos. 50-361/88-18 and 50-362/88-19 and a Notice of Violation resulting from the special announced inspection conducted by Messrs. J. F. Melfi, and M. W. Yost during the period of June 27 through July 1, 1988. In accordance with 10 CFR 2.201, the enclosure to this letter provides the Southern California Edison (SCE) reply to the subject Notice of Violation.

If you require any additional information, please so advise.

Very truly yours,

Kenneth P. Baskin

Enclosure

cc: J. B. Martin, Regional Administrator, NRC Region V
F. R. Huey, NRC Senior Resident Inspector, San Onofre Units 1, 2 and 3

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ENCLOSURE

RESPONSE TO NOTICE OF VIOLATION

Appendix A to Mr. R. J. Pate's letter, dated July 29, 1988 states in part:

"As a result of the inspection conducted during the period of June 27 through July 1, 1988, and in accordance with the 'General Statement of Policy and Procedure for NRC Enforcement Actions,' 10 CFR Part 2, Appendix C (1987), the following violation was identified.

10 CFR 50, Appendix B, Criterion V, states, 'Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures or drawings. Instructions, procedures, or drawings shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished.'

San Onofre Nuclear Generating Station Construction Specification, CS-E03, Revision 17, entitled 'Safety Related and Non-Safety Related Electrical Construction Specification for Cable Splicing, Termination and Supports,' Chapter 11.1, states in part:

'Safety Related power, control and instrumentation field cables, of different safety related separation groups, entering a control switchboard, equipment cabinet, panel or termination box shall maintain a 6 inch minimum physical separation between field cables of redundant Safety Related groups...'

and

Units 2 and 3 separation groups are defined as follows:

Separation Group A: Channel A or Train A
Separation Group B: Channel B or Train B.

Contrary to the above, at the time of the inspection, the Unit 2 Train A and Train B cables in Panel CR59 (Post-Accident Monitoring) were in direct contact with one another at the bottom of the cabinet.

This is a Severity Level IV Violation."

RESPONSE:

1. Reasons for the violation.

SCE admits that Train A and Train B cables in Panel 2CR59 were in direct contact with each other at the bottom of the cabinet at the time of the NRC inspection. This is a non-performance with CS-E03, Electrical Construction Specification for Cable Splicing, Termination, and Supports as stated in the NOV.

This non-conformance probably resulted from recent design modification activity in the panel; however, our investigation was not able to conclusively identify when this condition occurred. Potential causes for the violation of CS-E03 criteria are as follows:

- a. Lack of attention to detail regarding the application and use of CS-E03 by field installation personnel.
- b. The design for 2CR59 did not provide sufficient consideration of positive mechanical means to ensure cable separation (i.e. the use of barriers, tie wraps, etc).

Our investigation has determined that the most recent work in this panel was performed during the Unit 2 Cycle 4 refueling outage under Design Change Package 2-6605. The work scope of this DCP included the cutting of tie wraps and the pulling of cable from the coils at the bottom of the cabinet. Therefore, the construction of this DCP (2-6605) was the most likely cause of non-conformance with CS-E03. This same Design Change Package was in the process of being constructed at Unit 3 (DCP 3-6605) during the Cycle 4 refueling outage when the Unit 2 violation was discovered.

2. Corrective steps that have been taken and the results achieved.

Train A and Train B cables in 2CR59 were separated and tied to opposite sides of the panel to achieve and maintain the six inch separation required by CS-E03 and RG 1.75. To ensure compliance with CS-E03 for 3CR59, the Train A and Train B cables were regroomed prior to completion of DCP 3-6605. Additionally, immediately upon discovery of the non-conformance in 2CR59, Unit 3 control room panels containing redundant trains and panel 3L042 were inspected for compliance with CS-E03 during the recent outage.

It should be noted that because CS-E03 is written in a conservative manner to ensure conformance with RG 1.75, an analysis was performed on the cables in the NOV to determine if sufficient energy could have been transmitted by these cables in their as-found condition to cause them to interact during circuit failures. This analysis concluded that based on the low energy these circuits transmit they would not interact during circuit failures. Therefore, the condition identified in the subject NOV did not compromise plant safety.

3. Corrective steps that will be taken to avoid further violations.

Because Unit 2 was at full power when the violation was identified and Unit 3 was shutdown for refueling, Unit 3 control room panels were inspected for compliance with CS-E03. This inspection resulted in the issuance of approximately 25 Non-Conformance Reports (NCRs) for Unit 3. These nonconformances were dispositioned by grooming the panel wiring to comply with CS-E03 where practical or by performing specific engineering evaluations. The specific engineering evaluations revealed that four

Unit 3 panels had conditions that did not comply with RG 1.75 commitments in the FSAR. These conditions were determined to be non-safety significant and were reworked to comply with CS-E03. These same panels at Unit 2 were inspected and three similar conditions were found. Each of these Unit 2 conditions were determined to be non-safety significant and have been corrected. The remainder of the Unit 2 control room panels and panel 2L042 containing redundant trains will be inspected for compliance with CS-E03 during the next outage of sufficient duration (when the risk of an inadvertent plant transient/trip does not exist). This delay in completing the Unit 2 inspection is justified based on 1) the absence of safety-significant findings for the cases analyzed, 2) the inspections performed on Unit 2 to date, and 3) the inspections completed at Unit 3.

Other corrective steps that will be taken are:

- a. Evaluate existing Engineering and Construction Department training programs regarding CS-E03 and enhancement of the programs as appropriate, and
- b. Install separation barriers in the bottoms of panels 2CR59 and 3CR59.
- c. During the next outage of sufficient duration, confirm that all cabinets with redundant train cable or circuits not yet inspected meet San Onofre Units 2 and 3 RG 1.75 commitments.
- d. Where possible, a separation barrier will be installed in the bottom of panels containing redundant trains to assure compliance with R.G. 1.75 commitments.

Any future deficiencies found as a result of inspections or investigations noted above will be identified and resolved using the NCR process.

4. Date when full compliance will be achieved.

Compliance with CS-E03 was achieved on June 30, 1988 for 2CR59. Physical separation was provided by tying the redundant trains in the bottom of these Panels to opposite panel sides to ensure compliance with the RG 1.75 requirement for a minimum of six inches clear distance between trains.