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 50-362 San Onofre Nuclear Station, Unit 3, Southern California 05000362
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SUBJECT: Advises that inadvertent ESF actuation sys 821207 event considered isolated case of multiple independent failures. Design options to prevent simultaneous recirculation actuation signal & safety actuation injection signal listed.

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April 12, 1984

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Director, Office of Nuclear Reactor Regulation
Attention: Mr. George W. Knighton, Branch Chief
Licensing Branch No. 3
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Gentlemen:

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

- References: (1) Letter, SCE (K. P. Baskin) to NRC (G. W. Knighton)
dated January 14, 1983
- (2) Letter, SCE (K. P. Baskin) to NRC (G. W. Knighton)
dated February 3, 1983
- (3) Letter, SCE (M. O. Medford) to NRC (G. W. Knighton)
dated September 27, 1983

Southern California Edison (SCE) provided information relative to the inadvertent Engineered Safety Feature Actuation System (ESFAS) event at San Onofre Unit 3 on 12/7/82, in References (1) and (2) above. Reference (2) included a design review of the Plant Protection System (PPS); an analysis of the impact of various combinations of inadvertent ESF signals on plant operation; and answers to specific NRC questions involving the event and plant design. It was concluded in the above that: 1) upon completion of a design change involving Channels A and D J-3109 connectors (implemented the first quarter of 1983), no single failure within the PPS could result in inadvertent ESFAS initiation, 2) the current ESFAS design is in conformance with the applicable design criteria (10 CFR 50 Appendix A Criterion 35 and Reg. Guide 1.53) and 3) the consequences of inadvertent ESFAS initiation during normal operation remain bounded by existing FSAR Chapter 15 analyses.

As noted in Reference (2), the potential causes for the inadvertent ESFAS event (loose leads on the Channel D matrix power supply and a defective switch on the Channel A matrix power supply) have been repaired and administrative controls applied to restrict access to the PPS circuitry in order to preclude inadvertent ESFAS initiation through operator error. In addition, SCE completed the 3-month monitoring program of Unit 3 vital bus power supply continuity discussed in Reference (2). The results of the survey showed no significant variance in power supply output voltage on any of the four vital power channels. The inadvertent ESFAS actuation event of 12/7/82 is therefore considered to be an isolated case of multiple independent failures (an initiating event rather than a failure mode to be postulated in

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conjunction with a design basis event). SCE considers all requirements/commitments relative to the December 7, 1982 inadvertent ESFAS event to be satisfied based on the above.

As noted in References (1) and (2), an additional short-term design change was implemented to remove automatic closure of the High Pressure Safety Injection (HPSI) pump miniflow isolation valves on a Recirculation Actuation Signal (RAS), in order to prevent HPSI pump damage in the event of inadvertent, simultaneous RAS and Safety Injection Actuation Signals (SIAS) with high RCS backpressure. While SCE considers the probability of inadvertent simultaneous RAS and SIAS to be sufficiently low, the large potential impact on plant equipment and operation of such an event with high RCS backpressure remains a concern. Consequently, SCE intends to leave the above short term design change in place until such time as a long-term change may be implemented to eliminate the possibility of HPSI damage due to inadvertent simultaneous RAS and SIAS.

Consistent with our commitment in References (1), (2) and (3), SCE has evaluated the cost, feasibility and potential benefit of several long-term design options to prevent and/or mitigate the consequences of an inadvertent simultaneous RAS and SIAS. The options considered included:

1. Energize-to-actuate PPS logic.
2. Piping changes involving HPSI pump recirculation from discharge to suction.
3. Containment emergency sump high level permissive for each train of miniflow isolation valves.

The current PPS/ESFAS configuration complies with the applicable design criteria as noted above; however, SCE is currently performing a detailed evaluation of the potential benefit/feasibility of Options 2 and 3. In addition, SCE is evaluating other changes to improve PPS reliability, such as auctioneered NSSS instrumentation power supplies. We will advise you of any prospective design changes on completion of these evaluations (currently scheduled for the third quarter of 1984). If you have any questions, please call me.

Very truly yours,



cc: R. H. Engelken, Region V
H. Rood, Project Manager, NRC