



Southern California Edison Company

23 PARKER STREET  
IRVINE, CALIFORNIA 92718

WALTER C. MARSH  
MANAGER OF NUCLEAR REGULATORY AFFAIRS

April 1, 1994

TELEPHONE  
(714) 454-4403

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

Gentlemen:

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

The following responds to questions raised by the NRC during the February 1, 1994 presentation by Southern California Edison (SCE) on the status of its "Safety Monitor." Specifically, members of the NRC asked 1) what elements of the proposed Technical Specifications (TS) for shutdown conditions SCE found most onerous, and 2) how the proposed TS would result in the ten day refueling outage extension predicted at San Onofre.

SCE had stated during its presentation that implementation of the NRC's proposed Shutdown TS would reduce the likelihood of a core damage event by a small amount, i.e. less than 1E-6 per refueling outage. SCE had concluded this by comparing the core damage probabilities associated with a) the plant configuration for a typical San Onofre outage, and b) the configuration required by the proposed Shutdown TS. These calculations were performed using a full scope Level 1 probabilistic risk assessment (PRA) model SCE had developed to study shutdown conditions.

The greatest impacts (both positive and negative) of the proposed Shutdown TS on a typical San Onofre refueling outage would occur when the reactor coolant system (RCS) was at low inventory (i.e. less than 23 feet above the vessel flange). During this period the proposed TS would require the operability of two high pressure safety injection pumps and two emergency diesel generators.

The positive impact of this proposed requirement at San Onofre would be small because of measures already in place to minimize outage risk. A typical San Onofre refueling outage plan 1) ensures redundant RCS makeup capability during periods of low inventory, although not necessarily via a second high pressure safety injection pump, and 2) ensures through a "casualty procedure" that redundant emergency power is available via a manually effected cross connection between the diesel generators of Unit 2 and Unit 3.

The negative impact of this proposed requirement would be that maintenance work on the emergency diesel generators, which typically begins prior to fuel offloading, would have to be postponed until the beginning of fuel offloading and would have to be completed prior to the completion of fuel reloading. This

9404070069 940401  
PDR ADDCK 05000361  
P PDR

Aool  
1/4

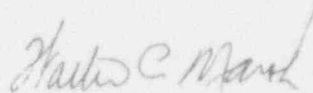
would be necessary because this is the only time during the outage when the water level can be raised to greater than 23 feet above the vessel flange. As shown in the enclosed Generic Refueling Outage Schedule, the result would be an outage extension of 16 days. (This extension was understated by 6 days during the February 1 presentation.)

SCE does not disagree with the intent of the proposed Shutdown TS. We recognize the potential risks associated with shutdown conditions and have undertaken an aggressive program to manage them including an enhanced Shutdown Safety Program based on NUMARC 91-06 guidance and utilization of a detailed shutdown PRA. However, we believe that the currently proposed TS miss the mark in two areas. First, the prescriptive nature of the proposed TS excludes alternative but equally effective means of managing outage risk. Secondly, the criteria which determine when TS apply do not necessarily reflect the actual risk significance of the plant configuration. For example, TS requirements for makeup and/or emergency power are tied to water level rather than the actual condition of interest which is the amount of time between a loss-of-shutdown-cooling event and boiling or uncovering of the core.

As indicated during the February 1, 1994 meeting, SCE has a long history of aggressively managing risks in both operating and shutdown conditions. As a result, we have come to believe that risk management which is effective and risk management which is cost-effective need not be mutually exclusive.

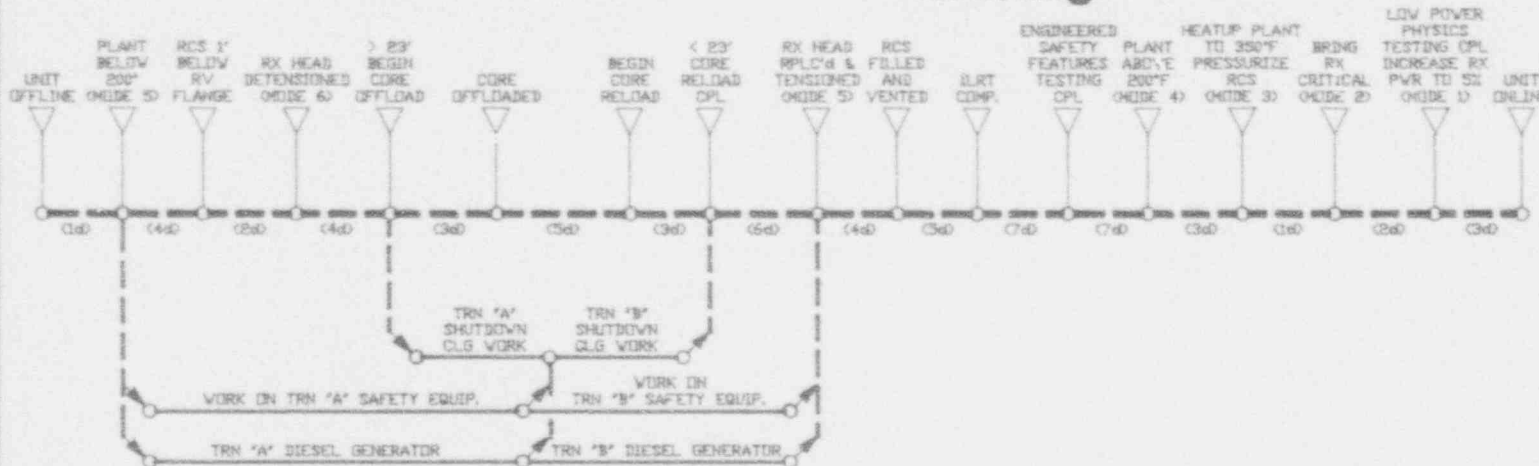
If you would like any additional information or would like to discuss this issue further, please let me know.

Sincerely,



cc: K. E. Perkins, Jr., Acting Regional Administrator, NRC Region V  
J. A. Sloan, NRC Senior Resident Inspector, San Onofre Units 2 & 3  
M. B. Fields, NRC Project Manager, San Onofre Units 2 and 3

## GENERIC REFUELING OUTAGE SCHEDULE (Existing)



## (After New Shutdown Tech. Specs)

