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

April 2, 1990

Docket Nos. 50-361
and 50-362

MEMORANDUM FOR: Roy Zimmerman, Director
Division of Reactor Safety and Projects
Region V

FROM: John A. Zwolinski, Acting Assistant
Director for Region V
Division of Reactor Projects - III,
IV, V and Special Projects

SUBJECT: RESPONSE TO REGION V TIA - REVIEW OF THE SAN ONOFRE UNITS 2 AND 3 COMPONENT COOLING WATER SYSTEM (TAC NOS. 71194 AND 71195)

As requested in the memorandum from Region V dated November 10, 1988, the Plant Systems Branch has reviewed the San Onofre Units 2 and 3 component cooling water (CCW) system design and performance capability following a safe shutdown earthquake (SSE) and high energy line break to confirm that system safety functions can be achieved in accordance with the system design basis. Our review considered the information provided by the licensee in their Component Cooling Water System Operability Assessment which was sent to the staff by letter dated December 16, 1988, and supplemented by additional information provided in letters dated July 25, 1989 and January 4, 1990 in response to staff requests.

The results of our review are discussed in the enclosed evaluation. Based on our review, we conclude that the CCW system as currently designed does not conform to the criteria of the Standard Review Plan (SRP) for ensuring safe plant shutdown following a SSE. This conclusion is reached because contrary to staff guidelines, the licensee has assumed only a moderate energy leakage crack rather than a full break in the largest nonseismically qualified CCW system line when establishing the closure time of the critical/noncritical loop isolation valve. Isolation of the critical (seismic) portion of the system from the nonseismic portion is achieved by closure of the loop isolation valves on a low-low level signal from the surge tank. Because of this deviation, these valves would not close in sufficient time to ensure adequate CCW pump NPSH and consequential pump damage assuming loss of inventory from a full CCW pipe rupture. Loss of the CCW system has a significant impact on plant safety because it results in an inability to cool the reactor coolant pump seals possibly leading to a seal failure and associated small break LOCA. Further, because the high pressure safety injection pumps are also cooled by the CCW system, the resulting small break LOCA can not be mitigated.

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Despite the above finding, it appears clear that the staff accepted the design of the CCW system as presented at the time of licensing of San Onofre Units 2 and 3. Therefore, to impose the above staff position as contained in the SRP would be a backfit. The specific concern for loss of CCW and its impact on reactor coolant pump (RCP) seal cooling is being addressed in the resolution of Generic Issue (GI) 23. Therefore, rather than perform a plant specific backfit analysis for San Onofre Units 2 and 3 at this time, we believe the regulatory analysis for GI 23 is the appropriate means by which to impose further requirements on the licensee. The resolution of GI 23 is expected in the near future.

It should also be noted that the licensee previously provided the results of tests on the Byron Jackson RCP seals which the licensee stated provide evidence of long-term seal integrity under loss of cooling water conditions. The staff is considering these test results under the GI 23 resolution effort.

We conclude that with the above exception, the licensee has satisfactorily addressed our concerns, and has demonstrated acceptable CCW system performance following a SSE and high energy line break. However, we believe resolution of the concern of full break versus critical crack postulation in the nonseismic portion of the CCW system should be deferred to the GI 23 resolution, and, therefore, we believe no further action is necessary at this time.

Finally, as discussed with Mr. S. Richards of your staff, we do not recommend enforcement action against the licensee regarding the 50.59 review on this issue. The reasons are the age of the issue, the generally acceptable position of the licensee, and the lack of clear review criteria for 50.59 evaluations (this was prior to NSAC-125 guidance).

We consider our efforts on TAC Nos. 71194 and 71195 to be complete.

John A. Zwolinski, Acting Assistant
Director for Region V
Division of Reactor Projects - III,
IV, V and Special Projects

Enclosure:
As stated

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original signed by John A. Zwolinski

John A. Zwolinski, Acting Assistant
Director for Region V
Division of Reactor Projects - III,
IV, V and Special Projects

Enclosure:
As stated

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[RESP TIA 71194/95]