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

Gentlemen:

Subject: **Docket No. 50-206**
Post Accident pH in Containment Sump
San Onofre Nuclear Generating Station, Unit 1

The purpose of this letter is to inform you that we are implementing administrative controls to: a) revise the total amount of anhydrous Trisodium Phosphate (TSP) stored in the containment sump; and b) implement an upper limit on the integrated boron inventory in the Refueling Water Storage Tank (RWST) and the Boric Acid Storage Tank (BAST) taking into account the Reactor Coolant System (RCS) boron inventory. These administrative controls are necessary to ensure the total boron inventory in the RWST, BAST, and the RCS is limited and that the post accident pH remains between 7.0 and 7.5 with the new required inventory of TSP in the containment sump.

As part of our Design Basis Documentation (DBD) program it was determined that the contents of the Boric Acid Storage Tank (BAST) were not considered in previous containment sump post accident pH calculations. In accordance with 10 CFR 50.73, a Licensee Event Report (LER) will be submitted for this event. A revised calculation which incorporates the BAST has been performed and supports interim operation until a formal Technical Specification change request can be prepared and approved by the NRC. As a result of this calculation, more restrictive limits on the quantities of boron and TSP are required than those currently specified in the Technical Specifications. The design basis for the amount of TSP required for pH control is the LOCA at full power operation.

We have discussed this matter with the SONGS 1 NRC Project Manager, Mr. George Kalman. As agreed in that conversation, SCE will implement administrative controls to ensure compliance with the revised design requirements until

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an amendment application for the Technical Specifications changes is submitted and approved by the NRC. The amendment application will be submitted within three months after return to service.

BACKGROUND

The RWST provides borated water for safety injection, containment spray, and flooding of the refueling cavity during refueling operations. The BAST is used for storing boric acid before adding it to the RCS and is part of the Boric Acid System which provides the RCS with boric acid necessary for chemical shim control and shutdown requirements. Following a Loss of Coolant Accident (LOCA) borated water originating from the RCS, safety injection, containment spray, and potentially the BAST, collects in the containment sump. As stated in the Basis of Technical Specification 3.3.1, a minimum pH of this water is maintained to prevent stress corrosion cracking of the systems and components exposed to the circulating water. Control of the post LOCA sump water pH is maintained by limiting the boron content of the RWST and the BAST, and by providing TSP as a chemical buffer in the containment sump.

CURRENT BORON AND TSP LIMITS

The current limitations on boron and TSP are as follows:

- a) The RWST boric acid concentration may not be less than 3,750 ppm, nor more than 4,300 ppm. (Technical Specification 3.3.3(a).)
- b) The BAST must contain at least 3,450 pounds of boric acid dissolved in at least 3,500 gallons of water. (Technical Specification 3.2(A)(3).)
- c) A minimum amount of 5,400 pounds of anhydrous TSP must be stored in the containment sump. (Technical Specification 3.3.1.A(1)(j).)

As stated in the basis for Technical Specification 3.3.3, the limits on boron and TSP assure that post accident containment sump water is maintained at a pH between 7.0 and 7.5.

TECHNICAL SPECIFICATIONS CHANGES AND INTERIM ADMINISTRATIVE CONTROLS

Technical Specifications 3.2, 3.3.1, 3.3.3, and 4.2 require revision to reflect the results of the above-mentioned recalculations. In the interim, in order to ensure the plant is operated within the recalculated limits while maintaining compliance with the Technical Specifications, the following administrative controls will be implemented:

- a) Store between 6232 ± 125 pounds of anhydrous TSP in the containment sump storage racks.

- b) The total boron inventory available for ECCS injection in the RWST and BAST, plus the RCS boron inventory shall not exceed 9,346 pounds. This quantity of boron is based on the sump pH requirements and results from an analysis of the design basis Loss of Coolant Accident (LOCA) at full power operation.

With the amount of anhydrous TSP in the containment storage racks outside the 6232 ± 125 pound range, or with the total boron inventory in the RWST, the BAST, and the RCS exceeding 9,346 pounds, restore the TSP and/or boron to within the required limits within 72 hours, or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

In addition, the current requirement for TSP surveillance will also be revised. The current specification requires surveillance of three storage racks and dissolution of TSP from a sample rack. We have now added a fourth rack and have increased the size of the sample to be tested. The surveillance requirements will be administratively controlled to require surveillance of the additional rack and testing of the new sample.

CONCLUSION

These administrative controls assure that the post accident containment sump pH is maintained between 7.0 and 7.5. The administrative controls on TSP and boron are within the ranges of values allowed by the current Technical Specifications. An amendment application will be submitted within three months after restart to incorporate the new limits into the Technical Specifications.

If you have any questions, or you would like additional information, please contact me.

Very truly yours,



cc: G. Kalman, NRC Project Manager, San Onofre Unit 1
J. B. Martin, Regional Administrator, NRC Region V
C. W. Caldwell, NRC Senior Resident Inspector, San Onofre Units 1, 2 & 3
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