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January 2, 1991

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

Gentlemen:

Subject: **Docket No. 50-206**
DC Thermal Barrier Pump
San Onofre Nuclear Generating Station, Unit 1

This letter is to inform you that we intend to update our Station Blackout procedures which were developed in response to Generic Letter 81-04, "Emergency Procedures and Training For Station Blackout Events." This letter also requests permission to remove the Component Cooling Water System from service for 16 hours to do a performance test on the DC thermal barrier pump.

Generic Letter 81-04 Station Blackout Program

In response to Generic Letter 81-04 we developed procedures to respond to a station blackout. As part of these procedures, the DC thermal barrier pump is utilized to maintain Reactor Coolant Pump (RCP) seal integrity by providing an alternate method to cool the RCP seals.

Since our Generic Letter 81-04 Station Blackout Program was developed, we have developed a fire protection program in accordance with 10CFR50, Appendix R. As part of the fire protection program we installed a Dedicated Safe Shutdown (DSD) Diesel in addition to the existing emergency diesels. The DSD diesel powers components required to achieve safe shutdown in the event of certain design basis fires.

Certain Appendix R fires assume a loss of power similar to a station blackout except that the DC loads are stripped to avoid spurious operation. These events are more severe than a station blackout. We accommodate these events without using the DC thermal barrier pump. RCP seal cooling flow is re-established by starting the north charging pump using power from the DSD diesel within 30 minutes. Tests have shown that RCP seal leakage remains controlled as long as seal cooling is established within approximately 30 minutes.

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We plan to revise our station blackout procedures to include use of the DSD system similar to its use for the Appendix R fires. This procedure change will allow greater operating flexibility during Cycle 11. Because the DC thermal barrier pump is not addressed in the existing Technical Specifications, a shutdown may be required if the pump were determined to be inoperable while the plant was operating. By clarifying that the DC thermal barrier pump is not required during a station blackout, an unnecessary plant shutdown may be avoided.

The revised procedures will instruct the operator to establish RCP seal cooling flow using the DSD system in the event seal cooling by the DC thermal barrier pump is lost. Consistent with the capabilities of the seals, cooling flow will be re-established within 30 minutes.

Although the details of our Generic Letter 81-04 Station Blackout Program have not been submitted in the past, we felt it prudent to notify you of this change in our program. This assures that our position is clear regarding use of the DC thermal barrier pump and the dedicated safe shutdown system for station blackout during operating Cycle 11. We will update our procedures and revise any necessary backup documentation before restart from the Cycle 11 refueling outage.

During the Cycle 12 refueling outage our method of compliance for station blackout will change from our existing program developed in response to Generic Letter 81-04, to the program we are currently developing in response to the Station Blackout rule, 10CFR50.63. As stated in our letter dated December 5, 1990, our 10CFR50.63 station blackout program will only credit the dedicated safe shutdown system to provide RCP seal cooling. It should be noted that the DC thermal barrier pump will not be removed. If it is available, it will provide RCP seal cooling flow until the DSD and charging pump are started.

Unresolved Safety Issue 23

In an issue related to station blackout, the NRC staff has been working on Unresolved Safety Issue 23 concerning Reactor Coolant Pump (RCP) seal failures. Preliminary findings indicate that failure of the RCP seals may result in leakage rates significantly greater than the 25 gpm assumed by NUMARC 87-00. If the final resolution of Unresolved Safety Issue 23 results in higher RCP leakage rates than those assumed in NUMARC 87-00, the station blackout guidance will need to be reevaluated.

Therefore, in anticipation that a change in regulatory requirements may require use of the DC thermal barrier pump in the future, we have decided to conduct a test to determine its performance characteristics.

DC Thermal Barrier Pump Test

Due to the unique window of opportunity presented by the low thermal load in the spent fuel pool during the present outage, we are planning to test the DC thermal barrier pump during this outage.

The DC thermal barrier pump is designed to be used during a loss of power when the Component Cooling Water (CCW) system would not be powered. The DC thermal barrier pump discharges into the CCW system, however the discharge pressure of the pump is less than the normal operating pressure of the CCW system. Therefore, to test the flow capacity of the DC thermal barrier pump, the CCW system must be removed from service for approximately 16 hours.

NRC concurrence with this action is necessary because we are required to keep one train of the CCW system in operation during the Cycle 11 outage to meet the requirements of Amendment No. 132 to the Unit 1 License. The CCW system provides cooling to the Spent Fuel Pool (SFP) through the spent fuel pool heat exchanger. The only planned exception to this requirement was to be a 72 hour period to accommodate modifications of the 480 volt electrical system.

Interrupting the CCW operation for 16 hours will be acceptable because the heat load in the SFP is low. The time required for the SFP to reach boiling has been calculated to be at least 45 hours at 50 days after core offload. This calculation was performed assuming an initial SFP temperature of 114°F at 50 days after core offload with a sea water temperature of 75°F. The current SFP temperature is less than 114°F and sea water temperature is less than 75°F. Because the decay heat load decreases with time, the heat load is now less than it was at 50 days after core offload. For these reasons it will take significantly longer than 45 hours for the SFP to reach its boiling point. Therefore, an adequate margin of safety exists to allow the CCW system to be out of service for 16 hours to accommodate the DC thermal barrier pump test.

While performing the test, the CCW system will remain operable but will not be in operation. As part of the test procedure, administrative controls will be implemented to monitor the spent fuel pool temperature during the test. If the temperature exceeds 120°F, a train of the CCW system will be returned to service. This will assure that the SFP temperature will remain below analyzed limits.

As discussed in a telephone conversation between Mr. James Dyer of the NRC staff and Mr. R. Ornelas of SCE, your approval of this exception to the

requirements of Amendment No. 132 is requested by January 7, 1991 so we will be able to perform the test prior to reloading the core during the current refueling outage.

If you have any questions, please do not hesitate to call me.

Very truly yours,

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