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Director, Office of Nuclear Reactor Regulation
Attention: Mr. G. E. Lear, Director
PWR Project Directorate No. 1
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Gentlemen:

Subject: Docket No. 50-206
Overpressure Mitigation System Technical Specifications
San Onofre Nuclear Generating Station
Unit 1

References: A. Amendment Application No. 65 submitted by letter from J. B. Moore, SCE, to E. G. Case, NRC, dated August 29, 1977

B. Amendment Application No. 76 submitted by letter from J. H. Drake, SCE, to H. R. Denton, NRC, dated October 20, 1977

Proposed Technical Specifications for low temperature overpressure protection were submitted with the Reference A and B letters. Proposed Change No. 63, submitted with the Reference A letter, expanded Technical Specification 3.3.2, "Shutdown Status," to provide for additional protection from overpressurization when the unit is in a low temperature water solid condition. Proposed Change No. 71, submitted with the Reference B letter, proposed provisions for the operation of the then newly installed Overpressure Mitigation System (OMS). The purpose of this letter is to provide additional information regarding the basis for those proposed technical specifications to facilitate NRC review and to clarify the basis for and use of the 400 psig system arming alarm setpoint in view of the need for low temperature overpressure protection at temperatures below 360°F.

Basis for "Two Positive Barriers"

Specification 3.3.2, "Shutdown Status," of Proposed Change No. 63 expands the existing Specification A of that section which provides for "two positive barriers" between the Feedwater Condensate Systems and the piping connections to the Reactor Coolant System (RCS). The existing specification is intended to provide assurance that a boron dilution event will not occur. The specification is being revised by Proposed Change No. 63 so that it will also emphasize the need for reactor overpressure protection from both the Feedwater Condensate System and the Safety Injection System (SIS). The additional specification would specifically state the need for two positive



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barriers anytime the RCS is water solid below 500 psig. The change also adds an additional option of a positive barrier: the feedwater pumps when shutdown with the breaker in the racked-out condition. This additional provision is annotated to indicate that it can only be used for overpressurization protection. Since two of the three other options for positive barriers have a provision that allows them to not be in effect during "no-flow" testing of the SIS, the additional provision of having the feedwater pumps breakers in the racked-out condition is necessary to still have two positive barriers for overpressure protection should the RCS be water solid during no-flow testing. The feedwater pumps with the breakers in the racked-out position are also available at other times when maintenance or other activities are being performed on the Condensate and Safety Injection Systems.

Proposed Change No. 63 also includes a proposed basis for inclusion of the OMS requirements. As written, the basis existing in the current edition of the Technical Specifications would be completely supplanted with the new basis. This, however, would eliminate a portion of the existing section which specifies the basis for boron dilution protection. The final version of the basis should actually be a combination of the existing and new basis. The basis for requiring "two positive barriers" should therefore be clarified by combining the original basis of Specification 3.3.2 with that of Proposed Change No. 63 to read as follows:

<u>Basis</u>: Under normal conditions, system operational interlocks assure that injection of feedwater condensate into the reactor by the Safety Injection System cannot occur.(1) These interlocks include:

1. Actuation of the safety injection relay which de-energizes the condensate and heater drain pumps and closes the flow path for condensate, thereby preventing injection of feedwater into the coolant system.

2. Interlocks between the condensate isolation valves at the feedwater pump suction and the safety injection header isolation valves at the pump discharge which prevent the opening of the one valve unless the other is closed.

Below 500 psig the Safety Injection System may be removed from service. Below 400 psig, the Feedwater System may be removed from service. During these low pressure shutdown reactor coolant system conditions, the interlocks may be overridden for maintenance and/or test of components of these systems. However, it is still necessary to prevent intrusion of feedwater condensate or safety injection water into the reactor coolant system. Injection of feedwater has the potential to dilute the system and create a potential for a reactivity excursion. Injection of either safety injection water or feedwater, especially during water solid operations, creates the potential for pressurizing above limits established by 10 CFR 50 Appendix G and as reflected in Technical Specification 3.1.3.

The "two positive barriers" required by this specification provide protection of the Reactor Coolant System against boron dilution and overpressurization when in the low pressure and low temperature conditions. Two positive barriers are provided in each potential path between the Feedwater Condensate System, Safety Injection System and the RCS. During periods of no-flow testing, an exception is provided on two of the positive barriers to allow the components involved in the test to perform their test functions while the remaining positive barriers (nos. 3 and 4) remain in effect.

Tagged, as used above, means tagged in accordance with current Southern California Edison Company procedures for tagging of equipment which must not be operated.

Reference (1) Final Engineering Report and Safety Analysis, Paragraph 5.1.

Overpressure Protection System Operability Requirements

Proposed Change No. 71 includes a specification on OMS operability. The specification as worded requires the system to be placed in service anytime RCS pressure is below 400 psig while the pressurizer water level is greater than 50%.

An annunciator is provided in the control room which alarms at 400 psig to inform the operators that the OMS should be placed in service. The alarm is initiated on a pressure signal at a high enough setting to place the system into service prior to cooling below 360°F at which the high pressure setpoint of the PORV's may not provide adequate protection for low temperature overpressure events. The 400 psig setpoint is also set low enough to preclude inadvertent opening of the PORV's at their 500 psig low pressure setpoint when the OMS is placed in service.

In order to clarify that the need for overpressure protection while in the low pressure/low temperature mode of operation is dependent primarily on temperature, an asterisk should be added to the proposed Specification 3.15.A of Proposed Change No. 71 which will indicate that the pressure of 400 psig is intended to assure that protection is provided whenever temperature is below 360°F. The statement to accompany the asterisk should read as follows:

*The placing in service of the OMS at $\leq$ 400 psig is intended to assure that protection is provided whenever temperature is below 360°F. The alarm to arm the OMS being keyed to pressure assures that inadvertent opening of the PORV's does not occur due to placing the OMS into service with RCS pressure above the 500 psig initiation setpoint.

During plant cooldown, the procedure of placing the RHR system into operation at approximately 350°F and 350 psig assures that when the 400 psig arming annunciator alarms, the temperature has not fallen below approximately 360°F. This method of operating the OMS provides adequate protection for potential low temperature overpressurization events.

If you have any questions or require additional information, please let me know.

Very truly yours,

M. D. Medford