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ACCESSION NBR:8512030548 DOC.DATE: 85/11/27 NOTARIZED: NO DOCKET #
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 50-362 San Onofre Nuclear Station, Unit 3, Southern Californ 05000362
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 KNIGHTON,G.W. Office of Nuclear Reactor Regulation, Director (post 851125)

SUBJECT: Application for amends to Licenses NPF-10 & NPF-15, revising
 Tech Spec 3/4-1.1.3, "Moderator Temp Coefficient," to
 reflect use of more negative temp coefficient needed for
 end-of-cycle operations in Cycle 2.Fee paid.

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November 27, 1985

Director, Office of Nuclear Reactor Regulation
Attention: Mr. George W. Knighton, Branch Chief
Licensing Branch No. 3
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Gentlemen:

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

Enclosed for your review and approval is a proposed change to the San Onofre Nuclear Generating Station (SONGS) Units 2 and 3 Technical Specifications. The proposed change, NPF-10/15-213, revises Technical Specification 3/4.1.1.3, "Moderator Temperature Coefficient", to reflect the use of a more negative temperature coefficient needed for end-of-cycle operations in Cycle 2.

A recent full power measurement of the moderator temperature coefficient (MTC) at 173 Effective Full Power Days (EFPD's) was performed at SONGS 2. It indicated that the projected end-of-cycle MTC value for Cycle 2 may be as negative as -2.76×10^{-4} delta k/k/°F. The change will thus allow a continued operation of SONGS 2 without exceeding the proposed Technical Specification limit on the MTC. The change will revise the present MTC value of -2.5×10^{-4} delta k/k/°F to a more negative value of -3.0×10^{-4} delta k/k/°F. It is a result of a trade-off resulting from a reactivity gain mistakenly discredited in the present safety analyses reported in the Cycle 2 Reload Analysis Report. An evaluation of the most limiting transient event affected by the proposed change shows that the existing safety analyses remain valid and bounding. Thus, the proposed change will not change the conclusion of any safety evaluation.

Based on the projection that the current Technical Specification limit will become inapplicable at 240 EFPD's (February 5, 1986), your completion of review and approval of the proposed change by January 31, 1986

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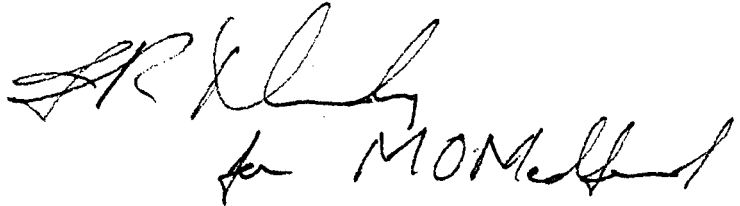
Mr. G. W. Knighton

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is requested to accommodate SONGS 2 operations. In accordance with 10 CFR 170.12, enclosed is the required amendment application fee of \$150.00. A formal request for this change will be included in our next formal amendment application.

If you have any questions regarding the enclosed information, please call me.

Very truly yours,

A handwritten signature in dark ink, appearing to read "F. R. Huey", with a stylized flourish underneath.

Enclosures

cc: Harry Rood, NRC Project Manager
F. R. Huey, USNRC Senior Resident Inspector, Units 1,2, and 3

DESCRIPTION OF PROPOSED CHANGES NPF-10/15-213 AND SAFETY ANALYSIS

This is a request to revise Technical Specification 3/4.1.1.3, "Moderator Temperature Coefficient".

Existing Technical Specifications

Unit 2: See Attachment A
Unit 3: See Attachment C

Proposed Technical Specifications

Unit 2: See Attachment B
Unit 3: See Attachment D

Description

The proposed change revises Technical Specification 3/4.1.1.3, "Moderator Temperature Coefficient". Technical Specification 3/4.1.1.3 defines limitations on moderator temperature coefficient (MTC) to ensure that the assumptions used in the accident and transient analyses remain valid through each fuel cycle. The surveillance requirements for measurement of the MTC during each fuel cycle are performed to confirm the MTC value since this coefficient changes slowly due principally to the reduction in reactor coolant system (RCS) boron concentration associated with fuel burnup. The confirmation that the measured MTC value is within its limit provides assurances that the coefficient will be maintained within acceptable values throughout each fuel cycle.

Technical Specification 3/4.1.1.3 currently states that the moderator temperature coefficient shall be less negative than -2.5×10^{-4} delta k/k/°F at rated thermal power. The proposed change will state that the moderator temperature coefficient shall be less negative than -3.0×10^{-4} delta k/k/°F. This change is required to mitigate the effect of double counting Control Element Assembly (CEA) rod worths in the Cycle 2 transient analyses. The resultant reactivity gain can therefore be applied to support the end-of-cycle operation with an anticipated more negative MTC value bounded by the proposed change.

Safety Analysis

The proposed change described above shall be deemed to involve a significant hazards consideration if there is a positive finding in any of the following areas:

1. Will operation of the facility in accordance with this proposed change involve a significant increase in the probability or consequences of any accident previously evaluated?

Response: No

The proposed negative moderator temperature coefficient change was incorporated as a trade-off resulting from a new reactivity balancing which provides additional margin to the Cycle 2 transient analysis. There are no changes to the results of all transient analyses because of the proposed change. Since the existing safety analysis results are clearly within all acceptable criteria with respect to the system or component of concern as specified in the Standard Review Plan, Section 4.3, the proposed change thus remains accounted for in an equally conservative manner as before. The events most affected by the change are those characterized by a decrease in primary temperature. A detailed review of the most limiting transient event affected by the proposed change at the end of Cycle 2 shows that it will not impose any adverse impact nor result in any increase in the consequences of an accident.

2. Will operation of the facility in accordance with this proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No

No change to operating procedures is involved. Therefore, the proposed change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Will operation of the facility in accordance with this proposed change involve a significant reduction in a margin of safety?

Response: No

The proposed negative moderator temperature coefficient change was incorporated as a trade-off resulting from a new reactivity balancing which provides additional margin to the Cycle 2 transient analysis. The events most affected by the change are those characterized by a decrease in primary temperature and are bounded by the analyses presented in the Reload Analyses Report for Cycle 2. These analyses have already demonstrated that there will not be any increase in the consequences of an accident and the results of the change are clearly within all acceptable criteria with respect to the system or component of concern as specified in the Standard Review Plan, Section 4.3. Since there are no changes to the results of all transient analyses because of the proposed change, the proposed change thus remains accounted for in equally conservative manner as before. Consequently, the proposed change will not involve any reduction in safety margins.

The Commission has provided guidance concerning the application of standards for determining whether a significant hazards consideration exists by providing certain examples (48 FR 14870) of amendments that are considered not likely to involve significant hazards considerations. Example (vi) relates to

a change which either may result in some increase to the probability or consequences of a previously analyzed accident or may reduce in some way a safety margin, but where the results of the change are clearly within all acceptance criteria with respect to the system or component specified in the Standard Review Plan: for example, a change resulting from the application of a refinement of a previously used calculational model or design method. The proposed change is similar to Example (vi) in that the technical specification on the moderator temperature coefficient will reflect a relaxation of an assumption used in the Cycle 2 transient analysis. This revision is a trade-off of reactivity used in the analysis of the most limiting transient at the end of Cycle 2 without affecting any assumptions previously evaluated. Specifically, the proposed change pertains to a revision of uncertainty analyses relating to reactivity coefficients performed in accordance with the guidelines of the Standard Review Plan (SRP), Section 4.3, "Nuclear Design." This revision accounts for a reactivity gain mistakenly discredited as a result of double counting CEA rod worths in the existing safety analyses reported in the Cycle 2 Reload Analysis Report. The proposed change in the MTC value offsets this reactivity gain pursuant to the SRP, Section 4.3.3, so as to conserve the magnitude of overall uncertainties used in the safety analyses. Consequently, this change does not make changes in analytical methods or results of analyses previously found to be acceptable by the NRC and used to demonstrate conformance with the regulations. Furthermore, an evaluation of the most limiting transient shows that the present safety analyses remain valid and bounding. Thus, the proposed change to relax the Technical Specification MTC limit is compensated by an over-conservatism in CEA rod worths without changing the overall conclusion of the present safety analyses. It results in a refinement of uncertainties previously used in the safety analyses in accordance with the SRP, Section 4.3, and is therefore similar to Example (vi) of 48 FR 14870.

Safety and Significant Hazards Determination

Based on the above Safety Analysis, it is concluded that: (1) there is a reasonable assurance that the health and safety of the public will not be endangered by the proposed change; and (2) this action will not result in a condition which significantly alters the impact of the station on the environment as described in the NRC Final Environmental Statement.

SPW:5465F