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KNIGHTON,G.W. Licensing Branch 3

SUBJECT: Application for amend to Licenses NPF-10 & NPF-15,revising Tech Specs 3/4.4.8, "RCS - Pressure/Temp Limits" & 5.7, "Component Cyclic or Transient Limits," to determine cumulative usage factor.Fee paid.

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February 20, 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, Units 2 and 3 (SONGS 2 and 3) Technical Specifiations. The proposed change (PCN NPF-10/15-165) revises Technical Specification 3/4.4.8, "Reactor Coolant System - Pressure/Temperature Limits" and Technical Specification 5.7, "Component Cyclic or Transient Limits". Technical Specification 4.4.8.2 and Technical Specification 5.7.1 are utilized to calculate the pressurizer spray nozzle cumulative usage factor. The change provides the method to determine the cumulative usage factor for the modified pressurizer spray system. Additionally, the proposed cumulative usage factor limit will provide an increased margin of safety to the American Society of Mechanical Engineers (ASME) code limit compared to that provided by the existing cumulative usage factor limit. Since the proposed change ensures that the more conservative limit of the cumulative usage factor will not be exceeded, there will be no reduction in the margin of safety.

The Southern California Edison Company requests NRC review and approval of the proposed change. 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 contact me.

Very truly yours,

M. O. Medford

Enclosures

cc: Joseph O. Ward, California Department of Health Services
Harry Rood, NRC (to be opened by addressee only)
F. R. Huey (USNRC Senior Resident Inspector, Units 1, 2 and 3)

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DESCRIPTION OF PROPOSED CHANGE NPF-10/15-165
AND SAFETY ANALYSIS

This is a request to revise Technical Specification 3/4.4.8.2, Reactor Coolant System - Pressurizer - Heatup/Cooldown, and Technical Specification 5.7, Component Cyclic or Transient Limits, for San Onofre Nuclear Generating Station, Units 2 and 3.

Description

The proposed change revises Surveillance Requirement 4.4.8.2.2 of Technical Specification 3/4.4.8.2, Reactor Coolant System - Pressurizer - Heatup/Cooldown, and Table 5.7-1, Component Cyclic or Transient Limits, of Technical Specification 5.7, Component Cyclic or Transient Limits. The change provides the method to determine the Reactor Coolant System cumulative usage factor for the modified pressurizer spray system. Table 5.7-1 has been revised for calculating the pressurizer spray system cumulative usage factor. This change will allow the evaluation of the modified spray system for temperature transient effects. The new method of calculating the usage factor is based on an analysis in accordance with subarticles NB-3222 and NB-3650 of ASME Section III of the entire spray system, whereas previously only the spray nozzle was considered in the analysis. The change will provide more flexibility in the thermal cycle logging requirements for calculation of the usage factor specified in Technical Specification Section 5.7.1. Nevertheless, the proposed cumulative usage factor limit of 0.65 will provide an increased margin of safety to the ASME Code limit of 1.0 compared to that provided by the existing cumulative usage factor limit of 0.75.

The current Surveillance Requirement 4.4.8.2.2 states that the spray water temperature differential shall be determined for use in Table 5.7-1 at least once per 12 hours during auxiliary spray operation. The proposed change to this section states that the spray water temperature differential shall be determined for use in Table 5.7-1 prior to each cycle of main spray when less than four reactor coolant pumps are operating and for each cycle of auxiliary spray operation.

Calculation of the pressurizer spray line cumulative usage factor has been revised such that a cycle is not recorded until the maximum temperature difference between the pressurizer and pressurizer spray water during the spray cycle exceeds 200°F as opposed to 150°F presently. The number of spray cycles logged prior to calculation of the cumulative usage factor has been revised accordingly. The acceptance criteria to be met by application of Table 5.7-1 is that the cumulative usage factor in both the spray piping and spray nozzle do not exceed a limit of 0.65. This provides an increased safety margin to the ASME Code limit of 1.0.

This change is required due to a modification in the spray system piping to minimize the effects of thermal fatigue loadings in the modified spray piping system.

Because this proposed change of Table 5.7-1 is more restrictive than the present method of spray system usage evaluation and does not affect the operation of the facility, there can be no increase in the probability or consequences of an accident previously evaluated, nor can there be a possibility of a new or different kind of accident from any accident previously evaluated. The addition of this change ensures that the more conservative limit of the cumulative usage factor will not be exceeded, hence, there will be no reduction in the margin of safety.

Present Technical Specifications (Unit 2)

See Attachment A.

Proposed Technical Specifications (Unit 2)

See Attachment B.

Present Technical Specifications (Unit 3)

See Attachment C.

Proposed Technical Specifications (Unit 3)

See Attachment D.

Safety Analysis

The proposed change discussed above shall be deemed to constitute 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 an accident previously evaluated?

   Response: No

   The probability or consequence of an accident is not increased by the proposed change since this change provides a limit for the modified spray system usage which is more restrictive than that provided previously. This change prevents an increase in the probability of an accident previously evaluated by providing a more conservative limitation for the modified spray system usage.

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

   Response: No

   Since the operation of the facility in accordance with the proposed amendment will not change, there is no new or different kind of accident from any accident previously evaluted that could occur.

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

   Response: No

   There is no reduction in the margin of safety previously established, since the analysis done for this modification shows that the allowable usage factor limit will not be exceeded. Furthermore, the proposed change provides an increased margin of safety to the ASME code usage factor limit of 1.0.

The Commission has provided guidance concerning the application of the standards for determining whether a significant hazards consideration exists by providing certain examples (48 FR 14870) of amendments that are considered least likely to involve significant hazards considerations. Example (ii) from the Federal Register states that a change that constitutes an additional limitation, restriction, or control not presently included in the Technical Specifications would not be likely to involve significant hazards considerations. The proposed change is similar to Example (ii) in that the change provides a more accurate and stringent evaluation of the modified spray system by analyzing the entire spray system, and not only the spray nozzle. Thus, more limiting factors are imposed on the analysis, making it more restrictive.

Safety and Significant Hazards Determination

Based on the above discussion, the proposed change does not involve a significant hazards consideration in that it does not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated; (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety. In addition, it is concluded that: (1) there is 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.

ATTACHMENT B

PROPOSED TECHNICAL SPECIFICATIONS

UNIT 2

TABLE 5.7-1 (Continued)

COMPONENT CYCLIC OR TRANSIENT LIMITS

COMPONENT	CYCLIC OR TRANSIENT LIMIT	DESIGN CYCLE OR TRANSIENT
Reactor Coolant System	2 complete loss of secondary pressure cycles.	Loss of secondary pressure from either steam generator while in MODES 1, 2 or 3.
Pressurizer Spray System	Unlimited number of cycles.	Main spray (4 pumps operating) Main spray (less than 4 pumps operating) with $\Delta T \leq 200^{o}F$. Auxiliary spray with $\Delta T \leq 200^{o}F$.
	Calculate cumulative usage factor.	Main spray (less than 4 pumps operating) with $\Delta T > 200^{o}F$ Auxiliary spray with $\Delta T > 200^{o}F$

Where:

ΔT = Maximum temperature difference between pressurizer and pressurizer spray during the spray cycle.

TABLE 5.7-1 (Continued)

COMPONENT CYCLIC OR TRANSIENT LIMITS

COMPONENT	CYCLIC OR TRANSIENT LIMIT	DESIGN CYCLE OR TRANSIENT
Pressurizer Spray System		

Pressurizer Spray System Usage Factor

ΔT	N_A	N	N/N_A
201 - 250	11,000		
251 - 300	4,000		
301 - 350	2,200		
351 - 400	1,300		
401 - 450	900		
451 - 500	500		
501 - 550	300		
551 - 600	200		

$\Sigma N/N_A$ = _____

where:

ΔT = Maximum temperature difference between pressurizer and pressurizer spray during the spray cycle.

N_A = Allowable number of spray cycles

N = Number of cycles in ΔT range indicated

TABLE 5.7-1 (Continued)

COMPONENT CYCLIC OR TRANSIENT LIMITS

COMPONENT	CYCLIC OR TRANSIENT LIMIT	DESIGN CYCLE OR TRANSIENT
Pressurizer Spray System		

Calculational Method:

1. The spray cycle is defined as any initiation and termination of main or auxiliary spray flow through the pressurizer spray nozzle.

2. If the maximum temperature difference between the pressurizer and the pressurizer spray during the spray cycle exceeds 200°F, each spray cycle and the corresponding temperature difference is logged.

3. The spray system usage factor is calculated as follows:

   A. Fill in Column "N" above.

   B. Calculate "N/N_A" (Divide N and N_A).

   C. Add Column "N/N_A" to find $\Sigma N/N_A$. This total is the cumulative usage factor.

4. A. If the cumulative usage factor is equal to or less than 0.65 no further action is required.

   B. If the cumulative usage factor exceeds 0.65, subsequent pressurizer spray operation shall continue to be monitored and an engineering evaluation of spray system fatigue shall be performed within 90 days. The evaluation shall determine that the spray system remains acceptable for additional service beyond the 90 day period or subsequent spray operation shall be restricted so that the maximum temperature difference between pressurizer and pressurizer spray during the spray cycle shall be limited to less than or equal to 200°F.

PRESSURIZER

LIMITING CONDITION FOR OPERATION

3.4.8.2 The pressurizer shall be limited to:

a. A maximum heatup of 200°F in any one hour period,

b. A maximum cooldown of 200°F in any one hour period.

APPLICABILITY: At all times.

ACTION:

With the pressurizer temperature limits in excess of any of the above limits, restore the temperature to within the limits within 30 minutes; perform an engineering evaluation to determine the effects of the out-of-limit condition on the structural integrity of the pressurizer; determine that the pressurizer remains acceptable for continued operation or be in at least HOT STANDBY within the next 6 hours and reduce the pressurizer pressure to less than 500 psig within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.4.8.2.1 The pressurizer temperatures shall be determined to be within the limits at least once per 30 minutes during system heatup or cooldown.

4.4.8.2.2 The spray water temperature differential shall be determined for use in Table 5.7-1 for each cycle of main spray when less than 4 reactor coolant pumps are operating and for each cycle of auxiliary spray operation.

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