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ACCESSION NBR: 8712150068 DOC. DATE: 87/12/04 NOTARIZED: NO DOCKET #
FACIL: STN-50-528 Palo Verde Nuclear Station, Unit 1, Arizona Publi 05000528
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SUBJECT: Application for amend to License NPF-41, changing Tech Specs Section 3/4.5.1, safety injection tanks & associated Bases. Change to effect reduction in radiation exposure to plant personnel during safety injection sample testing. Fee paid.

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Docket No. STN 50-528

161-00685-EEVB/LJM
December 4, 1987

U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

ATTN: Document Control Desk

Dear Sirs:

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Unit 1
Technical Specification Change-Safety Injection Tanks
File: 87-005.419.05; 87-056-026

This letter is provided to request a change to the PVNGS Unit 1 Technical Specifications Section 3/4.5.1, Safety Injection Tanks and its associated Bases. The proposed change is necessary to effect a reduction in radiation exposure to plant personnel during Safety Injection Tank sample testing by reducing the total number of required boron sample tests.

The changes presented herewith were previously discussed with and agreed to by your staff during the PVNGS Unit 2 and Unit 3 Technical Specification review process and have been incorporated into the PVNGS Unit 2 and 3 licenses. We request 30 days to implement the change after the date the change becomes effective.

Enclosed within this change request are:

A. Description of the Proposed Change Request
B. Purpose of the Technical Specification
C. Need for the Technical Specification
D. Basis for No Significant Hazards Determination
E. Safety Analysis of the Proposed Change Request
F. Environmental Impact Consideration Determination
G. Marked-up Technical Specification Change Pages

A001
1/1

Pursuant to 10 CFR50.91(b)(1), and by copy of this letter and attachments, we have notified the Arizona Radiation Regulatory Agency of this request for a Technical Specification change. In accordance with 10CFR170.12(c), the license amendment application fee of $150 has been forwarded to the NRC License Fee Coordinator.

Very truly yours,

E. E. Van Brunt, Jr
Executive Vice President
Project Director

EEVB/LJM/ls
Attachment

cc: O. M. De Michele
Director Region V USNRC (w/a)
NRC Project Manager - E. A. Licitra (w/a)
NRC Resident Inspector - J. R. Ball (w/a)
Director ARRA - C. F. Tedford (w/a)
A. C. Gehr
R. M. Diggs w/WFD $150 (w/a)

A. DESCRIPTION OF THE PROPOSED CHANGE REQUEST

The proposed change revises Technical Specification Section 3/4.5.1, Safety Injection Tanks, and its associated Bases. Technical Specification 3/4.5.1 requires that each Safety Injection Tank (SIT) be operable with specified limits on the SIT volume, boron concentration, and pressure to ensure that a sufficient volume of borated water will be immediately forced into the reactor core through the reactor coolant system (RCS) cold legs in the event RCS pressure falls below the pressure of the SIT. This initial surge of water into the RCS provides the initial cooling mechanism during large RCS pipe ruptures. The proposed change consists of the following three parts:

I) Limiting Condition for Operation 3.5.1c currently specifies the safety injection tank boron concentration lower and upper limits to be 2000 ppm and 4400 ppm, respectively. The proposed change revises the lower limit from 2000 ppm to 2300 ppm.

II) Surveillance Requirement 4.5.1b currently states that each SIT shall be demonstrated OPERABLE by verifying the boron concentration of the SIT solution be between 2000 and 4400 ppm at least once per 31 days and within 6 hours after each solution level increase of greater than or equal to 7% of tank narrow range level. The proposed change revises this Surveillance Requirement to state that each safety injection tank shall be demonstrated OPERABLE by verifying the boron concentration of the SIT between 2300 and 4400 ppm at least once per 31 days and whenever the tank is drained to maintain the contained borated water level within the limits of specification 3.5.1c.

III) Surveillance Requirement 4.5.1c currently states that at least once per 31 days when the RCS pressure is above 700 psig, by verifying that power to the isolation valve operator is removed. The proposed change revises the Surveillance Requirement to lower the RCS pressure to 430 psia. This change is more conservative and agrees with the footnote on page 3/4 5-1 which states "In Mode 4 with pressurizer pressure less than 430 psia, the safety injection tanks may be isolated."

B. PURPOSE OF THE TECHNICAL SPECIFICATION

The purpose of this Technical Specification is to ensure the operability of each of the Safety Injection System safety injection tanks. These tanks ensure that a sufficient volume of borated water will be immediately forced into the reactor core through each of the cold legs in the event the RCS pressure falls below the pressure of the safety injection tanks. This initial surge of water into the RCS provides the initial cooling mechanism during large RCS pipe ruptures. The limits on safety injection tank volume, boron concentration, and pressure ensure that the safety injection tanks will adequately perform their function in the event of a LOCA.

C. NEED FOR THE TECHNICAL SPECIFICATION

The proposed change is necessary to effect a reduction in radiation exposure to plant personnel during SIT sample tests by reducing the total number of required boron sample tests.

D. BASIS FOR PROPOSED NO SIGNIFICANT HAZARDS CONSIDERATION

The proposed amendment request does not involve a significant hazards consideration because:

A) Operation of PVNGS Unit 1 in accordance with this change would not:

(1) Involve a significant increase in the probability or consequences of an accident previously evaluated.

BASIS

The accident that has the potential for being impacted by the proposed change is the Loss Of Coolant Accident (LOCA). The proposed change to revise the lower limit of SIT boron concentration from 2000 to 2300 ppm results in an increased protection against a postulated LOCA since more boron will be available to mitigate the consequences of that accident. The proposed change to perform the sampling of the safety injection tank only when it is drained to be within the limits of the Limiting Condition for Operation may be deemed to relax the current requirement of sampling the SIT within 6 hours after each SIT solution level increase of greater than or equal to 7% of tank narrow range level. This is because the SIT solution may be diluted by backleakage from the RCS and consequently, the borated water necessary to mitigate the consequences of a LOCA may have lower boron concentration than under the current requirements. However, the proposed lower limit of 2300 ppm for the SIT boron concentration has been determined such that backleakage from the RCS will not dilute the SITs below 2000 ppm prior to the time when draining of the SIT will be necessary. Furthermore, the SIT solution will continue to be sampled at least every 31 days as is the current practice. The SITs will perform their function of providing borated water to the reactor core in the event of a LOCA without any significant degradation of their capacities as required by the assumption in the Final Safety Analysis Report.

(2) Create the possibility of a new or different kind of accident from any accident previously analyzed.

BASIS

Since the proposed change does not result in any change to the normal plant operation, operation of the facility in accordance with the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

(3) Involve a significant reduction in a margin of safety.

BASIS

The SITs will provide at least the same degree of protection against a postulated LOCA as before, as discussed in item (1), operation of the facility in accordance with the proposed change involves no significant reduction in a margin of safety.

(B) The Commission has provided guidance concerning the application of the standards for determining whether a significant hazards consideration exists by providing certain examples (48FR14870) of amendment that are considered least likely to involve significant hazards considerations.

The proposed change in part I, to raise the lower limit on the SIT boron concentration is similar to Example (ii) in that the plant will now be required to maintain a higher boron concentration in the safety injection tank. The proposed change in Part II to revise the Surveillance Requirement is similar to Example (vi) in that the requirement may be deemed to be relaxed; however, where the result of the change clearly satisfies the safety Analysis Report, Section 6.3.3.1. The proposed change amending the associated Bases is similar to Example (i) in that it is an administrative change to make the Bases consistent with the proposed change.

E. SAFETY ANALYSIS OF THE PROPOSED CHANGE

The proposed Technical Specification amendment will not increase the probability of occurrence of the consequences of an accident or malfunction of equipment important to safety previously evaluated in the FSAR. The change addresses the boron concentration in the SITs and does not modify or alter the tank themselves, therefore the probability of the tanks malfunctioning does not change. The consequences of an accident, however, could be impacted because of the reduction of tank sampling times. The result of this would be a boron concentration lower than that assumed in the LOCA analyses. This is compensated by increasing the minimum boron concentration limit to 2300 ppm, thus ensuring that the SITs will not be diluted down to below the assumed boron concentration level used in the LOCA analyses prior to the time when draining of the SITs will be necessary. Therefore, the consequences of an accident are not significantly increased.

The proposed Technical Specification amendment will not create the possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR. Since the proposed change only affects the boron concentration within the SITs and this is addressed in the existing safety analysis the change does not create any new types of accidents or malfunctions.

The proposed Technical Specification amendment will not reduce the margin of safety as defined in the bases for the Technical Specification. The SITs will provide at least the same degree of protection against a postulated LOCA as before. By increasing the minimum ppm limit to 2300 ppm, dilution of the SITs will not be such as to reduce the effectiveness of the SITs and thus will not significantly impact the assumptions in the FSAR. Therefore no significant reduction in the margin of safety is involved.

F. ENVIRONMENTAL IMPACT CONSIDERATION DETERMINATION

The proposed change request does not involve an unreviewed environmental question because operation of PVNGS Unit 1 in accordance with this change would not:

(1) Result in a significant increase in any adverse environmental impact previously evaluated in the Final Environmental Statement (FES) as modified by the staff's testimony to the Atomic Safety and Licensing Board, Supplements to the FES, Environmental Impact Appraisals, or in any decisions of the Atomic Safety and Licensing Board; or

(2) Result in a significant change in effluents or power levels; or

(3) Result in matters not previously reviewed in the licensing basis for PVNGS which may have a significant environmental impact.

G. MARKED-UP TECHNICAL SPECIFICATION CHANGE PAGES

(See Attached Pages 3/4 5-1, 3/4 5-2, B3/4 5-1)