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SUBJECT: Application for amends to licenses NPF-41,NPF-51 & NPF-74, revising TS sections 3.9.6 & 4.9.6.1, "Refueling Machine."

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10 CFR 50.90

WILLIAM L. STEWART
EXECUTIVE VICE PRESIDENT
NUCLEAR

102-03167-WLS/SAB/TNW
October 31, 1994

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
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Washington, DC 20555

Dear Sirs:

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Units 1, 2, and 3
Docket Nos. STN 50-528/529/530
Proposed Amendment to Technical Specification
Sections 3.9.6 and 4.9.6.1, Refueling Machine
File: 94-005-419.05; 94-056-026

Pursuant to 10 CFR 50.90, Arizona Public Service Company (APS) submits herewith a proposed amendment to Technical Specification (TS) Sections 3.9.6 and 4.9.6.1, Refueling Machine.

This proposed amendment is requested to revise the refueling machine overload cut off limit from 1556 pounds to 1600 pounds. The change is a consequence of the fuel assembly weight increase which resulted from design and fabrication improvements. Approval of this amendment is requested by February 1, 1995, in order to support fuel movement during the upcoming Unit 2 refueling outage.

Provided in the enclosure to this letter are the following:

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

In accordance with TS Section 6.5, the Plant Review Board and Offsite Safety Review Committee have reviewed and concur with this proposed amendment. By copy of this letter this request is being forwarded to the Arizona Radiation Regulatory Agency

A001
1/1

(ARRA) pursuant to 10CFR 50.91(b)(1).

Should you have any questions, please contact Scott A. Bauer at (602) 393-5978.

Sincerely,

James M. Levine for WLS

WLS/SAB/TNW/rv
Enclosure

cc: L. J. Callan
K. E. Perkins
K. E. Johnston
B. E. Holian
A. V. Godwin (ARRA)

STATE OF ARIZONA)
) ss.
COUNTY OF MARICOPA)

I, J. M. Levine, represent that I am Vice President Nuclear Production, that the foregoing document has been signed by me on behalf of Arizona Public Service Company with full authority to do so, that I have read such document and know its contents, and that to the best of my knowledge and belief, the statements made therein are true and correct.

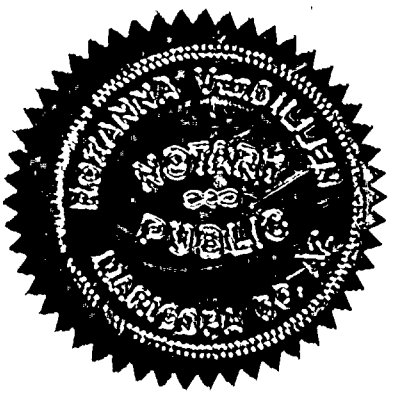
J. M. Levine

Sworn To Before Me This 31 Day Of October, 1994.

Roxanna VanDillen
Notary Public

My Commission Expires

June 12, 1997



ENCLOSURE

PROPOSED AMENDMENT TO TECHNICAL SPECIFICATION

SECTION 3.9.6 and 4.9.6.1

REFUELING MACHINE

A. DESCRIPTION OF THE PROPOSED AMENDMENT

Arizona Public Service Company (APS) proposes to change the refueling machine overload cut off limit from less than or equal to 1556 pounds to less than or equal to 1600 pounds.

B. PURPOSE OF THE TECHNICAL SPECIFICATION

TS 3.9.6 and 4.9.6.1 identify the overload cut off limit which protects the core internals (i.e., fuel assemblies, reactor vessel internals) and pressure vessel from possible damage in the event a fuel assembly becomes mechanically bound as it is withdrawn from the reactor vessel.

C. NEED FOR THE TECHNICAL SPECIFICATION AMENDMENT

The refueling machine overload cut off limit currently specified in TS 3.9.6 and 4.9.6.1 is less than or equal to 1556 pounds. ABB-CE fuel assembly modifications (denser fuel pellets, laser welded GUARDIAN™ grids, and laser welded spacer grids) have resulted in an increase in the fuel assembly weight. As a consequence of the fuel assembly weight increase, the refueling machine overload cut off limit needs to be revised to less than or equal to 1600 pounds. The increase in the overload cut off limit will minimize inadvertent tripping of the refueling machine during fuel movement.

D. SAFETY ANALYSIS OF THE PROPOSED TECHNICAL SPECIFICATION AMENDMENT

The proposed amendment to Sections 3.9.6 and 4.9.6.1 would revise the refueling machine overload cut off limit to be appropriate for the increased weight of the fuel assembly. The fuel overload cut off limit was incorporated on the refueling machine hoist to protect the core internals and pressure vessel from possible damage in the event the fuel assembly becomes mechanically bound as it is withdrawn from the reactor vessel. The overload cut off limit was determined as follows:

Overload Cut Off limit = (Hoist Wet Weight) + (Grapple Wet Weight) + (Max Wet Fuel Weight) + 90 lbs.

Where: a) Hoist and Grapple Wet Weight = 176 lbs.
b) Maximum Wet Fuel Weight = 1334 lbs.

The basis for the 90 pounds had two considerations: (1) to be large enough to account for friction loads during fuel assembly withdrawal; and, (2) to be small enough to ensure that while lifting a minimum weight fuel assembly, the loads imposed on a mechanically bound fuel assembly are below the design limit specified by the fuel manufacturer. The maximum value for the overload cut off limit was specified by the fuel manufacturer to be 1602 pounds. There is some conservatism in the calculation of the 1602 pound upper limit since the fuel manufacturer's calculation is based on fuel assemblies with a 14 x 14 pin arrangement where Palo Verde fuel assemblies have a 16 x 16 pin arrangement, which contain more welds. Since the proposed 1600 pound overload cut off limit is bounded by the fuel manufacturer's specified value of 1602 pounds, no damage will occur to the fuel assemblies as a result of the increase in the overload cut off limit. The proposed change of the overload cut off limit from the existing 1556 pounds to 1600 pounds will reduce the difference between the fuel manufacturer's specified design limit and the actual overload cut off limit from 46 pounds to 2 pounds. However, when all of the modifications, which increase the fuel assembly weight, are implemented that difference is increased nominally by 25 pounds due to the increase in the minimum weight of a fuel assembly.

In addition, the refueling machine normal operating procedures caution the operator to stop the hoist if the indicated load varies by more than 50 pounds from the weight being handled. The 50 pound overload condition is less than the overload cut off limit. The fuel assembly grids have also been designed with lead-in features to minimize the potential for mechanical binding. The revised overload cut off limit does not decrease the factor of safety for the refueling machine hoist below the Crane Manufacturer's Association of America (CMAA) Standard 70 required value of 5/1.

Based upon the above it can therefore be concluded that the integrity of the fuel assemblies, core internals and the pressure vessel will be maintained with the proposed change.

E. NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves a no significant hazards consideration, if operation of the facility in accordance with a proposed amendment, would not: (1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or (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. A discussion of these standards as they relate to this amendment request follows:

Standard 1 -- Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

The proposed Technical Specification amendment to Sections 3.9.6 and 4.9.6.1 would provide a revised refueling machine hoist overload cut off limit that is appropriate for the increased weight of the fuel assemblies. The increased weight of fuel assemblies results from design and fabrication improvements such as denser fuel pellets, laser welded GUARDIAN™ grids, and laser welded spacer grids. To ensure that the increased overload cut off limit was not excessive, a review was conducted for the minimum weight fuel assembly. It concluded that the loads imposed on the minimum weight fuel assembly, at the increased overload cut off limit, were acceptable. Therefore, there will not be an increased probability of damage to fuel assemblies from the proposed change. As such, the proposed change will not significantly increase the probability or consequences of an accident previously evaluated and will remain bounded by the accident analysis of Chapter 15 of the Updated Final Safety Analysis Report (UFSAR).

Standard 2 -- Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed Technical Specification amendment to Sections 3.9.6 and 4.9.6.1 would provide a revised refueling machine hoist overload cut off limit that is appropriate for the increased weight of the fuel assemblies. The increased weight of fuel assemblies results from design and fabrication improvements such as denser fuel pellets, laser welded GUARDIAN™ grids, and laser welded spacer grids. To ensure that the increased overload cut off limit was not excessive, a review was conducted for a minimum weight fuel assembly. It concluded that the loads imposed on a minimum weight fuel assembly, at the increased overload cut off limit, were acceptable. Therefore, it can be concluded that the proposed change to Sections 3.9.6 and 4.9.6.1 will not create the possibility of a new or different kind of accident from any accident previously evaluated.

Standard 3 -- Does the proposed change involve a significant reduction in a margin of safety.

The proposed Technical Specification amendment to Sections 3.9.6 and 4.9.6.1 would provide a revised refueling machine hoist overload cut off limit that is appropriate for the increased weight of the fuel assemblies. The increased weight

of fuel assemblies results from design and fabrication improvements such as denser fuel pellets, laser welded GUARDIAN™ grids, and laser welded spacer grids. To ensure that the increased overload cut off limit was not excessive, a review was conducted for a minimum weight fuel assembly. It concluded that the loads imposed on a minimum weight fuel assembly, at the increased overload cut off limit, were acceptable. Therefore, it can be concluded that the proposed change will maintain the integrity of the fuel assemblies and reactor vessel internals and does not involve a significant reduction in the margin of safety.

F. **ENVIRONMENTAL CONSIDERATION**

The proposed amendment revises the refueling machine overload cut off limit to less than or equal to 1600 pounds. APS has determined that the proposed amendment involves no changes in the amount or type of effluent that may be released offsite, and that there is no increase in individual or cumulative occupational radiation exposure. As such, operation of PVNGS Units 1, 2, and 3, in accordance with the proposed amendment, does not involve an unreviewed environmental safety question.

G. **MARKED-UP TECHNICAL SPECIFICATION PAGES**

PVNGS Unit 1 page: 3/4 9-6
PVNGS Unit 2 page: 3/4 9-6
PVNGS Unit 3 page: 3/4 9-6