

Arizona Public Service Company
P.O. BOX 53999 • PHOENIX, ARIZONA 85072-3999

WILLIAM L. STEWART
EXECUTIVE VICE PRESIDENT
NUCLEAR

102-03201-WLS/RAB/RKR
December 7, 1994

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Mail Station P1-37
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
3/4.3.1, Table 4.3-1
File: 94-056-026**

Arizona Public Service Company (APS) is requesting an amendment to Technical Specification 3/4.3.1. The proposed amendment will change Note 5 to Table 4.3-1 of Technical Specification 3/4.3.1 to allow verification of the shape annealing matrix elements used in the Core Protection Calculators. This would provide the option to use generic shape annealing matrix elements in the Core Protection Calculators. Presently, cycle specific shape annealing elements are determined during startup testing following each core reload. Use of a generic shape annealing matrix would eliminate approximately two to three hours of critical path work during startup following a refueling outage. This change to Technical Specifications is a Combustion Engineering Owners Group initiative. PVNGS is the lead plant for this change.

Provided in the enclosure to this letter are the following sections which support the proposed Technical Specification amendment:

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

In accordance with Technical Specification 6.5, the Plant Review Board and the Offsite Safety Review Committee have reviewed and concurred with this request. Pursuant to

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ADD 1

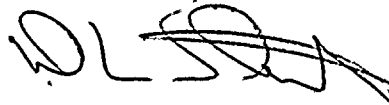


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10 CFR 50.91(b)(1), a copy of this request has been forwarded to the Arizona Radiation
Regulatory Agency.

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

Sincerely,



WLS/SAB/RKR/rv

Enclosure


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

ARRA




STATE OF ARIZONA)
) ss.
COUNTY OF MARICOPA)

I, W. L. Stewart, represent that I am Executive Vice President - Nuclear, 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.



W. L. Stewart

Sworn To Before Me This 7th Day Of December, 1994.



Notary Public

My Commission Expires

My Commission Expires June 12, 1997





ENCLOSURE

**PROPOSED AMENDMENT TO
TECHNICAL SPECIFICATION SECTION 3/4.3.1, Table 4.3-1**



A. DESCRIPTION OF THE TECHNICAL SPECIFICATION AMENDMENT REQUEST

The proposed amendment to Technical Specification 3/4.3.1, changes Note 5 of Table 4.3-1 from "After each fuel loading and prior to exceeding 70% of RATED THERMAL POWER, the incore detectors shall be used to determine the shape annealing matrix elements and the Core Protection Calculators shall use these elements." to "After each fuel loading and prior to exceeding 70% of RATED THERMAL POWER, the incore detectors shall be used to determine or verify the shape annealing matrix elements used in the Core Protection Calculators."

B. PURPOSE OF THE TECHNICAL SPECIFICATION

The purpose of Technical Specification 3/4.3.1, Note 5. of Table 4.3-1 is to determine the shape annealing matrix elements used in the Core Protection Calculators. The Core Protection Calculators are designed to protect the plant by tripping the reactor to ensure that the Specified Acceptable Fuel Design Limits on minimum DNBR and peak linear heat rate are not violated in the event of an Anticipated Operational Occurrence. The shape annealing matrix is a coefficient matrix that relates the excore detector signals with the integrated core power. As part of the calculation of minimum DNBR and peak linear heat rate, the Core Protection Calculators determine axial power shape using the excore detector signals.

The three excore detectors, used by each Core Protection Calculator channel for axial flux distribution, are far enough from the core to be exposed to flux from all heights in the core, although it is desired that they read their particular level. The Core Protection Calculators adjust for this flux overlap by using the predetermined shape annealing matrix elements in the Core Protection Calculators.

C. NEED FOR TECHNICAL SPECIFICATION AMENDMENT

The current Technical Specification requires that cycle specific shape annealing matrix elements be determined during startup following each core reload. The cycle specific shape annealing matrix elements, along with the other Core Protection Calculator inputs (addressable constants) are then installed in the Core Protection Calculators. A review of the data from past cycle specific shape annealing matrix elements found that they would have been acceptable for other cycles, even in other units. This review indicates that the shape annealing matrix elements are not reload dependent. The use of generic shape annealing matrix elements should also improve Core Protection Calculator shape modeling since the generic shape annealing matrix elements should be more representative of



the entire cycle than the beginning of cycle shape annealing matrix elements that are currently used.

The generic shape annealing matrix elements would be based on measured data from previous cycles (including available data from initial startup following refueling, mid-cycle power ascensions, preplanned power oscillations, or post startup power changes). The measured data would be used to determine generic shape annealing matrix elements that produce the best results for the entire cycle. Once identified, the cycle independent generic shape annealing matrix elements would be installed in the Core Protection Calculators prior to startup and then validated during startup testing.

It currently takes eight to twelve hours to install the addressable constants in the Core Protection Calculators and perform the necessary channel checks. Use of generic shape annealing matrix elements will reduce the installation time for the addressable constants in the Core Protection Calculators by two to three hours, since there would be fewer addressable constants to install in the Core Protection Calculators.

The generic shape annealing matrix elements will be validated during startup testing using the same acceptance criteria used for the cycle specific shape annealing matrix elements. If not valid, cycle specific shape annealing matrix elements would be used in the Core Protection Calculators.

D. 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 no significant hazards consideration, if operation of the facility in accordance with the 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 a different kind of accident from any accident previously evaluated; or
- (3) Involve a significant reduction in a margin of safety.

A discussion of the above 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 does not involve a significant increase in the probability or consequences of an accident previously evaluated. The Technical Specification amendment provides the option to use generic shape annealing matrix elements in the Core Protection Calculators. The design basis of the Core Protection Calculators is to provide the DNBR and linear heat rate trip functions for the Reactor Protection System so that the Specified Acceptable Fuel Design Limits on DNBR and fuel centerline melt are not exceeded during normal operation or Anticipated Operational Occurrences, and assist the Engineered Safety Features Actuation System in limiting the consequences of postulated accidents. The generic shape annealing matrix elements will be validated during startup testing and will meet the same acceptance criteria as the cycle specific shape annealing matrix elements. If the generic shape annealing matrix elements are not valid, cycle specific shape annealing matrix elements would be used in the Core Protection Calculators. This change will not affect the Core Protection Calculators capability to protect the plant by tripping the reactor, based on a conservative calculation of minimum DNBR and peak linear heat rate, to ensure that the Specified Acceptable Fuel Design Limits are not violated in the event of an Anticipated Operational Occurrence. Therefore, the generic shape annealing matrix elements will not affect the safety analysis, since there is no change to the design basis of the Core Protection Calculator System.

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 does not create the possibility of a new or different kind of accident from any accident previously evaluated. Since the generic shape annealing matrix elements will still have to meet the same acceptance criteria as the cycle specific shape annealing matrix elements, the Core Protection Calculators will still generate axial power shapes that fall within the required uncertainties. The Core Protection Calculators will still trip the reactor, based on a conservative calculation of minimum DNBR and peak linear heat rate, to ensure that the Specified Acceptable Fuel Design Limits are not violated in the event of an Anticipated Operational Occurrence.

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

The proposed Technical Specification amendment will not involve a significant reduction in a margin of safety. There is no reduction in the margin of safety, since the generic shape annealing matrix elements will still have to meet the same acceptance criteria as the cycle specific shape annealing matrix elements.



Therefore, this change will not affect the design basis of the Core Protection Calculators. The Core Protection Calculators will still provide a reactor trip based on a conservative calculation of minimum DNBR and peak linear heat rate.

E. SAFETY ANALYSIS FOR THE TECHNICAL SPECIFICATION AMENDMENT REQUEST

The proposed Technical Specification amendment allows the use of generic shape annealing matrix elements. This change is not safety significant since the generic shape annealing matrix elements must meet the same acceptance criteria as the cycle specific shape annealing matrix elements. Therefore, this change will not affect the Core Protection Calculators capability to protect the plant by tripping the reactor to ensure that the Specified Acceptable Fuel Design Limits on minimum DNBR and peak linear heat rate are not violated in the event of an Anticipated Operational Occurrence.

F. ENVIRONMENTAL CONSIDERATION

APS has determined that the proposed Technical Specification amendment involves no change in the amount or type of any 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

See attached pages 3/4 3-16 for Units 1, 2, and 3, respectively.

