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*See Proposed
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SUBJECT: Application for amends to licenses NPF-41,NPF-51 & NPF-74,
 respectively,changing TS Secitons 2.2.1 & 3/4.3.2 to specify
 addl restriction for allowed low pressurizer pressure trip
 setpoint when reducing RCS pressure in Mode 3.

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Arizona Public Service

PALO VERDE NUCLEAR GENERATING STATION
P.O. BOX 52034 PHOENIX, ARIZONA 85072-2034

102-03598-WLS/AKK/GAM

February 1, 1996

WILLIAM L. STEWART
EXECUTIVE VICE PRESIDENT
NUCLEAR

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
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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 2.2.1,
3/4.1.1, 3/4.3.2, 3/4.5.2, 3/4.5.3, 6.9.1.9, and 6.9.1.10**

Pursuant to 10 CFR 50.90, Arizona Public Service Company (APS) submits herewith a request to amend Facility Operating Licenses NPF-41, NPF-51, and NPF-74 for PVNGS Units 1, 2, and 3, respectively. The proposed amendment would (1) change Technical Specifications (TS) Sections 2.2.1 (Table 2.2-1), and 3/4.3.2 (Tables 3.3-3 and 4.3-2), to specify an additional restriction for the allowed low pressurizer pressure trip setpoint when reducing reactor coolant system pressure in Mode 3; (2) revise TS Sections 3/4.5.2 and 3/4.5.3 to specify an additional restriction to require two emergency core cooling system subsystems be operable in Mode 3 whenever the reactor coolant system (RCS) cold leg temperature is equal to or above 485 degrees F; and (3) revise TS Sections 3/4.1.1, 6.9.1.9, and 6.9.1.10 to relocate the shutdown margin (reactor trip breakers open) to the Core Operating Limits Report. In addition, the Table of Contents and the Bases would be revised to be consistent with these changes. These changes would enable the TS requirements to reflect the additional restrictions assumed in the updated PVNGS Mode 3 safety analysis, as described in Licensee Event Report (LER) 95-002-01, submitted to NRC via APS Letter No. 192-00944 dated August 25, 1995. Administrative controls described in the LER are currently in place to ensure plant operation within the safety analysis assumptions.

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Proposed Amendment to Technical Specifications
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Provided in Enclosure 1 to this letter are the following sections which support the proposed TS amendment:


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

In accordance with Technical Specification Section 6.5, the Plant Review Board and Offsite Safety Review Committee have reviewed and concur with this proposed amendment. Pursuant to 10 CFR 50.91(b)(1), a copy of this request is being forwarded to the Arizona Radiation Regulatory Agency.

It is requested that this proposed amendment become effective within 45 days following approval by the NRC.

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

Sincerely,



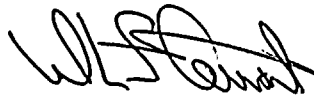
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Enclosure: Proposed Amendment to Technical Specification Sections 2.2.1, 3/4.1.1, 3/4.3.2, 3/4.5.2, 3/4.5.3, 6.9.1.9, and 6.9.1.10

cc: L. J. Callan (all w/enclosures)
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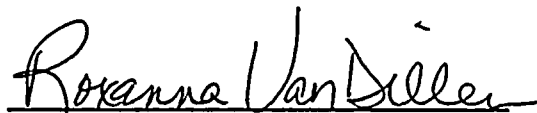
STATE OF ARIZONA)
) s.s.
COUNTY OF MARICOPA)

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, 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 1 Day Of February, 1996



Notary Public

My Commission Expires

My Commission Expires June 12, 1997



ENCLOSURE 1

**PROPOSED AMENDMENT TO TECHNICAL
SPECIFICATION SECTIONS 2.2.1, 3/4.1.1, 3/4.3.2,
3/4.5.2, 3/4.5.3, 6.9.1.9, and 6.9.1.10**

A. DESCRIPTION OF AMENDMENT REQUEST

The proposed Technical Specification (TS) amendment would make the following changes:

1. Revise footnote (2) in TS 2.2.1, Table 2.2-1, "Reactor Protective Instrumentation Trip Setpoint Limits," footnote (a) in TS 3/4.3.2, Table 3.3-3, "Engineered Safety Features Actuation System Instrumentation," and footnote (1) in TS 3/4.3.2, Table 3.3-4, "Engineered Safety Features Actuation System Instrumentation Trip Values." (These footnotes are identical, and apply to the low pressurizer pressure setpoint which provides the trip signals for the reactor protective system, safety injection actuation, and containment isolation actuation. The footnotes allow the pressurizer pressure - low trip setpoint to be manually decreased when the reactor coolant system (RCS) is being depressurized in Modes 3 and 4, and require the setpoint to be automatically increased when repressurizing.) Specifically, the proposed changes would add a new restriction to these footnotes that require the low pressurizer pressure trip setpoint be at least 140 psi greater than the saturation pressure corresponding to the RCS cold leg temperature, when the RCS cold leg temperature is greater than or equal to 485 degrees F.

The Bases for these TS sections would also be revised to describe the basis for the new restriction.

2. Revise TS 3/4.1.1.1, "Boration Control, Shutdown Margin - Reactor Trip Breakers Open," to relocate the shutdown margin - reactor trip breakers open to the Core Operating Limits Report (COLR). In addition, TS 6.9.1.9. and 6.9.1.10 would also be revised to add this shutdown margin limit to the list of limits required to be in the COLR and to specify the analytical method used to determine this limit.
3. Revise TS 3/4.5.2, "ECCS Subsystem - Tcold greater than or equal to 350 degrees F," and 3/4.5.3, "ECCS Subsystem - Tcold less than 350 degrees F." Specifically, these proposed changes would require two emergency core cooling system subsystems operable in Mode 3 whenever RCS cold leg temperature is equal to or above 485 degrees F. Additionally, the title of TS 3/4.5.2 would be revised to "ECCS Subsystems - Operating," and the title of TS 3/4.5.3 would be revised to "ECCS Subsystems - Shutdown."

The Bases for these TS sections would also be revised to describe the basis for the new restrictions.

4. Revise the Table of Contents to be consistent with the revised titles of sections 3/4.5.2 and 3/4.5.3.

5. Incorporate the following editorial corrections:

In Unit 1 TS, footnote (1) of Table 3.3-4, change "In Modes 3-6..." to "In Modes 3-4..." This will correct a typographical error so that this footnote is consistent with the other related footnotes in Unit 1 TS and the same footnote in the other Units' TS.

In Unit 2 TS, Section 3.5.2, delete the footnote designated "***." This footnote has expired.

B. PURPOSE OF THE TECHNICAL SPECIFICATIONS

TS Table 2.2-1 specifies the reactor protective instrumentation trip setpoint limits required by TS 2.2.1 to protect against violating core design limits and the RCS pressure boundary during anticipated operational occurrences and assist the engineered safety features systems in mitigating accidents. Specifically, footnote (2) of this table permits the pressurizer pressure - low setpoint value to be decreased as the RCS is depressurized in Modes 3 and 4 to allow for controlled depressurization of the RCS while still maintaining an active trip setpoint until the time is reached when the trip signal is no longer needed to protect the plant. The footnote also requires the setpoint to be automatically increased when repressurizing to ensure protection is appropriately restored. The pressurizer pressure - low trip signal also actuates safety injection and containment isolation.

TS 3/4.1.1.1 ensures a minimum shutdown margin that is sufficient to avoid unacceptable consequences to the fuel or reactor coolant system as a result of a design basis accident or anticipated operational occurrence during periods when the reactor trip breakers are open. TS 6.9.1.9 lists the core operating limits that are required to be established and documented in the Core Operating Limits Report. TS 6.9.1.10 lists the analytical methods used to determine the core operating limits that are listed in TS 6.9.1.9.

TS Table 3.3-3 specifies the engineered safety features actuation system (ESFAS) instrumentation required by TS LCO 3.3.2 to protect against violating core design limits and RCS pressure boundary during anticipated operational occurrences and ensure acceptable consequences during accidents. TS Table 3.3-4 specifies the trip setpoint values for the engineered safety features actuation system (ESFAS) instrumentation listed in Table 3.3-3. Footnote (a) of Table 3.3-3 and footnote (1) of Table 3.3-4 (the footnotes are identical) permit the pressurizer pressure - low setpoint value to be decreased manually as the RCS is depressurized in Modes 3 and 4 to allow for controlled depressurization of the RCS without causing an unnecessary



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1. The first part of the paper is a review of the literature on the topic of the paper.



reactor trip, containment isolation actuation signal (CIAS) or safety injection actuation signal (SIAS). The footnotes also require the setpoint to be automatically increased when repressurizing to ensure protection is appropriately restored.

TS 3/4.5.2 specifies the minimum number of ECCS subsystems (two) that must be operable in Modes 1, 2, and certain conditions of Mode 3 to provide core cooling and negative reactivity to ensure that the reactor is protected after design basis accidents, assuming a single active failure. TS 3/4.5.3 specifies the minimum number of ECCS subsystems (one) that must be operable in certain conditions of Mode 3 and in Mode 4 to provide core cooling and negative reactivity when single failures are not considered.

C. NEED FOR THE TECHNICAL SPECIFICATION AMENDMENT

These changes would result in TS requirements that reflect the more conservative assumptions of the updated PVNGS Mode 3 safety analysis, as described in Licensee Event Report 95-002-01, submitted to NRC via APS Letter No. 192-00944 dated August 25, 1995. Specifically, these changes would:

Revise TS 3/4.1.1.1, 6.9.1.9, and 6.9.1.10 to relocate the shutdown margin - reactor trip breakers open to the Core Operating Limits Report (COLR).

Relocating this shutdown margin limit to the COLR is consistent with the guidance provided in Generic Letter 88-16, which identified shutdown margin as one of the cycle-specific parameters that would be appropriately relocated to the COLR. The GL stated that if these limits are developed using an NRC-approved methodology, the license amendment process is an unnecessary burden on the licensee and the NRC.

Following relocation to the COLR, the shutdown margin - reactor trip breakers open would be updated to reflect the more restrictive limit identified in the updated Mode 3 steam line break analysis. This analysis was performed using the NRC-approved analytical method listed in TS 6.9.1.10.b, "The ROCS and DIT Computer Codes for Nuclear Design," CENPD-266-P-A, April 1983. This change would also allow APS to revise this shutdown margin in the future to reflect future cycle-specific limits identified using NRC approved methods, without the need for a license amendment. Note that the shutdown margin requirement of TS 3.1.1.2, "Shutdown Margin - Reactor Trip Breakers Closed," was relocated to the COLR in TS amendments 69, 55, and 42 for PVNGS Units 1, 2, and 3, respectively, dated December 30, 1992.

Revise the footnote in TS Tables 3.3-3, and 3.3-4 to add the new requirement that the pressurizer pressure - low trip setpoint must be maintained above 140 psi above the

[Illegible handwritten notes]

saturation pressure corresponding to the RCS cold leg temperature when the cold leg temperature is equal to or above 485 degrees when reducing pressurizer pressure in Modes 3 and 4.

This change is needed to reflect the Mode 3 safety analysis assumption that safety injection would be actuated at a pressure above the reactor vessel upper head saturation pressure during RCS depressurization following a steam line break. This actuation is necessary because if a steam line break were to occur in Mode 3, and the RCS were to depressurize below RCS cold leg saturation temperature prior to initiation of safety injection, a steam void could form in the reactor vessel upper head region. This steam void could act to keep the RCS pressurized above the safety injection setpoint, even though the RCS coolant would continue to be cooled. The RCS cooling would add positive reactivity as due to the negative moderator temperature coefficient. This situation could result in a potentially unacceptable consequences if safety injection was not actuated to provide negative reactivity.

Revise the pressurizer pressure - low footnote in TS Table 2.2-1 to be consistent with the revised footnotes in TS Tables 3.3-3 and 3.3-4.

This change is needed to keep this footnote consistent with the footnotes on the ESFAS Instrumentation Tables. The source of the pressurizer pressure - low trip signal for the reactor protective instrumentation is the same as that for the ESFAS instrumentation, and any operational requirements should be the same.

Revise the footnotes for the applicability of TS 3/4.5.2 and 3/4.5.3 to add the additional requirement that two ECCS subsystems must be operable in Mode 3 when RCS cold leg temperature is greater than or equal to 485 degrees F.

These changes are needed to reflect bounding analysis parameters used in the Mode 3 steam line break analysis. The Mode 3 safety analysis credits one HPSI pump to provide negative reactivity insertion to protect the core and RCS following a steam line break when RCS cold leg temperature is 485 degrees F or greater. Requiring two operable ECCS subsystems will ensure one HPSI pump is available assuming single failure of the other HPSI pump.

Revise the title of TS 3/4.5.2 to "ECCS Subsystems - Operating," and 3/4.5.3 to "ECCS Subsystems - Shutdown."

These changes are needed so that the TS titles more accurately reflect the TS applicability. TS 3/4.5.2 is applicable in Modes 1 and 2 at all times, and in Mode 3 when pressurizer pressure is greater than or equal to 1837 psia (and when the RCS cold leg temperature is greater than or equal to 485 degrees F,

assuming the change described above is approved). TS 3/4.5.3 is applicable in Mode 3 when pressurizer pressure is less than 1837 psia (and RCS cold leg temperature is less than 485 degrees, assuming the changes above are approved). Since the applicability of these two TS is split at 1837 psia in Mode 3 (and 485 degrees F, assuming the changes above are approved), the 350 degree statement in the TS titles are not appropriate and are inconsistent with the applicabilities. The terms "operating" and "shutdown," as requested for the new titles, will provide increased clarity, and are consistent with the titles specified for those sections in NUREG-1432, Combustion Engineering Improved Standard Technical Specifications.

D. SAFETY ANALYSIS OF THE PROPOSED AMENDMENT REQUEST

Revise TS 3/4.1.1.1, 6.9.1.9, and 6.9.1.10 to relocate the shutdown margin - reactor trip breakers open to the Core Operating Limits Report.

Generic Letter (GL) 88-16 provided NRC guidance to utilities for relocation of cycle-specific limits from the Technical Specifications to a plant-controlled Core Operating Limits Report (COLR). One of the parameters suggested in GL 88-16 for relocation to the COLR was shutdown margin. The NRC previously approved Technical Specification amendments 69, 55, and 42 for PVNGS Units 1, 2, and 3, respectively, dated December 30, 1992, that relocated several other cycle specific parameters to the COLR, including the shutdown margin previously specified in TS 3/4.1.1.2, "Shutdown Margin - Reactor Trip Breakers Closed." The relocation of the shutdown margin from TS 3/4.1.1.1 to the COLR is consistent with the guidance of GL 88-16. NRC approved analytical methods will be used to determine the shutdown margin - reactor trip breakers open, as required by the proposed revisions to TS 6.9.1.9 and 6.9.1.10.

Revise the footnote in TS Tables 3.3-3, and 3.3-4 to add the new requirement that the pressurizer pressure - low trip setpoint must be maintained above 140 psi above the saturation pressure corresponding to the RCS cold leg temperature when the cold leg temperature is equal to or above 485 degrees when reducing pressurizer pressure in Modes 3 and 4.

These changes are additional, more restrictive requirements, to ensure that safety injection would be actuated prior to RCS pressure dropping to the reactor vessel upper head saturation pressure during RCS depressurization following a steam line break, as credited in the Mode 3 steam line break safety analysis. This is necessary to protect the core and RCS by ensuring that negative reactivity is added to the core by safety injection to counter the positive reactivity being added due to the cooling of the RCS during a steam line break. A steam line break in Mode 3 when RCS cold leg temperature is



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less than 485 degrees F would not require the insertion of negative reactivity from safety injection since the positive reactivity added due to cooldown in this situation would not be enough to overcome the shutdown margin and cause unacceptable consequences.

The pressurizer pressure - low trip signal also initiates CIAS (the revised footnotes are referenced by the CIAS ESFAS instrumentation in TS Tables 3.3-3 and 3.3-4). The additional restriction to keep the trip setpoint higher than 140 psi above the saturation pressure corresponding to the cold leg temperature will not prevent the initiation of CIAS when needed according to the safety analyses, and will not cause an initiation of CIAS that would be contrary to the safety analyses.

The 485 degree F lower threshold for the proposed requirement is an indicated value that accounts for a 15 degree F instrumentation uncertainty. The 140 psi requirement is also an indicated value that accounts for uncertainties in both pressure and temperature instrumentation.

Revise the pressurizer pressure - low footnote in TS Table 2.2-1 to be consistent with the revised footnotes in TS Tables 3.3-3 and 3.3-4.

The pressurizer pressure - low trip signal also initiates a reactor trip from the reactor protection system. The additional restriction to keep the trip setpoint higher than 140 psi above the saturation pressure corresponding to the cold leg temperature will not prevent the initiation of a reactor trip when needed according to the safety analyses, and will not cause an initiation of a reactor trip that would be contrary to the safety analyses.

Revise the footnotes for the applicability of TS 3/4.5.2 and 3/4.5.3 to add the additional requirement that two ECCS subsystems must be operable in Mode 3 when RCS cold leg temperature is greater than or equal to 485 degrees F.

These changes are more restrictive, and will ensure that if one HPSI pump should fail during a steam line break in Mode 3 when the RCS is less than 1837 psia and greater than 485 degrees F, one HPSI pump would still be available for safety injection. The Mode 3 safety analysis credits one HPSI pump to provide negative reactivity insertion to protect the core and RCS following a steam line break.

Revise the title of TS 3/4.5.2 to "ECCS Subsystems - Operating," and 3/4.5.3 to "ECCS Subsystems - Shutdown."

This is an editorial change to clarify the title of the TS, and has no effect on the operation of the plant or on any structures systems or components.

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 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;
2. create the possibility of a new or different kind of accident from any 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 changes do not significantly increase the probability or consequences of an accident previously evaluated in the Updated Final Safety Analysis Report (UFSAR). The proposed changes to TS Tables 2.2-1, 3.3-3, and 3.3-4 to add additional restrictions to the pressurizer pressure - low trip setpoint requirements are more conservative than the current Technical Specifications and will reflect the updated Mode 3 steam line break safety analyses assumptions. The proposed changes to TS sections 3/4.5.2 and 3/4.5.3 to add additional restrictions to the requirement to have two ECCS Subsystems operable are also more conservative than the current Technical Specifications and will reflect the updated Mode 3 steam line break safety analyses assumptions. Since these changes are more restrictive, they would not contribute to the initiation of any accident, nor would they increase the consequences of an accident, but they would enhance the plant response to a steam line break in Mode 3 to reduce consequences. The proposed changes to relocate the shutdown margin - reactor trip breakers open to the COLR will have no effect on the initiation or consequences of an accident. The shutdown margin-reactor trip breakers open, which would be determined using NRC approved analytical methods, as required by the proposed changes, would ensure that the probability and consequences of an accident would not increase. The changes to the titles of TS 3/4.5.2 and 3/4.5.3, and to the Table of Contents, are editorial and have no effect on the operation of the plant or on any structures, systems or components.

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

The proposed TS changes do not create the possibility of an accident of a new or different kind. The proposed changes to TS Tables 2.2-1, 3.3-3, and 3.3-4, and TS section 3/4.5.2 and 3/4.5.3, to add additional restrictions to the pressurizer pressure - low trip setpoint requirement and add additional restrictions to the requirement to have two ECCS Subsystems operable are more conservative than the current Technical Specifications and will reflect the updated Mode 3 steam line break safety analyses assumptions. Since these changes are more restrictive, and therefore bounded by the current TS, they would not contribute to the initiation of any kind of new or different accident. The proposed changes to relocate the shutdown margin - reactor trip breakers open to the COLR will have no effect on the possibility of a new or different kind of accident. The shutdown margin-reactor trip breakers open, which would be determined using NRC approved analytical methods as required by the proposed changes, would ensure that there would be no possibility of a new or different kind of accident from any accident previously evaluated. The changes to the titles of TS 3/4.5.2 and 3/4.5.3, and to the Table of Contents, are editorial and have no effect on the operation of the plant or on any structures, systems or components.

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

The proposed TS changes do not involve a reduction in any margin of safety. The proposed changes to TS Tables 2.2-1, 3.3-3, and 3.3-4, and TS section 3/4.5.2 and 3/4.5.3, to add additional restrictions to the pressurizer pressure - low trip setpoint requirement and add additional restrictions to the requirement to have two ECCS Subsystems operable are more conservative than the current Technical Specifications and will reflect the updated Mode 3 steam line break safety analyses assumptions. Since these changes are more restrictive, they do not involve a reduction in any margin of safety as currently established by the existing TS. The proposed changes to relocate the shutdown margin - reactor trip breakers open to the COLR will have no effect on any margin of safety. The shutdown margin - reactor trip breakers open would be determined using NRC approved analytical methods as required by the proposed changes, thus ensuring that there would be no reduction in any margin of safety. The changes to the titles of TS 3/4.5.2 and 3/4.5.3, and to the Table of Contents, are editorial and have no effect on the operation of the plant or on any structures, systems or components.

F. ENVIRONMENTAL IMPACT DETERMINATION

APS has determined that the proposed amendment involves no change 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. REVISED TECHNICAL SPECIFICATION PAGES

PVNGS Units 1, 2, and 3 pages:

VI

2-5

B 2-4

3/4 1-1

3/4 3-23

3/4 3-27

3/4 5-3

3/4 5-7

B 3/4 3-2 (Units 2 and 3 only)

B 3/4 3-3 (Unit 1 only)

B 3/4 5-2

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