

October 7, 1994

Mr. William L. Stewart
Executive Vice President, Nuclear
Arizona Public Service Company
Post Office Box 53999
Phoenix, Arizona 85072-3999

SUBJECT: ISSUANCE OF AMENDMENTS FOR THE PALO VERDE NUCLEAR GENERATING STATION
UNIT NO. 1 (TAC NO. M90237), UNIT NO. 2 (TAC NO. M90238), AND UNIT
NO. 3 (TAC NO. M90239)

Dear Mr. Stewart:

The Commission has issued the enclosed Amendment No.83 to Facility Operating License No. NPF-41, Amendment No.70 to Facility Operating License No. NPF-51, and Amendment No. 55 to Facility Operating License No. NPF-74 for the Palo Verde Nuclear Generating Station, Unit Nos. 1, 2, and 3, respectively. The amendments consist of changes to the Technical Specifications in response to your application dated August 18, 1994.

These amendments revise Technical Specification 6.9.1.10 to add the analytical method supplement entitled "Calculative Methods for the CE Large Break LOCA Evaluation Model for the Analysis of CE and W Designed NSSS," CENPD-132, Supplement 3-P-A, dated June 1985. This TS contains the list of analytical methods used to determine the PVNGS core operating limits. Additionally, the existing references to earlier versions of CENPD-132, and the associated approval letters are deleted.

A copy of the related Safety Evaluation is also enclosed. A notice of issuance will be included in the Commission's next regular biweekly Federal Register notice.

Sincerely,

Original signed by:
Brian E. Holian, Project Manager
Project Directorate IV-2
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Docket Nos. STN 50-528, STN 50-529
and STN 50-530

- Enclosures: 1. Amendment No.83 to NPF-41
- 2. Amendment No.70 to NPF-51
- 3. Amendment No.55 to NPF-74
- 4. Safety Evaluation

DISTRIBUTION

Docket File	NRC & Local PDRs
KPerkins, WCFO	DFoster-Curseen
DHagan, T4A43	GHill (6), T5C3
OPA, 02G5	OC/LFDCB, T9E10
JRoe	PDIV-2/RF
TQuay	OGC, 015B18
CGrimes, 011E22	ACRS (10), T2E26
Region IV	BHolian
LTran	

cc w/encls: See next page

9410130118 941007
PDR ADOCK 05000528
P PDR

DOCUMENT NAME: PV90237.AMD

OFC	DRPW/LA	PDIV-2/PM	PDIV-2/PM	OGC	NRR:SRXB	PDIV-2/D
NAME	DFoster-Curseen	LTran:ye	BHolian	RJones	RJones	TQuay
DATE	10/4/94	10/4/94	10/5/94	10/6/94	10/6/94	10/17/94

OFFICIAL RECORD COPY

110041

NRC FILE NUMBER COPY



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

October 7, 1994

Mr. William L. Stewart
Executive Vice President, Nuclear
Arizona Public Service Company
Post Office Box 53999
Phoenix, Arizona 85072-3999

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NO. 3 (TAC NO. M90239)

Dear Mr. Stewart:

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These amendments revise Technical Specification 6.9.1.10 to add the analytical method supplement entitled "Calculative Methods for the CE Large Break LOCA Evaluation Model for the Analysis of CE and W Designed NSSS," CENPD-132, Supplement 3-P-A, dated June 1985. This TS contains the list of analytical methods used to determine the PVNGS core operating limits. Additionally, the existing references to earlier versions of CENPD-132, and the associated approval letters are deleted.

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Sincerely,

A handwritten signature in black ink, appearing to read "B. E. Holian".

Brian E. Holian, Project Manager
Project Directorate IV-2
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Docket Nos. STN 50-528, STN 50-529
and STN 50-530

Enclosures: 1. Amendment No. 83 to NPF-41
2. Amendment No. 70 to NPF-51
3. Amendment No. 55 to NPF-74
4. Safety Evaluation

cc w/encls: See next page

Mr. William L. Stewart
Arizona Public Service Company

Palo Verde

cc:

Mr. Steve Olea
Arizona Corporation Commission
1200 W. Washington Street
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Phoenix, Arizona 85003



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

ARIZONA PUBLIC SERVICE COMPANY, ET AL.

DOCKET NO. STN 50-528

PALO VERDE NUCLEAR GENERATING STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 83
License No. NPF-41

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by the Arizona Public Service Company (APS or the licensee) on behalf of itself and the Salt River Project Agricultural Improvement and Power District, El Paso Electric Company, Southern California Edison Company, Public Service Company of New Mexico, Los Angeles Department of Water and Power, and Southern California Public Power Authority dated August 18, 1994, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C(2) of Facility Operating License No. NPF-41 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 83, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated into this license. APS shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan, except where otherwise stated in specific license conditions.

3. This license amendment is effective as of the date of issuance and must be fully implemented no later than startup from the next refueling outage (refueling number 5).

FOR THE NUCLEAR REGULATORY COMMISSION



Theodore R. Quay, Director
Project Directorate IV-2
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: October 7, 1994

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 83 TO FACILITY OPERATING LICENSE NO. NPF-41

DOCKET NO. STN 50-528

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages. The revised pages are identified by amendment number and contain vertical lines indicating the areas of change.

Remove

6-20b

Insert

6-20b

ADMINISTRATIVE CONTROLS

CORE OPERATING LIMITS REPORT

6.9.1.9 Core operating limits shall be established and documented in the CORE OPERATING LIMITS REPORT before each reload cycle or any remaining part of a reload cycle for the following:

- a. Shutdown Margin K_{N-1} - Any CEA Withdrawn for Specification 3.1.1.2
- b. Moderator Temperature Coefficient BOL and EOL limits for Specification 3.1.1.3
- c. Boron Dilution Alarms for Specification 3.1.2.7
- d. Movable Control Assemblies - CEA Position for Specification 3.1.3.1
- e. Regulating CEA Insertion Limits for Specification 3.1.3.6
- f. Part Length CEA Insertion Limits for Specification 3.1.3.7
- g. Linear Heat Rate for Specification 3.2.1
- h. Azimuthal Power Tilt - T_q for Specification 3.2.3
- i. DNBR Margin for Specification 3.2.4
- j. Axial Shape Index for Specification 3.2.7

6.9.1.10 The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC in:

- a. "CE Method for Control Element Assembly Ejection Analysis," CENPD-0190-A, January 1976 (Methodology for Specification 3.1.3.6, Regulating CEA Insertion Limits).
- b. "The ROCS and DIT Computer Codes for Nuclear Design," CENPD-266-P-A, April 1983 (Methodology for Specifications 3.1.1.2, Shutdown Margin K_{N-1} - Any CEA Withdrawn; 3.1.1.3, Moderator Temperature Coefficient BOL and EOL limits and 3.1.3.6, Regulating CEA Insertion Limits).
- c. "Safety Evaluation Report related to the Final Design of the Standard Nuclear Steam Supply Reference Systems CESSAR System 80, Docket No. STN 50-470, "NUREG-0852 (November 1981), Supplements No. 1 (March 1983), No. 2 (September 1983), No. 3 (December 1987) (Methodology for Specifications 3.1.1.2, Shutdown Margin K_{N-1} - Any CEA Withdrawn; 3.1.1.3, Moderator Temperature Coefficient BOL and EOL limits; 3.1.2.7, Boron Dilution Alarms; 3.1.3.1, Movable Control Assemblies - CEA Position; 3.1.3.6, Regulating CEA Insertion Limits; 3.1.3.7, Part Length CEA Insertion Limits and 3.2.3 Azimuthal Power Tilt - T_q).
- d. "Modified Statistical Combination of Uncertainties," CEN-356(V)-P-A Revision 01-P-A, May 1988 and "System 80™ Inlet Flow Distribution," Supplement 1-P to Enclosure 1-P to LD-82-054, February 1993 (Methodology for Specification 3.2.4, DNBR Margin and 3.2.7 Axial Shape Index).

ADMINISTRATIVE CONTROLS

CORE OPERATING LIMITS REPORT (Continued)

- e. "Calculative Methods for the CE Large Break LOCA Evaluation Model for the Analysis of CE and W Designed NSSS," CENPD-132, Supplement 3-P-A, June 1985 (Methodology for Specification 3.2.1, Linear Heat Rate).
- f. "Calculative Methods for the CE Small Break LOCA Evaluation Model," CENPD-137-P, August 1974 (Methodology for Specification 3.2.1, Linear Heat Rate).
- g. "Calculative Methods for the CE Small Break LOCA Evaluation Model," CENPD-137-P, Supplement 1P, January 1977 (Methodology for Specification 3.2.1, Linear Heat Rate).
- h. Letter: O. D. Parr (NRC) to F. M. Stern (CE), dated June 13, 1975 (NRC Staff Review of the Combustion Engineering ECCS Evaluation Model). NRC approval for: 6.9.1.10f.
- i. Letter: K. Kniel (NRC) to A. E. Scherer (CE), dated September 27, 1977 (Evaluation of Topical Reports CENPD-133, Supplement 3-P and CENPD-137, Supplement 1-P). NRC approval for 6.9.1.10.g.

The core operating limits shall be determined so that all applicable limits (e.g., fuel thermal-mechanical limits, core thermal-hydraulic limits, ECCS limits, nuclear limits such as shutdown margin, and transient and analysis limits) of the safety analysis are met.

The CORE OPERATING LIMITS REPORT, including any mid-cycle revisions or supplements thereto, shall be provided upon issuance, for each reload cycle, to the NRC Document Control Desk with copies to the Regional Administrator and Resident Inspector.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

ARIZONA PUBLIC SERVICE COMPANY, ET AL.

DOCKET NO. STN 50-529

PALO VERDE NUCLEAR GENERATING STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 70
License No. NPF-51

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by the Arizona Public Service Company (APS or the licensee) on behalf of itself and the Salt River Project Agricultural Improvement and Power District, El Paso Electric Company, Southern California Edison Company, Public Service Company of New Mexico, Los Angeles Department of Water and Power, and Southern California Public Power Authority dated August 18, 1994, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations set forth in 10 CFR Part I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C(2) of Facility Operating License No. NPF-51 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 70, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated into this license. APS shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan, except where otherwise stated in specific license conditions.

3. This license amendment is effective as of the date of issuance and must be fully implemented no later than startup from the current midcycle outage (U2M5-2).

FOR THE NUCLEAR REGULATORY COMMISSION



Theodore R. Quay, Director
Project Directorate IV-2
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: October 7, 1994

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 70 TO FACILITY OPERATING LICENSE NO. NPF-51

DOCKET NO. STN 50-529

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages. The revised pages are identified by amendment number and contain vertical lines indicating the areas of change.

Remove

6-20b

Insert

6-20b

ADMINISTRATIVE CONTROLS

CORE OPERATING LIMITS REPORT

6.9.1.9 Core operating limits shall be established and documented in the CORE OPERATING LIMITS REPORT before each reload cycle or any remaining part of a reload cycle for the following:

- a. Shutdown Margin K_{N-1} - Any CEA Withdrawn for Specification 3.1.1.2
- b. Moderator Temperature Coefficient BOL and EOL limits for Specification 3.1.1.3
- c. Boron Dilution Alarms for Specification 3.1.2.7
- d. Movable Control Assemblies - CEA Position for Specification 3.1.3.1
- e. Regulating CEA Insertion Limits for Specification 3.1.3.6
- f. Part Length CEA Insertion Limits for Specification 3.1.3.7
- g. Linear Heat Rate for Specification 3.2.1
- h. Azimuthal Power Tilt - T_q for Specification 3.2.3
- i. DNBR Margin for Specification 3.2.4
- j. Axial Shape Index for Specification 3.2.7

6.9.1.10 The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC in:

- a. "CE Method for Control Element Assembly Ejection Analysis," CENPD-0190-A, January 1976 (Methodology for Specification 3.1.3.6, Regulating CEA Insertion Limits).
- b. "The ROCS and DIT Computer Codes for Nuclear Design," CENPD-266-P-A, April 1983 (Methodology for Specifications 3.1.1.2, Shutdown Margin K_{N-1} - Any CEA Withdrawn; 3.1.1.3, Moderator Temperature Coefficient BOL and EOL limits and 3.1.3.6, Regulating CEA Insertion Limits).
- c. "Safety Evaluation Report related to the Final Design of the Standard Nuclear Steam Supply Reference Systems CESSAR System 80, Docket No. STN 50-470, "NUREG-0852 (November 1981), Supplements No. 1 (March 1983), No. 2 (September 1983), No. 3 (December 1987) (Methodology for Specifications 3.1.1.2, Shutdown Margin K_{N-1} - Any CEA Withdrawn; 3.1.1.3, Moderator Temperature Coefficient BOL and EOL limits; 3.1.2.7, Boron Dilution Alarms; 3.1.3.1, Movable Control Assemblies - CEA Position; 3.1.3.6, Regulating CEA Insertion Limits; 3.1.3.7, Part Length CEA Insertion Limits and 3.2.3 Azimuthal Power Tilt - T_q).
- d. "Modified Statistical Combination of Uncertainties," CEN-356(V)-P-A Revision 01-P-A, May 1988 and "System 80™ Inlet Flow Distribution," Supplement 1-P to Enclosure 1-P to LD-82-054, February 1993 (Methodology for Specification 3.2.4, DNBR Margin and 3.2.7 Axial Shape Index).

ADMINISTRATIVE CONTROLS

CORE OPERATING LIMITS REPORT (Continued)

- e. "Calculative Methods for the CE Large Break LOCA Evaluation Model for the Analysis of CE and W Designed NSSS," CENPD-132, Supplement 3-P-A, June 1985 (Methodology for Specification 3.2.1, Linear Heat Rate).
- f. "Calculative Methods for the CE Small Break LOCA Evaluation Model," CENPD-137-P, August 1974 (Methodology for Specification 3.2.1, Linear Heat Rate).
- g. "Calculative Methods for the CE Small Break LOCA Evaluation Model," CENPD-137-P, Supplement 1P, January 1977 (Methodology for Specification 3.2.1, Linear Heat Rate).
- h. Letter: O. D. Parr (NRC) to F. M. Stern (CE), dated June 13, 1975 (NRC Staff Review of the Combustion Engineering ECCS Evaluation Model). NRC approval for: 6.9.1.10f.
- i. Letter: K. Kniel (NRC) to A. E. Scherer (CE), dated September 27, 1977 (Evaluation of Topical Reports CENPD-133, Supplement 3-P and CENPD-137, Supplement 1-P). NRC approval for 6.9.1.10.g.

The core operating limits shall be determined so that all applicable limits (e.g., fuel thermal-mechanical limits, core thermal-hydraulic limits, ECCS limits, nuclear limits such as shutdown margin, and transient and analysis limits) of the safety analysis are met.

The CORE OPERATING LIMITS REPORT, including any mid-cycle revisions or supplements thereto, shall be provided upon issuance, for each reload cycle, to the NRC Document Control Desk with copies to the Regional Administrator and Resident Inspector.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

ARIZONA PUBLIC SERVICE COMPANY, ET AL.

DOCKET NO. STN 50-530

PALO VERDE NUCLEAR GENERATING STATION, UNIT NO. 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 55
License No. NPF-74

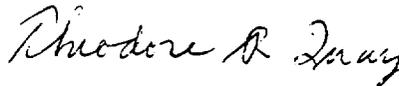
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by the Arizona Public Service Company (APS or the licensee) on behalf of itself and the Salt River Project Agricultural Improvement and Power District, El Paso Electric Company, Southern California Edison Company, Public Service Company of New Mexico, Los Angeles Department of Water and Power, and Southern California Public Power Authority dated August 18, 1994, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C(2) of Facility Operating License No. NPF-74 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 55, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated into this license. APS shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan, except where otherwise stated in specific license conditions.

3. This license amendment is effective as of the date of issuance and must be fully implemented no later than startup from the next refueling outage (refueling number 5).

FOR THE NUCLEAR REGULATORY COMMISSION



Theodore R. Quay, Director
Project Directorate IV-2
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: October 7, 1994

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 55 TO FACILITY OPERATING LICENSE NO. NPF-74

DOCKET NO. STN 50-530

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages. The revised pages are identified by amendment number and contain vertical lines indicating the areas of change.

Remove

6-20b

Insert

6-20b

ADMINISTRATIVE CONTROLS

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6.9.1.9 Core operating limits shall be established and documented in the CORE OPERATING LIMITS REPORT before each reload cycle or any remaining part of a reload cycle for the following:

- a. Shutdown Margin K_{N-1} - Any CEA Withdrawn for Specification 3.1.1.2
- b. Moderator Temperature Coefficient BOL and EOL limits for Specification 3.1.1.3
- c. Boron Dilution Alarms for Specification 3.1.2.7
- d. Movable Control Assemblies - CEA Position for Specification 3.1.3.1
- e. Regulating CEA Insertion Limits for Specification 3.1.3.6
- f. Part Length CEA Insertion Limits for Specification 3.1.3.7
- g. Linear Heat Rate for Specification 3.2.1
- h. Azimuthal Power Tilt - T_q for Specification 3.2.3
- i. DNBR Margin for Specification 3.2.4
- j. Axial Shape Index for Specification 3.2.7

6.9.1.10 The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC in:

- a. "CE Method for Control Element Assembly Ejection Analysis," CENPD-0190-A, January 1976 (Methodology for Specification 3.1.3.6, Regulating CEA Insertion Limits).
- b. "The ROCS and DIT Computer Codes for Nuclear Design," CENPD-266-P-A, April 1983 (Methodology for Specifications 3.1.1.2, Shutdown Margin K_{N-1} - Any CEA Withdrawn; 3.1.1.3, Moderator Temperature Coefficient BOL and EOL limits and 3.1.3.6, Regulating CEA Insertion Limits).
- c. "Safety Evaluation Report related to the Final Design of the Standard Nuclear Steam Supply Reference Systems CESSAR System 80, Docket No. STN 50-470, "NUREG-0852 (November 1981), Supplements No. 1 (March 1983), No. 2 (September 1983), No. 3 (December 1987) (Methodology for Specifications 3.1.1.2, Shutdown Margin K_{N-1} - Any CEA Withdrawn; 3.1.1.3, Moderator Temperature Coefficient BOL and EOL limits; 3.1.2.7, Boron Dilution Alarms; 3.1.3.1, Movable Control Assemblies - CEA Position; 3.1.3.6, Regulating CEA Insertion Limits; 3.1.3.7, Part Length CEA Insertion Limits and 3.2.3 Azimuthal Power Tilt - T_q).
- d. "Modified Statistical Combination of Uncertainties," CEN-356(V)-P-A Revision 01-P-A, May 1988 and "System 80™ Inlet Flow Distribution," Supplement 1-P to Enclosure 1-P to LD-82-054, February 1993 (Methodology for Specification 3.2.4, DNBR Margin and 3.2.7 Axial Shape Index).

ADMINISTRATIVE CONTROLS

CORE OPERATING LIMITS REPORT (Continued)

- e. "Calculative Methods for the CE Large Break LOCA Evaluation Model for the Analysis of CE and W Designed NSSS," CENPD-132, Supplement 3-P-A, June 1985 (Methodology for Specification 3.2.1, Linear Heat Rate).
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The CORE OPERATING LIMITS REPORT, including any mid-cycle revisions or supplements thereto, shall be provided upon issuance, for each reload cycle, to the NRC Document Control Desk with copies to the Regional Administrator and Resident Inspector.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 83 TO FACILITY OPERATING LICENSE NO. NPF-41,
AMENDMENT NO. 70 TO FACILITY OPERATING LICENSE NO. NPF-51,
AND AMENDMENT NO. 55 TO FACILITY OPERATING LICENSE NO. NPF-74
ARIZONA PUBLIC SERVICE COMPANY, ET AL.
PALO VERDE NUCLEAR GENERATING STATION, UNIT NOS. 1, 2, AND 3
DOCKET NOS. STN 50-528, STN 50-529, AND STN 50-530

1.0 INTRODUCTION

By letter dated August 18, 1994, the Arizona Public Service Company (APS or the licensee) submitted a request for changes to the Technical Specifications (TS) for the Palo Verde Nuclear Generating Station, Units 1, 2, and 3 (Appendix A to Facility Operating License Nos. NPF-41, NPF-51, and NPF-74, respectively). The Arizona Public Service Company submitted this request on behalf of itself, the Salt River Project Agricultural Improvement and Power District, Southern California Edison Company, El Paso Electric Company, Public Service Company of New Mexico, Los Angeles Department of Water and Power, and Southern California Public Power Authority. The proposed changes would revise TS 6.9.1.10 to add the analytical method supplement entitled "Calculative Methods for the CE Large Break LOCA Evaluation Model for the Analysis of CE and W Designed NSSS," CENPD-132, Supplement 3-P-A, dated June 1985. This TS contains the list of analytical methods used to determine the PVNGS core operating limits. Additionally, APS proposed to delete the existing references to earlier versions of CENPD-132, and the associated approval letters, supplanted by Supplement 3-P-A, and reletter the remaining list.

Technical Specification 6.9.1.10 lists the analytical methods, previously reviewed and approved by the staff, that are used to determine the core operating limits for the PVNGS plants. Plant operation is limited in accordance with the values of cycle-specific parameter limits that are established using these NRC-approved analytical methods. The analytical method proposed for addition to TS Section 6.9.1.10 supplants those currently used for Specification 3.2.1, Linear Heat Rate, for large break loss-of-coolant accident (LOCA) analysis.

2.0 EVALUATION

The large break LOCA analytical methods currently listed in TS 6.9.1.10.e, f, and g assume up to 1100 plugged steam generator tubes. The licensee anticipates that this steam generator tubes plugging assumption will soon be

exceeded (967 steam generator tubes were plugged prior to the recent Unit 2 mid-cycle inspection). The large break LOCA methodology that is being added to TS 6.9.1.10 with this proposed amendment (CENPD-132, Supplement 3-P-A, June 1985), is the methodology being used to justify Unit 2 operation with greater than 1100 plugged steam generator tubes and is the methodology used to establish the core operating limits for restart from the plant's current mid-cycle outage. This new methodology will also be used for Units 1 and 3 beginning with their next reloads.

The amendment to Section 6.9.1.10 adds an analytical method supplement to the analytical methods used to determine the core operating limits. This analytical method has been previously approved by the staff as defining an acceptable large break model in compliance with Appendix K to 10 CFR Part 50. The staff's approval letter directs that submittals demonstrating compliance with Appendix K to 10 CFR Part 50, using the Combustion Engineering model after publication of the revised CENPD-132, should reference the model described in the Safety Evaluation enclosed with the NRC letter of July 31, 1986. Consequently, the licensee proposed to delete those versions of CENPD-132, and the associated NRC approval letter references, presently included in TS Section 6.9.1.10 that will be supplanted by Supplement 3-P-A.

The staff discussed with the licensee several of the assumptions as stated in the July 31, 1986, Safety Evaluation of Combustion Engineering's model for emergency core cooling system large break response. The model is applicable to CE designs supplied with CE manufactured zircaloy fuel. All of the Palo Verde units utilize CE manufactured zircaloy fuel. Palo Verde Unit 3 has a TS allowance to substitute up to a total of 80 fuel rods clad with zirconium-based alloys for in-reactor performance through fuel cycle 6. These rods are in bundles in non-limiting positions in the core, and are acceptable for use with this new methodology. The staff also verified that the following assumptions in the staff's original SE were adhered to:

- (1) where the heat transfer coefficients resulting from the HCROSS computer program are greater than those resulting from the FLECHT-based correlation, the FLECHT values are utilized;
- (2) the limiting break flow discharge coefficient has been determined by an appropriate break spectrum (three guillotine and three slot breaks);
- (3) although the homogenous equilibrium break flow model was discussed in the topical, the Appendix K Moody model was used for predicting break flows; and
- (4) an axial power shape similar to Shape B was utilized.

Since the staff has reviewed and approved CENPD-132, Supplement 3-P-A, June 1985, this change to TS Section 6.9.1.10 is considered to be administrative in nature. Plant operation will continue to be limited in accordance with values of cycle specific parameters established using NRC-approved methodologies.

The staff has reviewed the proposed changes to TS 6.9.1.10 and, based on the above evaluation, finds them acceptable for operation of Palo Verde Nuclear Generating Station Units 1, 2, and 3.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Arizona State official was notified of the proposed issuance of the amendments. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (59 FR 46069). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

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Date: October 7, 1994