



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

August 31, 2011

Mr. Randall K. Edington
Executive Vice President Nuclear/
Chief Nuclear Officer
Mail Station 7602
Arizona Public Service Company
P.O. Box 52034
Phoenix, AZ 85072-2034

**SUBJECT: PALO VERDE NUCLEAR GENERATING STATION, UNITS 1, 2, AND 3 -
ISSUANCE OF AMENDMENTS RE: REVISING METHODOLOGY FOR
FEEDWATER LINE BREAK WITH LOSS OF OFFSITE POWER AND SINGLE
FAILURE EVENT IN THE UPDATED FINAL SAFETY ANALYSIS REPORT (TAC
NOS. ME4596, ME4597, AND ME4598)**

Dear Mr. Edington:

The Commission has issued the enclosed Amendment No. 187 to Renewed Facility Operating License No. NPF-41, Amendment No. 187 to Renewed Facility Operating License No. NPF-51, and Amendment No. 187 to Renewed Facility Operating License No. NPF-74 for the Palo Verde Nuclear Generating Station, Units 1, 2, and 3, respectively. The amendments consist of changes to the Updated Final Safety Analysis Report (UFSAR) in response to your application dated August 27, 2010, as supplemented by letters dated February 11 and May 25, 2011.

The amendments revise the feedwater line break with loss of offsite power and single failure (FWLB/LOP/SF) event analysis reported in Chapter 15, Section 15.2.8 of the UFSAR. The revisions to the FWLB/LOP/SF analysis reduce (1) the time assumed for the commencement of operator action from 30 minutes to 20 minutes, and (2) the rate of reactor coolant pump bleed-off to the reactor drain tank from 3 gallons per minute to zero.

R. Edington

- 2 -

A copy of the related Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's next biweekly *Federal Register* notice.

Sincerely,

A handwritten signature in black ink that reads "Lauren Kate Gibson". The signature is written in a cursive, flowing style.

Lauren K. Gibson, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

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

Enclosures:

1. Amendment No. 187 to NPF-41
2. Amendment No. 187 to NPF-51
3. Amendment No. 187 to NPF-74
4. Safety Evaluation

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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 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 187
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 27, 2010, as supplemented by letters dated February 11 and May 25, 2011, 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.

Enclosure 1

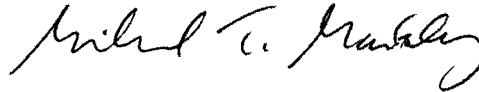
2. Accordingly, the license is amended by changes to the Updated Final Safety analysis Report as indicated in the attachment to this license amendment, and Paragraph 2.C(2) of Renewed Facility Operating License No. NPF-41 is hereby amended to read as follows:

- (2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 187, 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 shall be implemented within 90 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Michael T. Markley, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Renewed Facility
Operating License No. NPF-41
and Technical Specifications

Date of Issuance: August 31, 2011



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 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 187
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 27, 2010, as supplemented by letters dated February 11 and May 25, 2011, 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.

Enclosure 2

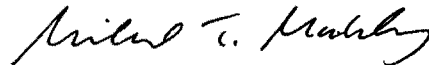
2. Accordingly, the license is amended by changes to the Updated Final Safety Analysis Report as indicated in the attachment to this license amendment, and Paragraph 2.C(2) of Renewed Facility Operating License No. NPF-51 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 187, 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 shall be implemented within 90 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Michael T. Markley, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Renewed Facility
Operating License No. NPF-51
and Technical Specifications

Date of Issuance: August 31, 2011



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 3

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 187
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 27, 2010, as supplemented by letters dated February 11 and May 25, 2011, 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.

Enclosure 3

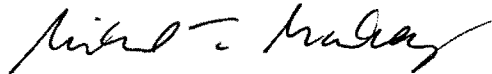
2. Accordingly, the license is amended by changes to the Updated Final Safety analysis Report as indicated in the attachment to this license amendment, and Paragraph 2.C(2) of Renewed Facility Operating License No. NPF-74 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 187, 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 shall be implemented within 90 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Michael T. Markley, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Renewed Facility
Operating License No. NPF-74
and Technical Specifications

Date of Issuance: August 31, 2011

ATTACHMENT TO LICENSE AMENDMENT NOS. 187, 187, AND 187

RENEWED FACILITY OPERATING LICENSE NOS. NPF-41, NPF-51, AND NPF-74

DOCKET NOS. STN 50-528, STN 50-529, AND STN 50-530

Replace the following pages of the Renewed Facility Operating Licenses Nos. NPF-41, NPF-51, and NPF-74, and Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Renewed Facility Operating License No. NPF-41

REMOVE

5

INSERT

5

Renewed Facility Operating License No. NPF-51

REMOVE

6

INSERT

6

Renewed Facility Operating License No. NPF-74

REMOVE

4

INSERT

4

Technical Specifications

REMOVE

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INSERT

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(1) Maximum Power Level

Arizona Public Service Company (APS) is authorized to operate the facility at reactor core power levels not in excess of 3990 megawatts thermal (100% power), in accordance with the conditions specified herein.

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 187, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated into this renewed operating 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) Antitrust Conditions

This renewed operating license is subject to the antitrust conditions delineated in Appendix C to this renewed license.

(4) Operating Staff Experience Requirements

Deleted

(5) Post-Fuel-Loading Initial Test Program (Section 14, SER and SSER 2)*

Deleted

(6) Environmental Qualification

Deleted

(7) Fire Protection Program

APS shall implement and maintain in effect all provisions of the approved fire protection program as described in the Final Safety Analysis Report for the facility, as supplemented and amended, and as approved in the SER through Supplement 11, subject to the following provision:

APS may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.

* The parenthetical notation following the title of many license conditions denotes the section of the Safety Evaluation Report and/or its supplements wherein the license condition is discussed.

(1) Maximum Power Level

Arizona Public Service Company (APS) is authorized to operate the facility at reactor core power levels not in excess of 3990 megawatts thermal (100% power) in accordance with the conditions specified herein.

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 187, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated into this renewed operating 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) Antitrust Conditions

This renewed operating license is subject to the antitrust conditions delineated in Appendix C to this renewed operating license.

(4) Operating Staff Experience Requirements (Section 13.1.2, SSER 9)*

Deleted

(5) Initial Test Program (Section 14, SER and SSER 2)

Deleted

(6) Fire Protection Program

APS shall implement and maintain in effect all provisions of the approved fire protection program as described in the Final Safety Analysis Report for the facility, as supplemented and amended, and as approved in the SER through Supplement 11, subject to the following provision:

APS may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.

(7) Inservice Inspection Program (Sections 5.2.4 and 6.6, SER and SSER 9)

Deleted

* The parenthetical notation following the title of many license conditions denotes the section of the Safety Evaluation Report and/or its supplements wherein the license condition is discussed.

- (4) Pursuant to the Act and 10 CFR Part 30, 40, and 70, APS to receive, possess, and use in amounts required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
 - (5) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, APS to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.
- C. This renewed operating license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:
- (1) Maximum Power Level

Arizona Public Service Company (APS) is authorized to operate the facility at reactor core power levels not in excess of 3990 megawatts thermal (100% power), in accordance with the conditions specified herein.
 - (2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 187, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated into this renewed operating 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) Antitrust Conditions

This renewed operating license is subject to the antitrust conditions delineated in Appendix C to this renewed operating license.
 - (4) Initial Test Program (Section 14, SER and SSER 2)

Deleted
 - (5) Additional Conditions

The Additional Conditions contained in Appendix D, as revised through Amendment No. 171, are hereby incorporated into this renewed operating license. The licensee shall operate the facility in accordance with the Additional Conditions.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NOS. 187, 187, AND 187 TO RENEWED FACILITY
OPERATING LICENSE NOS. NPF-41, NPF-51, AND NPF-74
ARIZONA PUBLIC SERVICE COMPANY, ET AL.
PALO VERDE NUCLEAR GENERATING STATION, UNITS 1, 2, AND 3
DOCKET NOS. STN 50-528, STN 50-529, AND STN 50-530

1.0 INTRODUCTION

By application dated August 27, 2010 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML102510161), as supplemented by letters dated February 11 and May 25, 2011 (ADAMS) Accession Nos. ML110550323 and ML11159A029, respectively), Arizona Public Service Company (the licensee) requested changes to the Updated Final Safety Analysis Report for Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3. The supplemental letters dated February 11 and May 25, 2011, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the U.S. Nuclear Regulatory Commission (NRC) staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on October 19, 2010 (75 FR 64361), and republished on June 28, 2011 (76 FR 37853).

The amendments would revise the feedwater line break with loss of offsite power and single failure (FWLB/LOP/SF) event analysis reported in Chapter 15, Section 15.2.8 of the UFSAR. The revisions to the FWLB/LOP/SF analysis would reduce (1) the time assumed for the commencement of operator action from 30 minutes to 20 minutes, and (2) the rate of reactor coolant pump (RCP) bleed-off to the reactor drain tank from 3 gallons per minute (gpm) to zero.

2.0 REGULATORY EVALUATION

Depending upon the size and location of the break and the plant operating conditions at the time of the break, an FWLB could cause either a reactor coolant system (RCS) cooldown (by excessive energy discharge through the break) or an RCS heatup (by reducing feedwater flow to the affected RCS). Regardless of the RCS response, reactor protection and safety systems are actuated to mitigate the transient. The NRC staff's review covered (1) postulated initial core and reactor conditions, (2) the methods of thermal and hydraulic analyses, (3) the sequence of events, (4) the assumed response of the reactor coolant and auxiliary systems, (5) the

functional and operational characteristics of the reactor protection system, (6) the results of the transient analyses, and (7) operator actions.

The NRC's acceptance criteria are based on general design criteria (GDC) in Appendix A, "General Design Criteria for Nuclear Power Plants," of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50 as follows:

- (1) GDC 27, "Combined reactivity control systems capability," insofar as it requires that the reactivity control systems be designed to have a combined capability, in conjunction with poison addition by the emergency core cooling system, of reliably controlling reactivity changes under postulated accident conditions, with appropriate margin for stuck rods, to assure the capability to cool the core is maintained;
- (2) GDC 28, "Reactivity limits," insofar as it requires that the reactivity control systems be designed to assure that the effects of postulated reactivity accidents can neither result in damage to the reactor coolant pressure boundary (RCPB) greater than limited local yielding, nor disturb the core, its support structures, or other reactor vessel internals so as to significantly impair the capability to cool the core;
- (3) GDC 31, "Fracture prevention of reactor coolant pressure boundary," insofar as it requires that the RCPB be designed with sufficient margin to assure that, under specified conditions, it will behave in a nonbrittle manner and the probability of a rapidly propagating fracture is minimized; and
- (4) GDC 35, "Emergency core cooling," insofar as it requires the RCS and associated auxiliaries be designed to provide abundant emergency core cooling.

The NRC staff review followed the guidance in NUREG-1764, Revision 1, "Guidance for the Review of Changes to Human Actions," September 2007, which is available at ADAMS Accession No. ML072640413.

3.0 TECHNICAL EVALUATION

The proposed changes would revise the FWLB/LOP/SF event analysis reported in Chapter 15, Section 15.2.8 of the UFSAR. The revisions to the FWLB/LOP/SF analysis would reduce (1) the time assumed for the commencement of operator action from 30 minutes to 20 minutes, and (2) the rate of RCP bleed-off to the reactor drain tank from 3 gpm to zero.

3.1 Reactor Systems Evaluation

The licensee has determined that the FWLB/LOP/SF event is the most severe of the decrease in heat removal events. The NRC staff finds this conclusion to be acceptable. As the most severe of the decrease in heat removal events, the FWLB could cause the pressurizer to become water-solid. If a pressurizer safety valve (PSV) opens and relieves water, then it might not reseal properly (since the PSVs are not qualified to relieve water). This scenario could challenge the operability of the PSVs and RCPB integrity.

The current FWLB/LOP/SF analysis is based upon an assumption that an RCP bleed-off rate of 3 gpm will be maintained. The removal of RCS inventory would tend to slow the rate of pressurizer level increase. If unjustified, RCP seal bleed-off could be regarded as a non-conservative assumption in an FWLB/LOP/SF analysis. The licensee attributes this non-conservative assumption, in the current FWLB/LOP/SF analysis, to a problem that was encountered when transitioning from the CESEC code¹ to the CENTS code², both of which have been approved by the NRC. The licensee discovered that the two codes modeled RCP seal bleed-off in different ways. In the CESEC code, RCP seal bleed-off is included in the letdown flow assumption. Consequently, RCP seal bleed-off is isolated when letdown is isolated, and letdown is isolated due to the LOP. In the CENTS computer code, RCP seal bleed-off is not isolated when letdown is isolated. RCP seal bleedoff isolation is controlled with a separate input parameter. Therefore, the current FWLB/LOP/SF analysis, performed with the CENTS code, includes the non-conservative assumption of RCP seal bleedoff. The licensee proposes to drop the assumed RCP seal bleed-off rate to zero in the revised analysis. Because this is a change to a more conservative assumption, the NRC staff concludes that this is acceptable.

3.2 Human Performance Evaluation

The licensee also proposes to credit operator action, at 20 minutes, to control RCS heat-up, and pressurizer level, followed by action at 30 minutes, to initiate cooldown of the RCS in accordance with plant procedures. The NRC staff performed a "Level II" review (i.e., the second most stringent of the graded reviews possible under the guidance of NUREG-1764, Revision 1). The staff's assessment of risk is only for purposes of scoping the human performance review and may conflict with the licensee's assessment of risk importance or that of other branches, and should not be considered as an accurate assessment of risk when compared to other methods, especially, those using plant-specific data and NRC-accepted methods of probabilistic risk analysis and human reliability analysis.

The FWLB/LOP/SF event analysis, summarized in the PVNGS UFSAR Chapter 15, Section 15.2.8., requires operator action to initiate opening of the atmospheric dump valves (ADVs) within 30 minutes of event initiation. This operator action is not new; however, the proposed change will now require opening of the valves within 20 minutes instead of the current 30 minutes (i.e., the action will become time-critical). The purpose of this time-critical action is to preclude the potential for challenging the continued operability of the PSVs due to overfilling of the pressurizer, and to ensure adequate control of the RCS heat-up.

The licensee's analysis shows that the requirements can be completed within the time constraints established; therefore, the NRC staff concludes that the licensee's approach is acceptable based on its demonstration of adequate margin to the proposed time constraints.

¹ "CESEC [Combustion Engineering Systems Excursion Code] Digital Simulation of a Combustion Engineering Nuclear Steam Supply System," CENPD-107, April 1974.

² Berkow, H. N., U.S. Nuclear Regulatory Commission, letter to Gordon Bischoff, Westinghouse Electric Company, "Final Safety Evaluation for Topical Report WCAP-1 5996-P, 'Technical Description Manual for the CENTS Code' (TAC No. MB6982)," dated December 1, 2003 (ADAMS Accession No. ML032790634)

Because this operator action is not a new action, the only aspect requiring reanalysis was the establishment of time constraints for the action sequence. The design value for the timing of the action sequence was established by determining the margin necessary to prevent overfilling of the pressurizer (20 minutes). The simulator testing demonstrated adequate margin to this design time. Time testing at the PVNGS simulator was performed to demonstrate sufficient margin to the licensee-established design values. Data was collected from three different licensed operating crews. The simulator testing demonstrated that a value of 4 minutes could be reasonably established as the maximum time after event initiation that operators are likely to open the ADVs. This provides significant margin to the design value of 20 minutes for this task. These simulator runs demonstrated that the actual operator action times for opening of an ADV were less than 4 minutes after the initiation of the event. This is significantly below the 20 minutes credited in the analysis and provides significant margin over that assumption. Based on the licensee's simulator demonstration of adequate margin to proposed time constraints, the NRC staff concludes that the licensee's update to the task analysis is acceptable.

There will be no changes to the emergency operating procedures (EOPs), which direct the operator to control RCS heat-up and limit the pressurizer level to a level that could not lead to water relief through the PSVs, a situation that could challenge RCPB integrity, or to the off-normal event procedures. The NRC staff concludes this is acceptable, based on the licensee's successful operating experience during training with the existing EOPs, and on the time-testing that was done in the PVNGS simulator using the revised procedures and a sample of operating crews.

Because the EOPs are an integral part of the licensed operator qualification and requalification training programs, training on the proposed action sequence will be included in both initial and continuing operator training. Training on the time-critical aspect of the task sequence will be completed prior to implementing the proposed amendment. Based on the facts that the action sequence will be included in the training program and that the training changes will be implemented prior to implementing the amendment, the NRC staff concludes that the training to be provided is acceptable.

The actions proposed by this amendment will be included in the licensee's procedure 40DP-9ZZ04, "Time Critical Action (TCA) Program", which provides a means to: a) ensure that the time-critical actions within the scope of the procedure can be accomplished by plant personnel, b) document periodic validation of credited action times, and c) ensure that subsequent changes to the plant, procedures, or programs will not invalidate the credited action times. Based on the administrative protection against inadvertent change and the periodic re-validation provided by the licensee, the NRC staff concludes that the licensee's long-term monitoring strategy is acceptable.

3.3 Conclusion

The NRC staff has reviewed the licensee's FWLB analysis, and concludes that the licensee's analysis has been performed using acceptable analytical models. The NRC staff further concludes that the licensee has demonstrated that the reactor protection and safety systems will continue to ensure that the ability to insert control rods is maintained, the RCPB pressure limits will not be exceeded, the RCPB will behave in a nonbrittle manner, the probability of

propagating fracture of the RCPB is minimized, and abundant core cooling will be provided. Based on the above, the NRC staff concludes that the plant will continue to meet the requirements of GDCs 27, 28, 31, and 35 following implementation of the proposed UFSAR revision.

Based on evidence provided by the licensee (i.e., that pilot-testing in the simulator demonstrated significant margin to design, as well as the appropriate administrative controls will be applied to procedures, training, and human system interface design), the NRC staff concludes that the proposed amendment is acceptable from the human performance point of view, and that the licensee's request to revise the FWLB/LOP/SF analysis, crediting the opening of the ADVs at 20 minutes, is acceptable.

4.0 REGULATORY COMMITMENT

In its submittal dated August 27, 2010, the licensee made the following regulatory commitment:

Upon NRC approval, the operator action completion time will be added to the Palo Verde Time Critical Action Program.

The NRC staff has reviewed the above regulatory commitment and concludes it is acceptable.

5.0 STATE CONSULTATION

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

6.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to 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 published in the *Federal Register* on October 19, 2010 (75 FR 2010), and republished on June 28, 2011 (76 FR 37853). 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.

7.0 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 amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributors: G. Lapinsky, NRR/DIRS/IHPB
S. Miranda, NRR/DSS/SRXB

Date: August 31, 2011

R. Edington

- 2 -

A copy of the related Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's next biweekly *Federal Register* notice.

Sincerely,

/RA/

Lauren K. Gibson, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

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

Enclosures:

1. Amendment No. 187 to NPF-41
2. Amendment No. 187 to NPF-51
3. Amendment No. 187 to NPF-74
4. Safety Evaluation

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GLapinsky, NRR/DIRS/IHPB

ADAMS Accession No. ML111880524

***by SE memo dated**

OFFICE	NRR/LPL4/PM	NRR/LPL4/LA	NRR/DIRS/IHPB/BC	NRR/DSS/SRXB/BC
NAME	LGibson	JBurkhardt	UShoop*	AUises*
DATE	8/5/11	8/5/11	6/17/2011	8/9/2011
OFFICE	OGC NLO w/comments	NRR/LPL4/BC	NRR/LPL4/PM	
NAME	LSubin	MMarkley	LGibson	
DATE	8/16/11	8/30/11	8/31/11	

OFFICIAL AGENCY RECORD