



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

June 7, 2018

Mr. Robert S. Bement  
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 TO REVISE TECHNICAL SPECIFICATIONS  
TO ADOPT TECHNICAL SPECIFICATIONS TASK FORCE (TSTF) TRAVELER  
TSTF-545, REVISION 3, "TS INSERVICE TESTING PROGRAM REMOVAL &  
CLARIFY SR USAGE RULE APPLICATION TO SECTION 5.5 TESTING"  
(CAC NOS. MF9856, MF9857, AND MF9858; EPID L-2017-LLA-0250)**

Dear Mr. Bement:

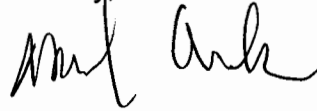
The U.S. Nuclear Regulatory Commission (the Commission) has issued the enclosed Amendment No. 206 to Renewed Facility Operating License No. NPF-41, Amendment No. 206 to Renewed Facility Operating License No. NPF-51, and Amendment No. 206 to Renewed Facility Operating License No. NPF-74 for the Palo Verde Nuclear Generating Station, Units 1, 2, and 3, respectively. The amendments consist of changes to the technical specifications (TSs) in response to your application dated June 22, 2017.

The changes to the TSs are consistent with Technical Specifications Task Force (TSTF) Improved Standard Technical Specifications Change Traveler TSTF-545, Revision 3, "TS Inservice Testing Program Removal & Clarify SR [Surveillance Requirement] Usage Rule Application to Section 5.5 Testing," dated October 21, 2015.

Specifically, the changes revise the TSs to eliminate TS 5.5.8, "Inservice Testing Program." A new defined term, "INSERVICE TESTING PROGRAM," is added to TS Section 1.1, "Definitions." Also, existing uses of the term "Inservice Testing Program" in the TS are capitalized throughout to indicate that it is now a defined term.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Michael Orenak". The signature is written in a cursive style with a large initial "M" and "O".

Michael D. Orenak, 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. 206 to NPF-41
2. Amendment No. 206 to NPF-51
3. Amendment No. 206 to NPF-74
4. Safety Evaluation

cc: Listserv



**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. 206  
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 June 22 2017, 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 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. 206, 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. This license amendment is effective as of the date of issuance and shall be implemented within 120 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Robert J. Pascarelli, 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: June 7, 2018



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. 206  
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 June 22 2017, 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 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. 206, 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. This license amendment is effective as of the date of issuance and shall be implemented within 120 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Robert J. Pascarelli, 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: June 7, 2018



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. 206  
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 June 22 2017, 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 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. 206, 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. This license amendment is effective as of the date of issuance and shall be implemented within 120 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Robert J. Pascarelli, 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: June 7, 2018



ATTACHMENT TO LICENSE AMENDMENT NOS. 206, 206, AND 206 TO  
RENEWED FACILITY OPERATING LICENSE NOS. NPF-41, NPF-51, AND NPF-74  
PALO VERDE NUCLEAR GENERATING STATION, UNITS 1, 2, AND 3  
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  
1.1-4  
3.4.10-2  
3.4.11-2  
3.4.13-3  
3.5.3-2  
3.6.3-6  
3.6.6-2  
3.7.1-3  
3.7.2-3  
3.7.3-2  
3.7.5-3  
5.5-5

INSERT  
1.1-4  
3.4.10-2  
3.4.11-2  
3.4.13-3  
3.5.3-2  
3.6.3-6  
3.6.6-2  
3.7.1-3  
3.7.2-3  
3.7.3-2  
3.7.5-3  
5.5-5

(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. 206, 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.

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\* 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. 206, 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

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\* 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. 206, 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. 205, are hereby incorporated into this renewed operating license. The licensee shall operate the facility in accordance with the Additional Conditions.

1.1 Definitions

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DOSE EQUIVALENT XE-133 (continued)	be performed using effective dose conversion factors for air submersion listed in Table B-1 of Regulatory Guide 1.109, Rev. 1, NRC, 1977.
ENGINEERED SAFETY FEATURE (ESF) RESPONSE TIME	The ESF RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its ESF actuation setpoint at the channel sensor until the ESF equipment is capable of performing its safety function (i.e., the valves travel to their required positions, pump discharge pressures reach their required values, etc.). Times shall include diesel generator starting and sequence loading delays, where applicable. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. In lieu of measurement, response time may be verified for selected components provided that the components and methodology for verification have been previously reviewed and approved by the NRC.
INSERVICE TESTING PROGRAM	The INSERVICE TESTING PROGRAM is the licensee program that fulfills the requirements of 10 CFR 50.55a(f).
$K_{n-1}$	$K_{n-1}$ is the K effective calculated by considering the actual CEA configuration and assuming that the fully or partially inserted full strength CEA of highest worth is fully withdrawn.
LEAKAGE	LEAKAGE shall be:  a. <u>Identified LEAKAGE</u>  1. LEAKAGE, such as that from pump seals or valve packing (except reactor coolant pump (RCP) seal water injection or leakoff), that is captured and conducted to collection systems or a sump or collecting tank;  2. LEAKAGE into the containment atmosphere from sources that are both specifically located and known either not to interfere with the operation of leakage detection systems or not to be pressure boundary LEAKAGE; or

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(continued)

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE	FREQUENCY
SR 3.4.10.1    Verify each pressurizer safety valve is OPERABLE in accordance with the INSERVICE TESTING PROGRAM. Following testing, lift settings shall be within $\pm 1\%$ .	In accordance with the INSERVICE TESTING PROGRAM

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE	FREQUENCY
<p>SR 3.4.11.1    Verify the required pressurizer safety valve is OPERABLE in accordance with the INSERVICE TESTING PROGRAM. Following testing, lift settings shall be within <math>\pm 1\%</math>.</p>	<p>In accordance with the INSERVICE TESTING PROGRAM</p>
<p>SR 3.4.11.2    -----NOTE----- Only required to be performed when a Shutdown Cooling System suction line relief valve is being used for overpressure protection. ----- Verify the required Shutdown Cooling System suction line relief valve is aligned to provide overpressure protection for the RCS.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.4.11.3    Verify the required Shutdown Cooling System suction line relief valve is OPERABLE with the required setpoint.</p>	<p>In accordance with the INSERVICE TESTING PROGRAM</p>

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE		FREQUENCY
SR 3.4.13.1	Verify RCS Vent $\geq$ 16 square inches is open.	In accordance with the Surveillance Frequency Control Program
SR 3.4.13.2	Verify each Shutdown Cooling System suction line relief valve is aligned to provide overpressure protection for the RCS.	In accordance with the Surveillance Frequency Control Program
SR 3.4.13.3	Verify each Shutdown Cooling System suction line relief valve is OPERABLE with the required setpoint.	In accordance with the INSERVICE TESTING PROGRAM.



SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p style="text-align: center;">-----NOTE----- Not required to be met for system vent flow paths opened under administrative control. -----</p>	
<p>SR 3.5.3.1    Verify each ECCS manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.5.3.2    Verify ECCS locations susceptible to gas accumulation are sufficiently filled with water.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.5.3.3    Verify each ECCS pump develops the required differential pressure at the flow test point.</p>	<p>In accordance with the INSERVICE TESTING PROGRAM</p>
<p>SR 3.5.3.4    Verify each ECCS automatic valve that is not locked, sealed, or otherwise secured in position, in the flow path actuates to the correct position on an actual or simulated actuation signal.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.5.3.5    Verify each ECCS pump starts automatically on an actual or simulated actuation signal.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.5.3.6    Verify each LPSI pump stops on an actual or simulated actuation signal.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

**SURVEILLANCE REQUIREMENTS (continued)**

SURVEILLANCE		FREQUENCY
SR 3.6.3.4	<p style="text-align: center;">-----NOTE-----</p> <p>Valves and blind flanges in high radiation areas may be verified by use of administrative means.</p> <hr/> <p>Verify each containment isolation manual valve and blind flange that is located inside containment and not locked, sealed or otherwise secured and required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls.</p>	<p>Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days</p>
SR 3.6.3.5	<p>Verify the isolation time of each required automatic power operated containment isolation valve is within limits.</p>	<p>In accordance with the INSERVICE TESTING PROGRAM</p>
SR 3.6.3.6	<p>Perform leakage rate testing for required containment purge valves with resilient seals.</p>	<p>In accordance with the Surveillance Frequency Control Program</p> <p><u>AND</u></p> <p>Within 92 days after opening the valve</p>
SR 3.6.3.7	<p>Verify each required automatic containment isolation valve that is not locked, sealed, or otherwise secured in position, actuates to the isolation position on an actual or simulated actuation signal.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
<p>-----NOTE-----            Not required to be met for system vent flow paths opened under administrative control.            -----</p>		
SR 3.6.6.1	Verify each containment spray manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.6.6.2	Verify the containment spray piping is full of water to the 113 ft level in the containment spray header.	In accordance with the Surveillance Frequency Control Program
SR 3.6.6.3	Verify containment spray locations susceptible to gas accumulation are sufficiently filled with water.	In accordance with the Surveillance Frequency Control Program
SR 3.6.6.4	Verify each containment spray pump's developed head at the flow test point is greater than or equal to the required developed head.	In accordance with the INSERVICE TESTING PROGRAM
SR 3.6.6.5	Verify each automatic containment spray valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.6.6.6	Verify each containment spray pump starts automatically on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.6.6.7	Verify each spray nozzle is unobstructed.	In accordance with the Surveillance Frequency Control Program

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE	FREQUENCY
<p>SR 3.7.1.1</p> <p>-----NOTE----- Not required to be performed prior to entry into MODE 3. -----</p> <p>Verify each required MSSV lift setpoint per Table 3.7.1-2 in accordance with the INSERVICE TESTING PROGRAM. Following testing, lift settings shall be within <math>\pm 1\%</math>.</p>	<p>In accordance with the INSERVICE TESTING PROGRAM</p>

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE	FREQUENCY
<p>SR 3.7.2.1</p> <p>-----NOTE----- Not required to be performed prior to entry into MODE 3.</p> <p>-----</p> <p>Verify closure time of each MSIV is within limits with each actuator train on an actual or simulated actuation signal.</p>	<p>In accordance with the INSERVICE TESTING PROGRAM</p>

**ACTIONS (continued)**

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. <u>AND</u>	6 hours
	C.2 Be in MODE 5.	36 hours

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE	FREQUENCY
SR 3.7.3.1 Verify the closure time of each MFIV is within limits on an actual or simulated actuation signal.	In accordance with the INSERVICE TESTING PROGRAM

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE	FREQUENCY
<p>SR 3.7.5.1    Verify each AFW manual, power operated, and automatic valve in each water flow path and in both steam supply flow paths to the steam turbine driven pump, that is not locked, sealed, or otherwise secured in position, is in the correct position.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.7.5.2    -----NOTE-----            Not required to be performed for the turbine driven AFW pump until 72 hours after reaching 532°F in the RCS.            -----            Verify the developed head of each AFW pump at the flow test point is greater than or equal to the required developed head.</p>	<p>In accordance with the INSERVICE TESTING PROGRAM</p>
<p>SR 3.7.5.3    -----NOTES-----            1. Not required to be performed for the turbine driven AFW pump until 72 hours after reaching 532°F in the RCS.            2. Not applicable in MODE 4 when steam generator is relied upon for heat removal.            -----            Verify each AFW automatic valve that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

5.5 Programs and Manuals (continued)

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5.5.7 Reactor Coolant Pump Flywheel Inspection Program

This program shall provide for the inspection of each reactor coolant pump flywheel per the recommendations of regulatory position c.4.b of Regulatory Guide 1.14, Revision 0, October 1971.

5.5.8 Deleted

(continued)





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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 206, 206, AND 206 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, STN 50-530

1.0 INTRODUCTION

By letter dated June 22, 2017 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17173A877), Arizona Public Service Company (APS, the licensee) requested changes to the technical specifications (TSs) for Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3. Specifically, the licensee requested to adopt U.S. Nuclear Regulatory Commission (NRC)-approved Technical Specifications Task Force (TSTF) Improved Standard Technical Specifications (STS) Change Traveler TSTF-545, Revision 3, "TS Inservice Testing Program Removal & Clarify SR [Surveillance Requirement] Usage Rule Application to Section 5.5 Testing," dated October 21, 2015 (ADAMS Accession No. ML15294A555).

The licensee's proposed changes would delete PVNGS, Units 1, 2, and 3, TS 5.5.8, "Inservice Testing Program," and add a new defined term, "INSERVICE TESTING PROGRAM," to TS Section 1.1, "Definitions." Also, all existing references to the "Inservice Testing Program" in the PVNGS, Units 1, 2, and 3 TS SRs would be replaced with "INSERVICE TESTING PROGRAM" so that the SRs refer to the new definition in lieu of the deleted program.

The licensee stated that the license amendment request is consistent with NRC-approved Traveler TSTF-545, Revision 3. The availability of this TS improvement was announced in the *Federal Register* on March 28, 2016 (81 FR 17208), as part of the consolidated line item improvement process.

2.0 REGULATORY EVALUATION

2.1 Description of Inservice Testing Requirements and TSTF-545

An inservice test is a test to assess the operational readiness of a structure, system, or component after first electrical generation by nuclear fuel. The American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Plants (OM Code) provides requirements for inservice testing of certain components in light-water nuclear power

plants. The ASME OM Code identifies the components subject to the testing (i.e., pumps, valves, pressure relief devices, and dynamic restraints), responsibilities, methods, intervals, parameters to be measured and evaluated, criteria for evaluating results, corrective actions, personnel qualification, and recordkeeping. Title 10 of the *Code of Federal Regulations* (10 CFR), paragraph 50.55a(f), "Preservice and inservice testing requirements," requires that inservice testing of certain ASME Code Class 1, 2, and 3 components must meet the requirements of the ASME OM Code and applicable addenda. The facility's TSs also prescribe inservice testing requirements and frequencies for ASME Code Class 1, 2, and 3 components.

The regulation in 10 CFR 50.55a(f)(5)(ii) states, in part, "If a revised inservice test program for a facility conflicts with the technical specifications for the facility, the licensee must apply to the Commission for amendment of the technical specifications to conform the technical specifications to the revised program." TSTF-545, Revision 3, provides guidance to licensees on how to request license amendments that would eliminate conflicting requirements between 10 CFR 50.55a, "Codes and standards," and the TSs. TSTF-545, Revision 3, proposes elimination of the Inservice Testing Program from the Administrative Controls section of the TSs. The TSs contain SRs that require testing or test intervals in accordance with the Inservice Testing Program. The elimination of the Inservice Testing Program from the TSs could cause uncertainty regarding the correct application of these SRs. Therefore, TSTF-545, Revision 3, also proposes adding a new definition, "INSERVICE TESTING PROGRAM," to the TSs, which would be defined as "the licensee program that fulfills the requirements of 10 CFR 50.55a(f)." TSTF-545, Revision 3, proposes replacement of existing uses of the term, "Inservice Testing Program," with the defined term, as denoted by capitalized letters, throughout the TSs.

## 2.2 Proposed Technical Specifications Changes

The licensee proposed to delete TS 5.5.8 from the Administrative Controls section of the TSs and replace it with the word "Deleted." TS 5.5.8 currently states:

### Inservice Testing Program

This program provides controls for inservice testing of ASME Code Class 1, 2, and 3 components. The program shall include the following:

- a. Testing frequencies applicable to the ASME Code for Operation and Maintenance of Nuclear Power Plants (ASME OM Code) and applicable Addenda as follows:

ASME OM  
Code and  
applicable Addenda  
terminology for  
Inservice testing  
activities

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Required Frequencies  
for performing inservice  
testing activities

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Weekly  
Monthly  
Quarterly or every  
3 months  
Semiannually or

At least once per 7 days  
At least once per 31 days  
At least once per 92 days

every 6 months	At least once per 184 days
Every 9 months	At least once per 276 days
Yearly or annually	At least once per 366 days
Biennially or every 2 years	At least once per 731 days

- b. The provisions of SR 3.0.2 are applicable to the above required Frequencies and to other normal and accelerated Frequencies specified as 2 years or less in the Inservice Testing Program for performing inservice testing activities,
- c. The provisions of SR 3.0.3 are applicable to inservice testing activities, and
- d. Nothing in the ASME OM Code shall be construed to supersede the requirements of any TS.

SR 3.0.2 allows an extension of inservice testing intervals by up to 25 percent. If it is discovered that a surveillance associated with an inservice testing activity was not performed within the required interval, SR 3.0.3 allows the licensee to delay declaring the associated limiting condition for operation not met in order to perform the missed surveillance. The licensee did not request changes to SR 3.0.2 or SR 3.0.3.

The licensee requested to revise the Definitions section of the TSs by adding the term, "INSERVICE TESTING PROGRAM," with the following definition: "The INSERVICE TESTING PROGRAM is the licensee program that fulfills the requirements of 10 CFR 50.55a(f)." The licensee also requested that all existing occurrences of "Inservice Testing Program" in TS SRs be replaced with "INSERVICE TESTING PROGRAM," so that the SRs refer to the new definition in lieu of the deleted program.

### 2.3 Regulatory Requirements and Guidance

The NRC staff considered the following regulatory requirements, guidance, and licensing information during its review of the proposed changes:

#### *Technical Specifications*

Paragraph 50.36(c) of 10 CFR requires TSs to include items in the following categories: (1) safety limits, limiting safety system settings, and limiting control settings; (2) limiting conditions for operation; (3) SRs; (4) design features; (5) administrative controls; (6) decommissioning; (7) initial notification; and (8) written reports. Paragraph 50.36(c)(3) of 10 CFR states that "[s]urveillance requirements are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met." Paragraph 50.36(c)(5) of 10 CFR states that "[a]dministrative controls are the provisions relating to organization and management, procedures, recordkeeping, review and audit, and reporting necessary to assure operation of the facility in a safe manner."

The NRC staff's guidance for review of the TSs is in NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR [Light-Water Reactor] Edition," Chapter 16, "Technical Specifications," Revision 3, dated March 2010 (ADAMS

Accession No. ML100351425). As described therein, as part of the regulatory standardization effort, the staff has prepared improved STSs for each of the LWR nuclear steam supply systems and associated balance-of-plant equipment systems. The licensee's proposed amendment is based on TSTF-545, Revision 3, which is an NRC-approved change to the improved STSs. The staff's review includes consideration of whether the proposed changes are consistent with TSTF-545, Revision 3. Special attention is given to TS provisions that depart from the improved STSs, as modified by NRC-approved TSTF travelers, to determine whether proposed differences are justified by uniqueness in plant design or other considerations so that 10 CFR 50.36 is met. In addition, the guidance states that comparing the change to previous STSs can help clarify the intent of the TSs.

### *Inservice Testing*

Pursuant to 10 CFR 50.54, "Conditions of licenses," the applicable requirements of 10 CFR 50.55a are conditions of every nuclear power reactor operating license issued under 10 CFR Part 50. These requirements include inservice testing of pumps and valves at nuclear power reactors in accordance with the ASME OM Code as specified in 10 CFR 50.55a(f). The regulations in 10 CFR 50.55a(f) state, in part:

Systems and components of boiling and pressurized water-cooled nuclear power reactors must meet the requirements ... of the ASME BPV [Boiler and Pressure Vessel] Code and ASME OM Code as specified in this paragraph. Each operating license for a boiling or pressurized water-cooled nuclear facility is subject to the following conditions [referring to 10 CFR 50.55a(f)(1) through (f)(6)]. . . .

The ASME OM Code is a consensus standard, which is incorporated by reference into 10 CFR 50.55a. During the incorporation process, the NRC staff reviewed the ASME OM Code requirements for technical sufficiency and found that the ASME OM Code inservice testing program requirements were suitable for incorporation into the NRC's rules.

The regulation in 10 CFR 50.55(a)(f)(5)(ii) states, in part: "If a revised inservice test program for a facility conflicts with the technical specifications for the facility, the licensee must apply to the Commission for amendment of the technical specifications to conform the technical specifications to the revised program."

NUREG-1482, Revision 2, "Guidelines for Inservice Testing at Nuclear Power Plants: Inservice Testing of Pumps and Valves and Inservice Examination and Testing of Dynamic Restraints (Snubbers) at Nuclear Power Plants, Final Report," October 2013 (ADAMS Accession No. ML13295A020) provides guidance for the inservice testing of pumps and valves.

NUREG-0800, Section 3.9.6, "Functional Design, Qualification, and Inservice Testing Programs for Pumps, Valves, and Dynamic Restraints," Revision 3, March 2007 (ADAMS Accession No. ML070720041), provides guidance and acceptance criteria for the NRC staff review of the inservice testing program for pumps and valves.

### 3.0 TECHNICAL EVALUATION

The NRC staff evaluated the licensee's application to determine if the proposed changes are consistent with the regulations, guidance, and licensing information discussed in Section 2.3 of this safety evaluation. In determining whether an amendment to a license will be issued, the

Commission is guided by the considerations that govern the issuance of initial licenses to the extent applicable and appropriate. Among the considerations are whether the TSs, as amended, would provide the necessary administrative controls per 10 CFR 50.36(c)(5) (i.e., provisions relating to organization and management, procedures, recordkeeping, review and audit, and reporting necessary to assure operation of the facility in a safe manner). In making its determination as to whether to amend the license, the staff considered those regulatory requirements that are automatically conditions of the licenses through 10 CFR 50.54. Where the regulations already condition the licenses, there is no need for a duplicative requirement in the TSs; the regulations provide the necessary reasonable assurance of the health and safety of the public.

### 3.1 Deletion of the Inservice Testing Program from the TSs

TS 5.5.8 requires the licensee to have an inservice testing program that provides controls for inservice testing of ASME Code Class 1, 2, and 3 components (i.e., pumps and valves). Through 10 CFR 50.54, the applicable requirements of 10 CFR 50.55a are conditions of every nuclear power reactor operating license issued under 10 CFR Part 50. These requirements include 10 CFR 50.55a(f), which specifies the requirements for the inservice testing of pumps and valves. Therefore, requiring the licensee to have an inservice testing program in TSs is duplicative of the license condition in 10 CFR 50.54. Thus, with the proposed TS changes, the licensee will still be required to maintain an inservice testing program in accordance with the ASME OM Code, as specified in 10 CFR 50.55a(f). For the reasons explained below, it is not necessary to have additional administrative controls in the TSs relating to the inservice testing program to assure operation of the facility in a safe manner.

#### *Consideration of TS 5.5.8.a*

The ASME OM Code requires testing to normally be performed within certain time periods. TS 5.5.8.a sets inservice testing frequencies more precisely than those specified in the ASME OM Code and applicable addenda (e.g., "at least once per 31 days" contrasted with "monthly"). However, the NRC staff determined that the more precise inservice testing frequencies are not necessary to assure operation of the facility in a safe manner.

#### *Consideration of TS 5.5.8.b*

TS 5.5.8.b allows the licensee to extend, by up to 25 percent, the interval between inservice testing activities, as required by TS 5.5.8.a and for other normal and accelerated frequencies specified as 2 years or less in the inservice testing program.

The NRC staff determined that the TS 5.5.8.b allowance to extend inservice testing intervals is not needed to assure operation of the facility in a safe manner. Therefore, the NRC staff determined that deletion of TS 5.5.8.b is acceptable. The deletion of TS 5.5.8.b does not impact the licensee's ability to extend inservice testing intervals using ASME Code Case OMN-20, as authorized by the NRC.

#### *Consideration of TS 5.5.8.c*

TS 5.5.8.c allows the licensee to use SR 3.0.3 when it discovers that an SR associated with an inservice test was not performed within its specified frequency. SR 3.0.3 allows the licensee to delay declaring a limiting condition for operation not met in order to perform the missed surveillance. The use of SR 3.0.3 for inservice tests is limited to those inservice tests required

by an SR. In accordance with 10 CFR 50.55a, the licensee may also request relief from the ASME OM Code requirements to address issues associated with a missed inservice test. Deletion of TS 5.5.8.c does not change any of these requirements, and SR 3.0.3 will continue to apply to those inservice tests required by SRs. Based on the above, the NRC staff determined that deletion of TS 5.5.8.c is acceptable.

#### *Consideration of TS 5.5.8.d*

TS 5.5.8.d states that nothing in the ASME OM Code shall be construed to supersede the requirements of any TS. However, the regulations in 10 CFR 50.55a(f)(5)(ii) address what to do if a revised inservice testing program for a facility conflicts with the TSs for the facility; they require the licensee to apply for an amendment to the TSs to conform the TSs to the revised program at least 6 months prior to the start of the period for which the provisions become applicable. Accordingly, there is no need for a TS stating how to address conflicts between the TSs and the inservice testing program because the regulations specify how conflicts must be resolved.

#### *Conclusion Regarding Deletion of TS 5.5.8*

The NRC staff determined that the requirements currently in TS 5.5.8 are not necessary to assure operation of the facility in a safe manner. Based on this evaluation, the staff concludes that deletion of TS 5.5.8 from the licensee's TSs is acceptable, because TS 5.5.8 is not required by 10 CFR 50.36(c)(5).

### **3.2 Definition of INSERVICE TESTING PROGRAM and Revision to SRs**

The licensee proposes to revise the TS Definitions section to include the term, "INSERVICE TESTING PROGRAM," with the following definition: "The INSERVICE TESTING PROGRAM is the licensee program that fulfills the requirements of 10 CFR 50.55a(f)." The proposed definition of the INSERVICE TESTING PROGRAM is consistent with the definition in NRC-approved TSTF-545, Revision 3. The definition is acceptable to the NRC staff because it correctly refers to the inservice testing requirements in 10 CFR 50.55a(f).

The licensee requested that all existing references to the "Inservice Testing Program" in SRs be revised to "INSERVICE TESTING PROGRAM" to reference the new TS defined term in lieu of the deleted program. The proposed change is consistent with the intent of TSTF-545, Revision 3, to replace the current references in SRs with the new definition. The NRC staff verified that for each SR reference to the "Inservice Testing Program," the licensee proposed to change the reference to "INSERVICE TESTING PROGRAM." The proposed change does not alter how the SR testing is performed. However, the inservice testing frequencies could change because the TSs will no longer include the more precise test frequencies in TS 5.5.8.a. As discussed in Section 3.1 of this safety evaluation, the staff determined that the TSs do not need to include the more precise testing frequencies currently in TS 5.5.8.a. Based on its review, the staff determined that revising the SRs to refer to the new definition is acceptable because these SRs will continue to be performed in accordance with the requirements of 10 CFR 50.55a(f). The staff also determined that, with the proposed changes that allow less-precise testing frequencies, 10 CFR 50.36(c)(3) will continue to be met because the SRs will continue to ensure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met.

### 3.3 Deviations from TSTF-545

In its application, the licensee identified the following deviations from TSTF-545, Revision 3:

1. The licensee proposes to delete the content of TS 5.5.8, but retain the TS number and add the word "DELETED." The licensee did not propose to renumber the subsequent TS programs.
2. PVNGS-specific TS LCO numbering would be maintained since there are some TS components in TSTF-545, Revision 3, that are not in the PVNGS design

The NRC staff finds that the proposed deviations are editorial in nature and that the licensee's proposed TS changes remain consistent with the intent of TSTF-545, Revision 3. Therefore, the staff finds that the licensee's proposed TS changes are acceptable.

### 4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Arizona State official was notified of the proposed issuance of the amendments on April 30, 2018. The State official had no comments.

### 5.0 ENVIRONMENTAL CONSIDERATION

The amendments change requirements with respect to the installation or use of facility components located within the restricted area as defined in 10 CFR Part 20 and change SRs. 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 published in the *Federal Register* on August 15, 2017 (82 FR 38716), and there has been no public comment on such finding. 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.

### 6.0 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) there is reasonable assurance that 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 Contributor: Tarico Sweat, NRR

Date: June 7, 2018

SUBJECT: PALO VERDE NUCLEAR GENERATING STATION, UNITS 1, 2, AND 3 -  
ISSUANCE OF AMENDMENTS TO REVISE TECHNICAL SPECIFICATIONS  
TO ADOPT TECHNICAL SPECIFICATIONS TASK FORCE (TSTF) TRAVELER  
TSTF-545, REVISION 3, "TS INSERVICE TESTING PROGRAM REMOVAL &  
CLARIFY SR USAGE RULE APPLICATION TO SECTION 5.5 TESTING"  
(CAC NOS. MF9856, MF9857, AND MF9858; EPID L-2017-LLA-0250) DATED  
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