

Mr. Gregg R. Overbeck
Senior Vice President, Nuclear
Arizona Public Service Company
P. O. Box 52034
Phoenix, AZ 85072-2034

September 29, 2005

SUBJECT: PALO VERDE NUCLEAR GENERATING STATION, UNITS 1, 2, AND 3 -
ISSUANCE OF AMENDMENTS ON TECHNICAL SPECIFICATIONS 3.8.1 AND
3.8.4 – ALTERNATING CURRENT (AC) AND DIRECT CURRENT (DC)
ELECTRIC POWER SOURCES (TAC NOS. MB9150, MB9151, AND MB9152)

Dear Mr. Overbeck:

The Commission has issued the enclosed Amendment No. 156 to Facility Operating License No. NPF-41, Amendment No. 156 to Facility Operating License No. NPF-51, and Amendment No. 156 to 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 May 28, 2003, as supplemented by letters dated January 22 and June 23, 2004, and February 2 and September 27, 2005.

The amendments revise several surveillance requirements (SRs) in TS 3.8.1 on AC sources and SR 3.8.4.6 for DC sources for plant operation. The revised SRs have notes deleted or modified to adopt in part the staff-approved TS Task Force (TSTF) 283, Revision 3, which will allow these revised SRs to be performed, or partially performed, in reactor modes that previously were not allowed by the TSs. The proposed changes to SRs 3.8.4.7 and 3.8.4.8 for DC sources were withdrawn in your letter dated June 23, 2004, and the proposed changes to SRs 3.8.1.9, 3.8.1.10, and 3.8.1.14 were withdrawn in your letter dated September 27, 2005. A copy of the Notice of Partial Withdrawal of Application for Amendments to Facility Operating Licenses that has been forwarded to the Office of the Federal Register for publication is enclosed. 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/

Mel B. Fields, Senior Project Manager, Section 2
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

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

Enclosures: 1. Amendment No. to NPF-41
2. Amendment No. to NPF-51
3. Amendment No. to NPF-74
4. Safety Evaluation
5. Notice of Partial Withdrawal Copy

cc w/encls: See next page

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ARIZONA PUBLIC SERVICE COMPANY, ET AL.

DOCKET NO. STN 50-528

PALO VERDE NUCLEAR GENERATING STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 156
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 May 28, 2003, as supplemented by letters dated January 22 and June 23, 2004, and February 2 and September 27, 2005, 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. 156, 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 including the incorporation of the changes to the Technical Specification Bases for Technical Specification 3.8.1 and Surveillance Requirement 3.8.4.6 as described in the licensee's application dated May 28, 2003, and its supplements dated January 22, 2004, and February 2 and September 27, 2005.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Daniel S. Collins, Acting Chief, Section 2
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: September 29, 2005

ARIZONA PUBLIC SERVICE COMPANY, ET AL.

DOCKET NO. STN 50-529

PALO VERDE NUCLEAR GENERATING STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 156
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 May 28, 2003, as supplemented by letters dated January 22 and June 23, 2004, and February 2 and September 27, 2005, 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-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. 156, 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 including the incorporation of the changes to the Technical Specification Bases for Technical Specification 3.8.1 and Surveillance Requirement 3.8.4.6 as described in the licensee's application dated May 28, 2003, and its supplements dated January 22, 2004, and February 2 and September 27, 2005.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Daniel S. Collins, Acting Chief, Section 2
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: September 29, 2005

ARIZONA PUBLIC SERVICE COMPANY, ET AL.

DOCKET NO. STN 50-530

PALO VERDE NUCLEAR GENERATING STATION, UNIT 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 156
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 May 28, 2003, as supplemented by letters dated January 22 and June 23, 2004, and February 2 and September 27, 2005, 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. 156, 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 including the incorporation of the changes to the Technical Specification Bases for Technical Specification 3.8.1 and Surveillance Requirement 3.8.4.6 as described in the licensee's application dated May 28, 2003, and its supplements dated January 22, 2004, and February 2 and September 27, 2005.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Daniel S. Collins, Acting Chief, Section 2
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: September 29, 2005

ATTACHMENT TO LICENSE AMENDMENT NOS. 156, 156, AND 156

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 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.

REMOVE

3.8.1-8
3.8.1-10
3.8.1-11
3.8.1-12
3.8.1-14
3.8.1-15
3.8.1-16
3.8.1-17
3.8.4-3
3.8.4-4

INSERT

3.8.1-8
3.8.1-10
3.8.1-11
3.8.1-12
3.8.1-14
3.8.1-15
3.8.1-16
3.8.1-17
3.8.4-3
3.8.4-4

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 156 TO FACILITY OPERATING LICENSE NO. NPF-41
AMENDMENT NO. 156 TO FACILITY OPERATING LICENSE NO. NPF-51
AMENDMENT NO. 156 TO FACILITY OPERATING LICENSE NO. 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 May 28, 2003 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML0315406840), as supplemented by letters dated January 22 (ADAMS Accession No. ML040290877) and June 23, 2004 (ADAMS Accession No. ML0418401440), and February 2 (ADAMS Accession No. ML050460214) and September 27, 2005 (ADAMS Accession No. ML052710090), Arizona Public Service Company (the licensee), requested changes to the Technical Specifications (TSs) for Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3. The amendments, as originally submitted in the application, would modify several surveillance requirements (SRs) in TSs 3.8.1 and 3.8.4 on alternating current (AC) and direct current (DC) sources, respectively, for plant operation. The revised SRs would have notes deleted or modified to allow the SRs to be performed, or partially performed, in reactor modes that are currently not allowed by the TSs. The current SRs are not allowed to be performed in Modes 1 and 2, and several of the SRs also cannot be performed in Modes 3 and 4. The purpose of the proposed amendments is to allow testing of the following AC and DC electrical sources in modes not currently allowed: the qualified circuits between the offsite transmission network and the onsite Class 1E electrical power distribution system, the emergency diesel generators (EDGs) and the batteries and battery chargers of the DC electrical power system.

The proposed changes to the notes in SRs 3.8.4.7 and 3.8.4.8 for the DC electric power subsystems were withdrawn by the licensee in its letter dated June 23, 2004. The proposed changes to SRs 3.8.1.9, 3.8.1.10, and 3.8.1.14 were withdrawn by the licensee in its letter dated September 27, 2005.

The proposed changes would do the following:

- Delete mode restrictions in SR 3.8.1.13 (Protective Trip Bypass Test) and SR 3.8.1.20 (DG Starting Independence Test) to allow performing the required testing during Modes 1 and 2.

- Revise mode restrictions in SR 3.8.1.8 (Transfer of AC Sources Test), SR 3.8.1.11 (Simulated Loss of Offsite Power Test), SR 3.8.1.12 (Auto Start of Safety Injection Signal Test), SR 3.8.1.16 (Restoration of Loads to Offsite Power Test), SR 3.8.1.17 (Verification of Test Mode Override Test), SR 3.8.1.18 (Engineered Safety and Auto-transfer Load Sequencing Test), SR 3.8.1.19 (Loss of Offsite Power Plus SI Signal Response Test), and SR 3.8.4.6 (Battery Charger Test) to allow performance, or partial performance, of the SRs during currently prohibited modes in order to re-establish operability following corrective maintenance, modifications, deficient or incomplete surveillance testing, and other operability concerns during plant operation.
- Remove a footnote from SR 3.8.4.8 (Battery Capacity Test) that is no longer valid and, therefore, does not need to be in the TSs.

These changes adopt in part the NRC-approved changes to the Standard TS (STs) in TS Task Force (TSTF) 283, Revision 3 (TSTF-283) on eliminating mode restrictions on the performance of surveillances in TSs 3.8.1 and 3.8.4. The NRC approved TSTF-283 for inclusion in the improved STs in NUREG-1431 for Westinghouse plants, and for consideration for being added to plant TSs. The intent of TSTF-283 is to allow testing of the EDGs and Class 1E batteries and battery chargers in modes not currently allowed for the purpose of maintaining or reestablishing system or component operability (e.g., post maintenance testing), provided a safety assessment is made before the testing for operability.

As stated in the application, the above changes in TSs 3.8.1 and 3.8.4 for the AC electric sources would provide the licensee with flexibility in outage scheduling and reduce outage critical path time since these EDG surveillance tests would no longer have to be performed during an outage. In addition, the changes will potentially allow the licensee to avoid a plant shutdown if corrective maintenance (planned or unplanned) performed during power operation results in the need to perform any of the above surveillances to demonstrate operability and to maximize its flexibility in responding to an event during shutdown when other engineered safety feature equipment may be out-of-service.

The licensee's description of the proposed changes, technical analysis, and regulatory analysis in support of its proposed license amendments are given in Sections 2.0, 4.0 and 5.2, respectively, of the licensee's application.

The additional information provided in the supplemental letters dated January 22 and June 23, 2004, and February 2 and September 27, 2005, does not expand the scope of the application as noticed and does not change the NRC staff's original proposed no significant hazards consideration determination published in the *Federal Register* on July 8, 2003 (68 FR 40709).

2.0 REGULATORY EVALUATION

The proposed amendments involve the surveillance testing of the emergency buses and EDGs that currently are not allowed in Modes 1 and 2. The regulatory requirements involved are as follows:

- General Design Criterion (GDC) 17, "Electric power systems," of Appendix A, "General Design Criteria for Nuclear Power Plants," to Title 10, Part 50, of the *Code of Federal*

Regulations (CFR), requires, in part, that nuclear power plants have onsite and offsite electric power systems to permit the functioning of structures, systems, and components (SSCs) that are important to safety. The onsite system is required to have sufficient independence, redundancy, and testability to perform its safety function, assuming a single failure. The offsite power system is required to supply power from two physically independent circuits that are designed and located so as to minimize, to the extent practical, the likelihood of their simultaneous failure under operating and postulated accident and environmental conditions. In addition, this criterion requires provisions to minimize the probability of losing electric power from the remaining electric power supplies as a result of loss of power (LOP) from the unit, the offsite transmission network, or the onsite power supplies.

- GDC 18, "Inspection and testing of electric power systems," requires that electric power systems that are important to safety must be designed to permit appropriate periodic inspection and testing.
- 10 CFR 50.36, "Technical specifications," requires a licensee's TSs to have SRs relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operations are within safety limits, and that the limiting conditions for operation (LCOs) will be met. The SRs may include mode restrictions based on the safety aspects of conducting the surveillances in excluded reactor modes.
- 10 CFR 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants," requires that preventive maintenance activities must not reduce the overall availability of the SSCs.
- Regulatory Guide (RG) 1.9, "Selection, Design, Qualification, and Testing of Emergency Diesel Generator Units Used as Class 1E Onsite Electric Power Systems at Nuclear Power Plants," provides guidance regarding selection and testing of a diesel generator (DG) set.

3.0 BACKGROUND

The onsite electric power system for PVNGS is described in Enclosure 1 to the application. It is provided with preferred power from the offsite system through two physically independent sources of power in accordance with GDC 17. With regard to the safety-related (Class 1E) power supply configuration, one preferred circuit from the switchyard supplies power to a multi-winding startup transformer, one winding of which feeds a 13.8/4.16-kV engineered safety feature (ESF) transformer. The second preferred (offsite) circuit supplies power from the switchyard via another startup transformer, which feeds a second 13.8/4.16-kV ESF transformer. Each ESF transformer supplies power to an associated Class 1E 4.16-kV bus. For each safety-related bus normally fed by its associated ESF transformer, the capability exists for either bus to be supplied via the other preferred (offsite) source connection.

The onsite power system is generally divided into two load groups. Each load group consists of an arrangement of buses, transformers, switching equipment, and loads fed from a common power supply. Each load group is independently capable of safely bringing the plant to a cold

shutdown condition, as the Class 1E electrical power distribution system is designed to satisfy the single-failure criterion.

The onsite standby power system includes Class 1E AC and DC power supply capability for equipment used to achieve and maintain a cold shutdown of the plant and to mitigate the consequences of a design-basis accident. With regard to the Class 1E AC power, each of the two Class 1E load groups, at the 4.16-kV bus level, is capable of being powered from an independent EDG (one per load group or two EDGs for each unit) which functions to provide power in the event of a loss of the preferred (offsite) power source. Undervoltage relays are provided for each 4.16-kV bus to detect an undervoltage condition and automatically start the EDG in response to such a condition. Each EDG is capable of starting automatically on a safety injection actuation signal (SIAS) (e.g., low pressurizer pressure or high containment pressure), auxiliary feedwater actuation signal (AFAS), containment spray actuation signal (CSAS), or vital bus degraded voltage or undervoltage voltage - LOOP. These are the ESF actuation signals.

After starting, the EDG will be automatically tied to its respective vital bus if offsite power is tripped as a consequence of vital bus undervoltage or degraded voltage, independent of or coincident with an SIAS, CSAS, or AFAS. The EDGs will also start and operate in the standby mode without tying to the vital bus on these signals alone.

During LOOP, an undervoltage/load-shed signal trips all vital loads and non-permanently connected loads from the vital bus and, after the EDG is connected to the bus, the ESF load sequencer sequentially loads the vital loads onto the bus. The sequencing logic controls the permissive and starting signals to each motor controller to prevent overloading the EDG during this process. The ESF loads are automatically sequentially loaded in sufficient time to provide for safe reactor shutdown or to mitigate the consequences of a design basis loss-of-coolant accident (LOCA) by the automatic ESF load sequencer. There are two ESF load sequencers, one for each load group or EDG.

During testing of the EDG while it is paralleled to the preferred power supply, if an SIAS, CSAS, or AFAS were to occur, the EDG will continue to run, and its output breaker to the ESF bus would automatically open and switch to the emergency mode.

The Class 1E DC system includes four separate 125-V battery subsystems divided into two load groups, or trains. Each train consists of two independent battery banks and a dedicated battery charger to each battery bank. There are two backup battery chargers, one for each train, in the case that the dedicated battery charger is out-of-service. Each battery charger has the capacity to restore a battery bank from the design minimum charge to its fully charged state within 12 hours while supplying normal steady-state loads. Each battery is separately housed in a ventilated room apart from its charger and distribution center.

During normal operation, the 125-V DC loads are powered from the dedicated battery chargers with the batteries floating on the system, and with a backup battery charger available as described in the previous paragraph. In case of loss of normal power to the battery charger, the DC loads are powered from the batteries. Each 125-V battery has adequate storage capacity to carry the required DC load for its associated bus continuously for at least two hours.

4.0 TECHNICAL EVALUATION

The NRC staff has reviewed the licensee's justification for the proposed license amendment as described in the licensee's letters discussed in Section 1.0 of this Safety Evaluation (SE). The licensee's letters dated January 22 and June 23, 2004, and February 2 and September 27, 2005, provided responses to staff requests for additional information (RAIs). The NRC staff's detailed evaluation of the proposed amendment is provided in SE Section 4.1, "Mode Restriction Elimination," and SE Section 4.2, "TSTF-283 Revision 3 Changes."

4.1 Mode Restriction Elimination

4.1.1 SR 3.8.1.13 (Protective Trip Bypass Test)

The current SR requires that this surveillance shall not be performed in Mode 1 or 2. The proposed amendment would delete the Mode restriction.

The licensee stated that SR 3.8.1.13 requires verification that non-emergency automatic trip features are bypassed and that the remaining emergency automatic trips will trip the DG as necessary to prevent severe damage to the DG. This testing requires isolating all control air to the engine and manually initiating a generator overcurrent trip with the DG operating in the emergency mode and then verifying that the engine does not trip off and that the DG output breaker does not receive trip signal. In addition, manual initiation of the emergency stop, generator differential, low lube oil engine pressure and overspeed trips are performed with the engine in standby and verifying that the engine will not start on depression of the simulated ESF and simulated LOP push bottom on the engine control panel.

The licensee stated that performing this SR in Mode 1 or 2 would still allow the DG in test to respond to an auto-start signal and load automatically. However, the DG would be unavailable to respond to emergency signals during the time that each of the emergency mode trips are placed in effect. For this test, the total DG unavailability would be estimated to be approximately 30 minutes.

The NRC staff asked the licensee to discuss how the SR is performed and how the safety injection signal is generated without disturbing power operation. In its January 22, 2004, response, the licensee stated that the ESF actuation signals for the emergency start of the DG are the SIAS and AFAS. For three of the emergency trips (engine overspeed, generator differential, and manual emergency stop) the test is performed as follows: the DG is placed in a "standby" lineup, ready to automatically start. There are two pushbuttons located at the DG local control panel that simulate a LOOP and ESF signal. These pushbuttons, when actuated, provide a simulated LOP and ESF emergency start signal to the DG exactly as if an actual LOP or ESF signal was present. The particular trip to be tested is actuated (by means of a jumper or manual actuation), giving the DG an emergency trip signal. Both the LOP and ESF test pushbuttons are simultaneously depressed. The DG is then checked to ensure that it did not start. The DG is then reset and placed back into its "standby" lineup. The next emergency trip is tested in the same manner. This is performed for all three of these emergency trips, thus verifying that these emergency trips are not bypassed upon a LOP and ESF actuation.

The other emergency trip (engine low lube oil pressure) test is performed as follows: the DG is running in the emergency mode of operation due to an ESF signal. Field wires are lifted to simulate a loss of lube oil pressure. The DG is then checked to ensure that it has tripped. Then the simulated LOP pushbutton is depressed. The DG is then checked to ensure that it has not started. This verifies that the DG engine low lube oil pressure trip is not bypassed when the DG is in the emergency mode of operation with a LOP and ESF signal present.

The non-critical trips tests are performed as follows: the DG is started in an emergency start mode of operation, with a concurrent simulated LOP and ESF signal present. An electrical jumper is installed to simulate a non-critical trip signal for the DG output breaker. The DG output breaker is then verified to have not tripped open with this trip signal in. A solenoid valve is then de-energized that vents air from the control air circuitry to non-critical trips, thereby simulating these non-critical trips actuating. Then the DG is checked to ensure that it has not tripped.

On the basis of its review, the NRC staff finds that performing this SR in Mode 1 or 2 would still allow the DG in test to respond to an auto-start signal and load automatically. However, the DG would be unavailable to respond to emergency signals during the time that each of the emergency mode trips are placed in effect. For this test, the total unavailability would be estimated to be approximately 30 minutes. In addition, testing is only performed on one DG at a time and the other train DG remains fully operable. Based on the short time that one DG remains unavailable, the NRC staff believes that the probability of having an accident during this short time is very low and therefore, this modification is acceptable.

4.1.2 SR 3.8.1.20 (DG Starting Independence)

The current SR requires that this surveillance shall not be performed in Mode 1 or 2. The proposed amendment would delete the Mode restriction.

The licensee stated that SR 3.8.1.20 simultaneously starts both DGs in one unit to demonstrate that the DG starting independence has not been compromised. This test is identical to that which is performed by SR 3.8.1.15 for one DG. During this testing neither DG is connected to onsite or offsite power sources. Both DGs are started in standby only. Therefore, there is no possibility of any grid disturbances or electrical perturbations between the onsite or offsite power distribution systems and the DGs during the performance of this surveillance. Additionally, the DG can be started, during this test, in either the "test" or the "emergency" mode. If the simultaneous start occurs in the "test" mode, then all generator/engine protective trips would be in effect. If the simultaneous start occurs in the "emergency" mode, only the emergency trips are active with the DG running in standby but the DG can be returned to the "test" mode immediately, if necessary.

The NRC staff concludes that since neither DG is connected to onsite or offsite power during this test, this test would have no effect on the electrical distribution system and since the proposed new SR is consistent with NUREG-1432, the proposed change is acceptable.

4.2 TSTF-283 Revision 3 Changes

The licensee stated that incorporating TSTF-283 for the affected SRs (3.8.1.8, 3.8.1.11, 3.8.1.12, 3.8.1.16, 3.8.1.17, 3.8.1.18, 3.8.1.19, and 3.8.4.6) will give the flexibility to perform these surveillances for the purpose of reestablishing OPERABILITY without having to shutdown the associated unit. The licensee contends that performing these surveillances online can potentially eliminate any transients involved with having to shutdown the associated unit.

The proposed TS bases for the above SRs state that this assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed partial surveillance, a successful partial surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when the surveillance, or portions of the surveillance, is performed in these normally restricted modes. Risk insights or deterministic methods may be used for this assessment.

These surveillances would not normally be performed in Modes 1, 2, 3, or 4. Modifying these notes would allow for the testing of a battery charger in these previously restricted Modes. The intent of this requested revision is not to run this test in the restricted Modes for preventive maintenance.

4.2.1 SR 3.8.1.8 (Transfer of AC Sources Test)

The current SR requires that this surveillance shall not be performed in Mode 1 or 2. The proposed amendment would require that this surveillance shall not normally be performed in Mode 1 or 2. However, this surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Therefore, the NRC staff finds this change acceptable. Section 4.4 of this SE provides additional bases for this NRC staff finding.

4.2.2 SR 3.8.1.11 (Simulated Loss of Offsite Power Test)

The current SR requires that this surveillance shall not be performed in Mode 1, 2, 3, or 4. The proposed amendment would require that this surveillance shall not normally be performed in Mode 1, 2, 3, or 4. However, portions of the surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Therefore, the NRC staff finds this change acceptable. Section 4.4 of this SE provides additional bases for this NRC staff finding.

4.2.3 SR 3.8.1.12 (Auto Start on Safety Injection Signal Test)

The current SR requires that this surveillance shall not be performed in Mode 1, 2, 3, or 4. The proposed amendment would require that this surveillance shall not normally be performed in Mode 1, 2, 3, or 4. However, portions of the surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Therefore, the NRC staff finds this change acceptable. Section 4.4 of this SE provides additional bases for this NRC staff finding.

4.2.4 SR 3.8.1.16 (Restoration of Loads to Offsite Power Test)

The current SR requires that this surveillance shall not be performed in Mode 1, 2, 3, or 4. The proposed amendment would require that this surveillance shall not normally be performed in Mode 1, 2, 3, or 4. However, this surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Therefore, the NRC staff finds this change acceptable. Section 4.4 of this SE provides additional bases for this NRC staff finding.

4.2.5 SR 3.8.1.17 (Verification of Test Mode Override Test)

The current SR requires that this surveillance shall not be performed in Mode 1, 2, 3, or 4. The proposed amendment would require that this surveillance shall not normally be performed in Mode 1, 2, 3, or 4. However, portions of the surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Therefore, the NRC staff finds this change acceptable. Section 4.4 of this SE provides additional bases for this NRC staff finding.

4.2.6 SR 3.8.1.18 (Engineered Safety and Auto-Transfer Load Sequencing Test)

The current SR requires that this surveillance shall not be performed in Mode 1, 2, 3, or 4. The proposed amendment would require that this surveillance shall not normally be performed in Mode 1, 2, 3, or 4. However, this surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Therefore, the NRC staff finds this change acceptable. Section 4.4 of this SE provides additional bases for this NRC staff finding.

4.2.7 SR 3.8.1.19 (Loss of Offsite Power Plus SI Signal Response Test)

The current SR requires that this surveillance shall not be performed in Mode 1, 2, 3, or 4. The proposed amendment would require that this surveillance shall not normally be performed in Mode 1, 2, 3, or 4. However, portions of the surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Therefore, the NRC staff finds this change acceptable. Section 4.4 of this SE provides additional bases for this NRC staff finding.

4.2.8 SR 3.8.4.6 (Battery Charger Test)

The current SR requires that this surveillance shall not be performed in Mode 1, 2, 3, or 4 on the charger credited for OPERABILITY. The proposed amendment would require that this surveillance shall not normally be performed in Mode 1, 2, 3, or 4 on the charger credited for OPERABILITY. However, portions of the surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced.

The NRC staff asked the licensee to discuss the intent of this proposed note in detail. In its January 22, 2004, response, the licensee stated that for the performance of this SR on any Class 1E battery charger, the Class 1E backup battery charger would normally be available to

be placed on the DC bus to maintain its appropriate lineup as an operable DC source. The licensee stated that placing the backup battery charger on a Class 1E bus takes a very short period of time (less than 5 minutes) and will cause only a slight drop in voltage on the DC bus until the other charger is placed into service. The licensee further stated that in the remote possibility that a backup charger is not available to maintain the DC bus in an operable lineup, LCO 3.8.4, Condition C, would be entered for the performance of this surveillance test. TS Required Action C.1 would ensure battery cell parameters are monitored to acceptable levels (as contained in TS Table 3.8.6-1), up to 24 hours. After this period, if the required charger has not been restored to an operable status or battery parameters fall outside of prescribed limitations, the operable DC electric power subsystem/battery would be declared inoperable as required by TS Required Action C.2.

The licensee estimates that this surveillance would take approximately 12 hours to perform such that there would be sufficient time to perform this surveillance within the allowable constraints of LCO 3.8.4, Condition C. Condition C of LCO 3.8.4 requires that the battery cell parameters meet Table 3.8.6-1 (contained in LCO 3.8.6) "Category A" limits for designated pilot cells.

The licensee provided additional information in its RAI response dated January 22, 2004, on what actions it would consider if both the primary and backup battery chargers for a battery bank were inoperable, but some functionality still existed in one or both chargers. The licensee stated, "It is expected that with a functional battery charger, even though it may be inoperable, these pilot cell parameters would be able to be maintained and allowance of Condition C to be used." The NRC staff understands that this statement does not affect applicable completion times or permit the use of Condition C pilot cell parameters other than for battery monitoring purposes.

In the event that the primary Class 1E battery charger becomes inoperable, the licensee may utilize the backup Class 1E battery charger to maintain the Class 1E battery. The licensee would enter LCO 3.8.4, Condition C, which has a 24 hour completion time, if the required DC electrical power subsystem battery charger became inoperable. While in the 24 hour battery charger LCO, the licensee also needs to verify that the battery cell parameters stay within required limits. If the battery cell parameters fall outside of these defined limits, the licensee must enter in LCO 3.8.4, Condition A, which has a 2 hour completion time. Therefore, the NRC staff finds this change acceptable. Section 4.4 of this SE provides additional bases for this NRC staff finding.

4.2.9 SR 3.8.4.8 (Battery Capacity Test)

The current footnote to SR 3.8.4.8 states the following: "The requirement to perform SR 3.8.4.8 for the Unit 1 batteries A, B, and C is waived until entry into MODE 4 coming out of the ninth refueling outage for Unit 1 (1R09)." The licensee stated in its application that this footnote was associated with PVNGS Unit 1 coming out of its ninth refueling outage and this refueling outage was completed in May 2001. Because the unit has already come out of this outage, this footnote is no longer valid and, therefore, does not need to be in the TSs. The proposed deletion of this footnote also includes the deletion of the following line near the bottom of the page: "PALO VERDE, UNIT 1 AMENDMENT NO. 121." This line identifies that the amendment adding the footnote was Amendment No. 121 for only PVNGS, Unit 1.

Because the PVNGS Unit 1 ninth refueling outage has been completed, the NRC staff concludes that the footnote no longer imposes any requirements on the unit and, therefore, the removal of the footnote and the line near the bottom of the page from the TSs is only administrative in that the removal of the footnote and line will have no effect on the operation of, and does not remove any existing requirements on, Unit 1. Based on this, the NRC staff further concludes that the footnote is no longer valid and the proposed change is acceptable.

4.3 Changes to the TS Bases

The licensee presented the changes to the TS Bases for the proposed amendments in Attachment 4 to its application and in the letters dated January 22 and June 23, 2004, and February 2 and September 27, 2005. The NRC staff has reviewed these changes to the TS Bases for the SRs discussed above and has no disagreement with the changes.

4.4 Conclusions

The design of the onsite and offsite electric power systems for PVNGS to permit the functioning of SSCs that are important to safety is not being changed by the proposed amendments. Further, the amendments do not change the testing of the EDG, only the modes in which the testing is conducted. Therefore, PVNGS continues to meet GDC 17.

The ability to inspect and test the safety-related electric power systems for PVNGS, which must be designed to permit appropriate periodic inspection and testing, are not being changed by the amendments. Therefore, PVNGS continues to meet GDC 18.

Because (1) the surveillances are not being changed by the proposed amendment and can be conducted in the modes proposed after corrective maintenance by the amendment, (2) the proposed notes require a safety assessment to be performed by the licensee before conducting the surveillance to ensure that plant safety is maintained or enhanced, and (3) the full or partial performance of the SR is to demonstrate operability of the DGs and battery chargers, the NRC staff concludes that an unsafe condition should not exist when the licensee performs any of these SRs in reactor modes not currently allowed. Allowing the licensee to make the determination that performance of these SRs in modes not currently allowed maintains or enhances the safety of the plant, is similar to the regulation 10 CFR 50.59 in which the licensee is allowed to make changes to the plant as described in the Updated Safety Analysis Report if the changes meet the criteria given in the regulation. The criteria for this situation is that the licensee must determine that in conducting the SR the "safety of the plant is maintained or enhanced."

For the reasons discussed in Sections 4.1 through 4.3 above and summarized in the paragraph immediately above, the NRC staff concludes that the proposed changes to (1) SRs 3.8.1.11, 3.8.1.12, 3.8.1.16, 3.8.1.17, 3.8.1.18, and 3.8.1.19, to allow testing the EDGs in Modes 1 through 4; (2) SRs 3.8.1.8, 3.8.1.13, and 3.8.1.20 to allow testing the EDGs in Modes 1 and 2; (3) SR 3.8.4.6 to allow testing of the Class 1E battery chargers in Modes 1 through 4; and (4) SR 3.8.4.8 to delete a footnote that is no longer valid are acceptable. Therefore, based on this, the NRC staff also concludes that the amendments meet 10 CFR 50.36(c)(3).

Based on the evaluation given above and because the proposed amendments meet GDC 17, GDC 18, and 10 CFR 50.36(c), the NRC staff concludes that the amendments to the SRs discussed above are acceptable.

5.0 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.

6.0 ENVIRONMENTAL CONSIDERATION

The amendments change surveillance requirements. 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 (68 FR 40709). 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 Contributor: Amar Pal

Date: September 29, 2005

UNITED STATES NUCLEAR REGULATORY COMMISSION

ARIZONA PUBLIC SERVICE COMPANY

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

NOTICE OF PARTIAL WITHDRAWAL OF APPLICATION FOR
AMENDMENT TO FACILITY OPERATING LICENSE

The U.S. Nuclear Regulatory Commission (the Commission) has granted the request of Arizona Public Service Company (the licensee) to partially withdraw its May 28, 2003, application for proposed amendments to Facility Operating License No. NPF-41, NF-51, and NPF-74 for the Palo Verde Nuclear Generating Station, Units 1, 2, and 3, located in Maricopa County, Arizona.

The proposed amendments would modify several surveillance requirements (SRs) in Technical Specifications (TSs) 3.8.1 and 3.8.4 on alternating current and direct current sources, respectively, for plant operation. The revised SRs would have notes deleted or modified to allow the SRs to be performed, or partially performed, in reactor modes that are currently not allowed by the TSs. The current SRs are not allowed to be performed in Modes 1 and 2. Several of the current SRs also cannot be performed in Modes 3 and 4.

The Commission had previously issued a Notice of Consideration of Issuance of Amendment published in the *Federal Register* on July 8, 2003 (68 FR 40709). However, the licensee partially withdrew the proposed change in two separate letters. By letter dated June 23, 2004, the licensee withdrew the proposed changes to the notes in SR 3.8.4.7 and SR 3.8.4.8 and by letter dated September 27, 2005, the licensee withdrew the proposed changes to SRs 3.8.1.9, 3.8.1.10, and 3.8.1.14.

For further details with respect to this action, see the application for amendments dated May 28, 2003, and the licensee's letters dated June 23, 2004, and September 27, 2005, which partially withdrew the application for license amendments. Documents may be examined, and/or copied for a fee, at the NRC's Public Document Room (PDR), located at One White Flint North, Public File Area O1F21, 11555 Rockville Pike (first floor), Rockville, Maryland. Publicly available records will be accessible electronically from the Agencywide Documents Access and Management System (ADAMS) Public Electronic Reading Room on the internet at the NRC Web site,

<http://www.nrc.gov/reading-rm/adams/html>. Persons who do not have access to ADAMS or who encounter problems in accessing the documents located in ADAMS, should contact the NRC PDR Reference staff by telephone at 1-800-397-4209, 301-415-4737, or by email to pdr@nrc.gov.

Dated at Rockville, Maryland, this 29th day of September 2005.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

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