

March 1, 2002

Mr. Gregg R. Overbeck
Senior Vice President, Nuclear
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 ON SHUTDOWN COOLING AND COOLANT
CIRCULATION (TAC NOS. MB2955, MB2956, AND MB2957)

Dear Mr. Overbeck:

The Commission has issued the enclosed Amendment No. 139 to Facility Operating License No. NPF-41, Amendment No. 139 to Facility Operating License No. NPF-51, and Amendment No. 139 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 (TS) in response to your application dated September 11, 2001.

The amendments revise TS 3.9.5 to allow the non-operating shutdown cooling loop to be declared inoperable for a period up to 2 hours for surveillance testing in MODE 6. The change is based on Technical Specification Task Force Traveler number 361, Revision 2.

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

Sincerely,

/RA/

Jack Donohew, 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. 139 to NPF-41
2. Amendment No. 139 to NPF-51
3. Amendment No. 139 to NPF-74
4. Safety Evaluation

cc w/encls: See next page

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A. Chu

* RTSB SE memo dated 12/17/2001 (ML013510453)

** See previous concurrence

ACCESSION NO: ML020220224 TS: ML020670004 PKG: ML020660676 NRR-058

OFFICE	PDIV-2/PM	PDIV-1/LA	DRIP/TSS/SC	OGC	PDIV-2/SC
NAME	JDonohew	MMcAllister	RDennig*	CMarco**	SDembek
DATE	3/4/2002	3/4/02	12/17/2001	02/26/2002	3/5/02

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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. 139
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 September 11, 2001, 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. 139, 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 45 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Stephen Dembek, 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: March 1, 2002

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. 139
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 September 11, 2001, 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. 139, 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 45 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Stephen Dembek, 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: 139

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. 139
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 September 11, 2001, 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. 139, 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 45 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Stephen Dembek, 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: March 1, 2002

ATTACHMENT TO LICENSE AMENDMENT NOS. 139, 139, AND 139

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 page of the Appendix A Technical Specifications with the attached revised page. The revised page is identified by amendment number and contains a marginal line indicating the area of change.

REMOVE

3.9.5-1

INSERT

3.9.5-1

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 139 TO FACILITY OPERATING LICENSE NO. NPF-41,
AMENDMENT NO. 139 TO FACILITY OPERATING LICENSE NO. NPF-51,
AND AMENDMENT NO. 139 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 September 11, 2001, the Arizona Public Service Company (the licensee) requested changes to the Technical Specifications (TSs) for the Palo Verde Nuclear Generating Station (Palo Verde), Units 1, 2, and 3. The licensee submitted this request on behalf of itself, the Salt River Project Agricultural Improvement and Power District, Southern California Edison Company, El Paso Electric Company, Public Service Company of New Mexico, Los Angeles Department of Water and Power, and Southern California Public Power Authority.

The requested changes are to TS 3.9.5, "Shutdown Cooling (SDC) and Coolant Circulation-Low Water Level." The proposed addition of a note to limiting condition of operation (LCO) 3.9.5 would allow the non-operating shutdown cooling (SDC) loop to be declared inoperable for a period of up to two hours for surveillance testing in Mode 6. This change is based on the NRC-approved Technical Specification Task Force (TSTF)-361, Revision 2, for NUREG-1432, "[Improved] Standard Technical Specifications [for] Combustion Engineering Plants," dated April 1995. Changes to NUREG-1432 are applicable to the Palo Verde units because the units are Combustion Engineering plants, and the TSs for the units are based on NUREG-1432.

In addition, the licensee stated that the TS 3.9.5 Bases will be revised to ensure that consideration is given to such factors as core time to boil, a potential boron dilution event, and the ability to inject borated water into the core, if needed. The TS Bases insert for the TSTF stated that "consideration should be given" and "consideration should include" as part of the text. The licensee determined that this wording needed to be strengthened. The licensee stated that "should" would be replaced by "shall," and the Bases wording would be changed to "consideration shall be given" and "consideration shall as a minimum include," respectively.

2.0 BACKGROUND

Section 182a of the Atomic Energy Act requires that technical specifications be included in nuclear power plant operating licenses. On February 6, 1987, the Commission issued an "Interim Policy Statement on Technical Specification Improvements for Nuclear Power

Reactors.” During the period from 1989 to 1992, utility groups and the NRC staff developed improved Standard Technical Specifications (STS). On July 22, 1993, the Commission issued its Final Policy Statement, which described the safety benefits of the improved STS, and encouraged licensees to use the improved STS as the basis for plant-specific TS amendments, and for complete conversions to plant-specific improved TS. The Palo Verde units converted to the improved TS in 1998.

The industry and the NRC staff have worked to improve the new improved STS, and many generic changes have been developed. These changes have improved the adoption process for generically acceptable changes to plant improved TS. Generic changes to the improved STS NUREGs are proposed to the NRC by the Nuclear Energy Institute TSTFs, such as TSTF-361. After NRC approval, these TSTFs are available for adoption by plants.

3.0 EVALUATION

The need for Palo Verde to adopt TSTF-361, Revision 2 is that limiting condition for operation (LCO) 3.9.5 does not allow the non-operating SDC loop to be inoperable to support surveillance testing, while LCO 3.4.7, "RCS Loops - Mode 5, Loops Filled," and LCO 3.4.8, "RCS Loops - Mode 5, Loops Not Filled," both allow the non-operating SDC loop to be inoperable for a period of up to two hours to perform surveillance testing, provided the other SDC loop is operable and operating.

The proposed amendment would add a note to LCO 3.9.5 that would permit one required-operable (or standby) SDC loop to be declared inoperable for a period of up to two hours for surveillance testing, provided the other SDC loop is operable and in operation. TS 3.9.5 is applicable in Mode 6 with the water level less than 23 feet above the top of the reactor vessel flange. The addition of the proposed Note to LCO would permit the licensee to declare the standby SDC loop inoperable for surveillance testing for up to 2 hours without entering and following the LCO 3.9.5 Required Actions for an inoperable SDC loop.

The proposed amendment would reduce the burden of scheduling surveillance tests that would result in an SDC loop being made inoperable in Mode 5, where scheduling flexibility is limited. The proposed amendment would permit the surveillance tests to be performed on the non-operating SDC loop in Mode 6 during a time when these tests are safe and when the greatest scheduling flexibility exists, while ensuring that there is reasonable time for operators to respond to and mitigate any expected failures. Therefore, for consistency with LCOs 3.4.7 and 3.4.8, and to support required outage activities by allowing SDC surveillance testing in Mode 6 and still maintain the plant in a safe condition, the licensee proposes to adopt this note.

In Mode 6, with water level less than 23 feet above the top of the reactor vessel flange, the second SDC loop (standby) is required to be operable to ensure that a backup shutdown cooling loop can be placed in operation in the event that the operating SDC loop becomes inoperable. This requirement ensures that an additional SDC pump can be quickly placed in operation, if necessary, to maintain decay heat removal and reactor coolant circulation to prevent boron stratification in the core.

The purposes of the SDC system in Mode 6 are to provide coolant flow to remove decay heat and sensible heat from the reactor coolant system (RCS) and prevent boron stratification by mixing the water in the RCS. In reviewing the proposed change to LCO 3.9.5, the NRC staff

considered the effect of permitting the second (standby) required-operable SDC loop to be declared inoperable for a period of up to two hours for surveillance testing, on the time to boil water in the core and on boron stratification of the RCS. These are addressed below:

One SDC loop is sufficient to provide the necessary decay heat removal capability and to prevent core boiling and boron stratification in the reactor core, and, if the SDC loop is providing decay heat removal, it is preventing boron stratification. The proposed amendment would only permit the standby SDC loop to be unavailable for a period up to two hours. The licensee stated that, prior to it declaring the standby SDC loop inoperable for surveillance testing using the proposed Note, it would consider such factors as the current plant status, core time to boil (with a shorter time to boil with reduced water inventory), potential RCS draining operations that may further reduce RCS water level, having the capability to inject borated water into the core (which is not by the SDC loops), and conducting surveillance tests that may render the standby SDC loop inoperable during a time when these tests are safe and possible. The licensee further stated that, in the unlikely event that the operating SDC loop would become inoperable while the backup SDC loop is undergoing surveillance testing, the TS 3.9.5 Required Actions are sufficient to ensure adequate decay heat removal, and the operator action to restore the backup SDC loop to operation would be timely such that adequate heat removal capability is restored.

The NRC staff has reviewed the proposed amendment. As described above, the licensee has stated that it would consider current plant conditions before performing surveillance tests on the standby SDC loop such that the surveillance tests are conducted safely. Also, the NRC staff agrees that the LCO 3.9.5 Required Actions, if the standby SDC becomes inoperable for any reason other than the proposed Note, are sufficient to ensure adequate decay heat removal in that these required actions would immediately initiate action to establish at least 23 feet of water above the top of the reactor vessel flange. Because the standby SDC loop would be declared inoperable only for surveillance testing for a period of only up to 2 hours, there is no reason to believe that the standby SDC loop cannot be quickly made operational and the licensee would be ready for this possibility. Based on this, the NRC staff concludes that the addition of this note maintains adequate safety for the Palo Verde units, and is, therefore, acceptable.

In addition, the associated TS Bases will be revised to ensure that consideration is given to such factors as core time to boil, potential RCS draining evolutions, and having the ability to inject borated water into the core, if needed. The Bases insert for the TSTF stated that "consideration should be given" and "consideration should include" as part of the text. During the Palo Verde internal review process required by the Palo Verde Quality Assurance Program, it was determined that this wording needed to be strengthened. Therefore, the text in the TSTF was changed to "consideration shall be given" and "consideration shall as a minimum include," respectively. The NRC staff has no disagreement with the wording change from "should" to "shall," which eliminates any ambiguity in the meaning of the TS Bases.

4.0 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.

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendments involve no significant increase in the amounts and no significant change in the types of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (66 FR 59501 dated November 28, 2001). 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) 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: Jack Donohew
Angela Chu

Date: March 1, 2002

Palo Verde Generating Station, Units 1, 2, and 3

cc:

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