June 14, 1995

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

SUBJECT: ISSUANCE OF AMENDMENTS FOR THE PALO VERDE NUCLEAR GENERATING STATION UNIT NO. 1 (TAC NO. M91145), UNIT NO. 2 (TAC NO. M91146), AND UNIT NO. 3 (TAC NO. M91147)

Dear Mr. Stewart:

The Commission has issued the enclosed Amendment No. 93 to Facility Operating License No. NPF-41, Amendment No. 81 to Facility Operating License No. NPF-51, and Amendment No. 64 to Facility Operating License No. NPF-74 for the Palo Verde Nuclear Generating Station, Unit Nos. 1, 2, and 3, respectively. The amendments consist of changes to the Technical Specifications (TS) in response to your application dated December 7, 1994.

These amendments revise the Bases of TS 3/4.7.5, "Ultimate Heat Sink" (UHS), to describe the UHS as containing a 26-day supply of cooling water, instead of a 27-day supply. In addition, the reference to Regulatory Guide 1.27 in the Bases of this TS would be revised to reference the January 1976 revision rather than the March 1974 revision.

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,

Original Signed By

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

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

Enclosures:
1. Amendment No. 93 to NPF-41
2. Amendment No. 81 to NPF-51
3. Amendment No. 64 to NPF-74
4. Safety Evaluation

cc w/encls: See next page

DISTRIBUTION

Docket File	PUBLIC
RIV, WCFO (4)	EPeyton
KPerkins, WCFO	GHill (6), T5C3
OPA, O2G5	OC/LFDCB, T9E10
EAdensam	PDIV-2/RF
TQuay	OGC, O15B18
CGrimes, O11E22	ACRS (4), T2E26
Region IV	BHolian
CThomas	CMcCracken

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PDR ADOCK 05000528
P PDR

DOCUMENT NAME: PV91145.AMD *For previous concurrences see attached ORC

OFC	PDIV-2/LA	PDIV-2/PM	PDIV-2/PM	SPLB*	OGC RMW
NAME	EPeyton	CThomas	BHolian BEH	CMcCracken	no legal objection RWeisman
DATE	5/19/95	5/25/95	5/22/95	5/12/95	5/31/95

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June 14, 1995

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

SUBJECT: ISSUANCE OF AMENDMENTS FOR THE PALO VERDE NUCLEAR GENERATING STATION UNIT NO. 1 (TAC NO. M91145), UNIT NO. 2 (TAC NO. M91146), AND UNIT NO. 3 (TAC NO. M91147)

Dear Mr. Stewart:

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These amendments revise the Bases of TS 3/4.7.5, "Ultimate Heat Sink" (UHS), to describe the UHS as containing a 26-day supply of cooling water, instead of a 27-day supply. In addition, the reference to Regulatory Guide 1.27 in the Bases of this TS would be revised to reference the January 1976 revision rather than the March 1974 revision.

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Original Signed By

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

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

Enclosures:
1. Amendment No. 93 to NPF-41
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cc w/encls: See next page

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DOCUMENT NAME: PV91145.AMD *For previous concurrences see attached ORC

OFC	PDIV-2/LA	PDIV-2/PM	PDIV-2/PM	SPLB*	OGC RMW
NAME	EPeyton	CThomas	BHolian BEH	CMcCracken	no legal objection to the comments RWeisman
DATE	5/19/95	5/[illegible]/95	5/22/95	5/12/95	5/31/95

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

June 14, 1995

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

SUBJECT: ISSUANCE OF AMENDMENTS FOR THE PALO VERDE NUCLEAR GENERATING STATION UNIT NO. 1 (TAC NO. M91145), UNIT NO. 2 (TAC NO. M91146), AND UNIT NO. 3 (TAC NO. M91147)

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These amendments revise the Bases of TS 3/4.7.5, "Ultimate Heat Sink" (UHS), to describe the UHS as containing a 26-day supply of cooling water, instead of a 27-day supply. In addition, the reference to Regulatory Guide 1.27 in the Bases of this TS would be revised to reference the January 1976 revision rather than the March 1974 revision.

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Sincerely,

B. E. Holian

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

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

Enclosures:
1. Amendment No. 93 to NPF-41
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4. Safety Evaluation

cc w/encls: See next page

cc:
Mr. Steve Olea
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Chairman, Maricopa County Board
of Supervisors
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Phoenix, Arizona 85003

Mr. Aubrey V. Godwin, Director
Arizona Radiation Regulatory Agency
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Mr. Curtis Hoskins
Executive Vice President and
Chief Operating Officer
Palo Verde Services
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Roy P. Lessey, Jr., Esq.
Akin, Gump, Strauss, Hauer and Feld
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Arizona Public Service Company
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Phoenix, Arizona 85072-2034

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

ARIZONA PUBLIC SERVICE COMPANY, ET AL.

DOCKET NO. STN 50-528

PALO VERDE NUCLEAR GENERATING STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 93
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 December 7, 1994, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, by Amendment No. 93, the license is amended to authorize revision of the associated Bases to the Technical Specifications as set forth in the application for amendment by Arizona Public Service Company dated December 7, 1994.

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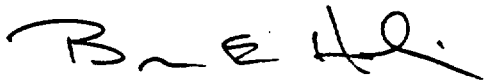
P PDR

3. This license amendment is effective as of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



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

Attachment: Bases Page

Date of Issuance: June 14, 1995

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 93 TO FACILITY OPERATING LICENSE NO. NPF-41

DOCKET NO. STN 50-528

Replace the following page of the associated Bases to the Technical Specifications with the enclosed page. The revised page is identified by Amendment number and contains marginal lines indicating the areas of change. The corresponding overleaf page is also provided to maintain document completeness.

Remove	Insert
B 3/4 7-4	B 3/4 7-4

3/4.7.1.4 ACTIVITY

The limitations on secondary system specific activity ensure that the resultant offsite radiation dose will be limited to a small fraction of 10 CFR Part 100 limits in the event of a steam line rupture. This dose also includes the effects of a coincident 1 gpm primary-to-secondary tube leak in the steam generator of the affected steam line and a concurrent loss-of-offsite electrical power. These values are consistent with the assumptions used in the safety analyses.

3/4.7.1.5 MAIN STEAM LINE ISOLATION VALVES

The OPERABILITY of the main steam line isolation valves ensures that no more than one steam generator will blow down in the event of a steam line rupture. This restriction is required to (1) minimize the positive reactivity effects of the Reactor Coolant System cooldown associated with the blowdown, and (2) limit the pressure rise within containment in the event the steam line rupture occurs within containment. The OPERABILITY of the main steam isolation valves within the closure times of the surveillance requirements are consistent with the assumptions used in the safety analyses.

3/4.7.1.6 ATMOSPHERIC DUMP VALVES

The limitation on maintaining the nitrogen accumulator at a pressure $\geq$ 400 psig is to ensure that a sufficient volume of nitrogen is in the accumulator to operate the associated ADV which holds the plant at hot standby while dissipating core decay heat or which allows a flow of sufficient steam to maintain a controlled reactor cooldown rate. A pressure of 400 psig retains sufficient nitrogen volume for 4 hours of operation at hot standby plus 6.5 hours of operation to reach cold shutdown under natural circulation conditions in the event of failure of the normal control air system.

3/4.7.2 STEAM GENERATOR PRESSURE/TEMPERATURE LIMITATION

The limitation on steam generator pressure and temperature ensures that the pressure induced stresses in the steam generators do not exceed the maximum allowable fracture toughness stress limits. The limitations to 120°F and 230 psig are based on a steam generator RT_{NDT} of 40°F and are sufficient to prevent brittle fracture.

3/4.7.3 ESSENTIAL COOLING WATER SYSTEM

The OPERABILITY of the essential cooling water system ensures that sufficient cooling capacity is available for continued operation of safety-related equipment during normal and accident conditions. The redundant cooling capacity of this system, assuming a single failure, is consistent with the assumptions used in the safety analyses.

3/4.7.4 ESSENTIAL SPRAY POND SYSTEM

The OPERABILITY of the essential spray pond system ensures that sufficient cooling capacity is available for continued operation of equipment during normal and accident conditions. The redundant cooling capacity of this system, assuming a single failure, is consistent with the assumptions used in the safety analyses.

3/4.7.5 ULTIMATE HEAT SINK

The limitations on the ultimate heat sink level and temperature ensure that sufficient cooling capacity is available to either (1) provide normal cooldown of the facility, or (2) to mitigate the effects of accident conditions within acceptable limits.

The limitations on minimum water level and maximum temperature are based on providing a 26-day cooling water supply to safety-related equipment without exceeding their design basis temperature and is consistent with the intent of the recommendations of Regulatory Guide 1.27, "Ultimate Heat Sink for Nuclear Plants," January 1976.

3/4.7.6 ESSENTIAL CHILLED WATER SYSTEM

The OPERABILITY of the essential chilled water system ensures that sufficient cooling capacity is available for continued operation of equipment and control room habitability during accident conditions. The redundant cooling capacity of this system, assuming a single failure, is consistent with the assumptions used in the safety analyses.

The Essential Chilled Water System (ECWS), in conjunction with respective emergency HVAC units, is required in accordance with Specification Definition 1.18 to provide heat removal in maintaining the various Engineered Safety Features (ESFs) room space design temperatures below the associated equipment qualification limits for the range of Design Basis Accident conditions. The 72 hour ACTION requirement for a single ECWS train out-of-service is consistent with the operability requirements of the Emergency Core Cooling System, Essential Cooling Water System, Auxiliary Feedwater System, and Containment Spray System Limiting Conditions for Operation. The normal HVAC system is used in maintaining the space design conditions of required safety systems during normal operating conditions. The normal HVAC system is also used in maintaining the space design conditions in the vital power distribution rooms during normal operating conditions. Action requirements are provided to ensure operability of the vital bus inverters and emergency battery chargers, by verifying within one hour that the normal HVAC system is providing space cooling to the vital power distribution rooms. The Action requirement is provided to establish within 8 hours operability of the safe shutdown systems which do not depend on the inoperable ECWS. The 8 hour period provides a reasonable time in which to establish operability of this complement of key safety systems. This requirement ensures that a functional train of safe shutdown equipment is available to put the plant in a safe, stable condition for the most probable abnormal operational occurences. An Action requirement of 24 hours is provided to establish operability of the remaining required safety systems which do not depend on the inoperable ECWS.

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

ARIZONA PUBLIC SERVICE COMPANY, ET AL.

DOCKET NO. STN 50-529

PALO VERDE NUCLEAR GENERATING STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 81
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 December 7, 1994, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

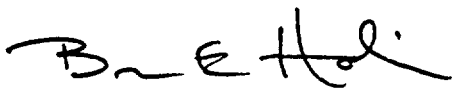
   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, by Amendment No. 81 , the license is amended to authorize revision of the associated Bases to the Technical Specifications as set forth in the application for amendment by Arizona Public Service Company dated December 7, 1994.

3. This license amendment is effective as of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



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

Attachment: Bases Page

Date of Issuance: June 14, 1995

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 81 TO FACILITY OPERATING LICENSE NO. NPF-51

DOCKET NO. STN 50-529

Replace the following page of the associated Bases of the Technical Specifications with the enclosed page. The revised page is identified by Amendment number and contains marginal lines indicating the areas of change. The corresponding overleaf page is also provided to maintain document completeness.

Remove	Insert
B 3/4 7-4	B 3/4 7-4

3/4.7.1.4 ACTIVITY

The limitations on secondary system specific activity ensure that the resultant offsite radiation dose will be limited to a small fraction of 10 CFR Part 100 limits in the event of a steam line rupture. This dose also includes the effects of a coincident 1 gpm primary-to-secondary tube leak in the steam generator of the affected steam line and a concurrent loss-of-offsite electrical power. These values are consistent with the assumptions used in the safety analyses.

3/4.7.1.5 MAIN STEAM LINE ISOLATION VALVES

The OPERABILITY of the main steam line isolation valves ensures that no more than one steam generator will blow down in the event of a steam line rupture. This restriction is required to (1) minimize the positive reactivity effects of the Reactor Coolant System cooldown associated with the blowdown, and (2) limit the pressure rise within containment in the event the steam line rupture occurs within containment. The OPERABILITY of the main steam isolation valves within the closure times of the surveillance requirements are consistent with the assumptions used in the safety analyses.

3/4.7.1.6 ATMOSPHERIC DUMP VALVES

The limitation on maintaining the nitrogen accumulator at a pressure $\geq$ 400 psig is to ensure that a sufficient volume of nitrogen is in the accumulator to operate the associated ADV which holds the plant at hot standby while dissipating core decay heat or which allows a flow of sufficient steam to maintain a controlled reactor cooldown rate. A pressure of 400 psig retains sufficient nitrogen volume for 4 hours of operation at hot standby plus 6.5 hours of operation to reach cold shutdown under natural circulation conditions in the event of failure of the normal control air system.

3/4.7.2 STEAM GENERATOR PRESSURE/TEMPERATURE LIMITATION

The limitation on steam generator pressure and temperature ensures that the pressure induced stresses in the steam generators do not exceed the maximum allowable fracture toughness stress limits. The limitations to 120°F and 230 psig are based on a steam generator RT_{NDT} of 40°F and are sufficient to prevent brittle fracture.

3/4.7.3 ESSENTIAL COOLING WATER SYSTEM

The OPERABILITY of the essential cooling water system ensures that sufficient cooling capacity is available for continued operation of safety-related equipment during normal and accident conditions. The redundant cooling capacity of this system, assuming a single failure, is consistent with the assumptions used in the safety analyses.

3/4.7.4 ESSENTIAL SPRAY POND SYSTEM

The OPERABILITY of the essential spray pond system ensures that sufficient cooling capacity is available for continued operation of equipment during normal and accident conditions. The redundant cooling capacity of this system, assuming a single failure, is consistent with the assumptions used in the safety analyses.

3/4.7.5 ULTIMATE HEAT SINK

The limitations on the ultimate heat sink level and temperature ensure that sufficient cooling capacity is available to either (1) provide normal cooldown of the facility, or (2) to mitigate the effects of accident conditions within acceptable limits.

The limitations on minimum water level and maximum temperature are based on providing a 26-day cooling water supply to safety-related equipment without exceeding their design basis temperature and is consistent with the intent of the recommendations of Regulatory Guide 1.27, "Ultimate Heat Sink for Nuclear Plants," January 1976.

3/4.7.6 ESSENTIAL CHILLED WATER SYSTEM

The OPERABILITY of the essential chilled water system ensures that sufficient cooling capacity is available for continued operation of equipment and control room habitability during accident conditions. The redundant cooling capacity of this system, assuming a single failure, is consistent with the assumptions used in the safety analyses.

The Essential Chilled Water System (ECWS), in conjunction with respective emergency HVAC units, is required in accordance with Specification Definition 1.18 to provide heat removal in maintaining the various Engineered Safety Features (ESFs) room space design temperatures below the associated equipment qualification limits for the range of Design Basis Accident conditions. The 72 hour ACTION requirement for a single ECWS train out-of-service is consistent with the operability requirements of the Emergency Core Cooling System, Essential Cooling Water System, Auxiliary Feedwater System, and Containment Spray System Limiting Conditions for Operation. The normal HVAC system is used in maintaining the space design conditions of required safety systems during normal operating conditions. The normal HVAC system is also used in maintaining the space design conditions in the vital power distribution rooms during normal operating conditions. Action requirements are provided to ensure operability of the vital bus inverters and emergency battery chargers, by verifying within one hour that the normal HVAC system is providing space cooling to the vital power distribution rooms. The Action requirement is provided to establish within 8 hours operability of the safe shutdown systems which do not depend on the inoperable ECWS. The 8 hour period provides a reasonable time in which to establish operability of this complement of key safety systems. This requirement ensures that a functional train of safe shutdown equipment is available to put the plant in a safe, stable condition for the most probable abnormal operational occurences. An Action requirement of 24 hours is provided to establish operability of the remaining required safety systems which do not depend on the inoperable ECWS.

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

ARIZONA PUBLIC SERVICE COMPANY, ET AL.

DOCKET NO. STN 50-530

PALO VERDE NUCLEAR GENERATING STATION, UNIT NO. 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 64
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 December 7, 1994, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, by Amendment No. 64 , the license is amended to authorize revision of the associated Bases to the Technical Specifications as set forth in the application for amendment by Arizona Public Service Company dated December 7, 1994.

3. This license amendment is effective as of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

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

Attachment: Bases Page

Date of Issuance: June 14, 1995

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 64 TO FACILITY OPERATING LICENSE NO. NPF-74

DOCKET NO. STN 50-530

Replace the following page of the associated Bases to the Technical Specifications with the enclosed page. The revised page is identified by Amendment number and contains marginal lines indicating the areas of change. The corresponding overleaf page is also provided to maintain document completeness.

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3/4.7.1.4 ACTIVITY

The limitations on secondary system specific activity ensure that the resultant offsite radiation dose will be limited to a small fraction of 10 CFR Part 100 limits in the event of a steam line rupture. This dose also includes the effects of a coincident 1 gpm primary-to-secondary tube leak in the steam generator of the affected steam line and a concurrent loss-of-offsite electrical power. These values are consistent with the assumptions used in the safety analyses.

3/4.7.1.5 MAIN STEAM LINE ISOLATION VALVES

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3/4.7.1.6 ATMOSPHERIC DUMP VALVES

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3/4.7.3 ESSENTIAL COOLING WATER SYSTEM

The OPERABILITY of the essential cooling water system ensures that sufficient cooling capacity is available for continued operation of safety-related equipment during normal and accident conditions. The redundant cooling capacity of this system, assuming a single failure, is consistent with the assumptions used in the safety analyses.

3/4.7.4 ESSENTIAL SPRAY POND SYSTEM

The OPERABILITY of the essential spray pond system ensures that sufficient cooling capacity is available for continued operation of equipment during normal and accident conditions. The redundant cooling capacity of this system, assuming a single failure, is consistent with the assumptions used in the safety analyses.

3/4.7.5 ULTIMATE HEAT SINK

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 93 TO FACILITY OPERATING LICENSE NO. NPF-41,

AMENDMENT NO. 81 TO FACILITY OPERATING LICENSE NO. NPF-51,

AND AMENDMENT NO. 64 TO FACILITY OPERATING LICENSE NO. NPF-74

ARIZONA PUBLIC SERVICE COMPANY, ET AL.

PALO VERDE NUCLEAR GENERATING STATION, UNIT NOS. 1, 2, AND 3

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

1.0 INTRODUCTION

By letter dated December 7, 1994, the Arizona Public Service Company (APS or the licensee) submitted a request for changes to the Technical Specifications (TS) for the Palo Verde Nuclear Generating Station, Units 1, 2, and 3 (Appendix A to Facility Operating License Nos. NPF-41, NPF-51, and NPF-74, respectively). The Arizona Public Service Company submitted this request on behalf of itself, the Salt River Project Agricultural Improvement and Power District, Southern California Edison Company, El Paso Electric Company, Public Service Company of New Mexico, Los Angeles Department of Water and Power, and Southern California Public Power Authority. The proposed amendments would revise the Bases of TS 3/4.7.5, "Ultimate Heat Sink" (UHS), to describe the UHS as containing a 26-day supply of cooling water, instead of a 27-day supply. In addition, the bases of this TS would be revised to reference the January 1976 revision of Regulatory Guide (RG) 1.27, "Ultimate Heat Sink for Nuclear Plants," rather than the March 1974 revision.

2.0 BACKGROUND

The purpose of the UHS is to ensure that sufficient cooling capacity is available to either (1) provide normal cooldown of the facility, or (2) to mitigate the effects of accident conditions within acceptable limits.

RG 1.27 states, in part, that "the capacity of the sink should be sufficient to provide cooling both for the period of time needed to evaluate the situation and for the period of time needed to take corrective action. A period of 30 days is considered to be adequate for these purposes." The RG further states that "a capacity less of than 30 days may be acceptable if it can be demonstrated that replenishment can be effected to ensure the continuous capability of the sink to perform its safety functions, taking into account the availability of replenishment equipment and limitations that may be imposed on 'freedom of movement' following an accident." The original licensing justification for a 27-day capacity, instead of a 30-day capacity as

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specified in RG 1.27, was based on the initial UHS capacity and the availability of a reliable makeup source before the water in the UHS is depleted.

In Supplement 3 to NUREG-0857, "Safety Evaluation Report for Palo Verde Nuclear Generating Station," dated September 1982, the staff concluded that the Palo Verde UHS 27-day capacity met the guidelines of RG 1.27 because the regional aquifer is a highly reliable source of water. A natural phenomenon that could render all three onsite wells inoperable is highly unlikely, and APS has demonstrated that, even if the onsite wells were inoperable, a new well could be drilled and put in operation within 15 days to ensure continuous operation of the spray ponds.

As part of the Palo Verde design-basis reconstitution program, the licensee reanalyzed the capacity of the spray ponds. The reanalysis concluded that the spray ponds have adequate capacity to provide cooling without makeup for at least 26.2 days. The original analysis performed in 1982 showed that the spray ponds could provide cooling without makeup for 27.3 days. The 27-day cooling water supply discussed in the bases for TS 3/4.7.5 was based on the 1982 analysis. The licensee stated that the more conservative assumptions of the reanalysis were based on Palo Verde operating experience. The differences in the analyses derive from the different input data for spray pond system flow, spray pond initial temperature, spray droplet size, and spent fuel pool heat loads. These data were modified to be consistent with the current Palo Verde design basis.

Therefore, the licensee proposed to revise the Bases of TS 3/4.7.5, "Ultimate Heat Sink," to describe the UHS as containing a 26-day supply of cooling water, instead of a 27-day supply.

3.0 EVALUATION

The capability of the UHS is based on the initial UHS capacity and the availability of a reliable makeup source prior to depletion of the initial UHS capacity. Therefore, although the proposed change reduces the capacity of the UHS without makeup from 27 days to 26 days, this change would not significantly decrease the margin of safety since (1) the recalculation with conservative plant-specific information only changed the previous capacity by 1 day and (2) the assumptions regarding makeup sources have not changed.

Furthermore, the licensee confirmed that the conclusions of Supplement 3 to NUREG-0857 are still valid. The regional aquifer is a highly reliable source of water; it is highly unlikely that a natural phenomenon could render all three onsite wells inoperable; and even if the onsite wells were inoperable, the licensee has demonstrated that a new well could be drilled and put in operation within 15 days to ensure the continuous operation of the spray ponds.

As stated in the licensee's emergency procedures, the decision to construct an emergency well and piping system will be made within 6 days of the emergency declaration. Thus, a makeup cooling water source will be available within 21 days, ensuring that a continuous capability of the ultimate heat sink to perform its safety function is maintained.

Based on the above evaluation, the staff concludes that the proposed change to reduce the capacity of the UHS as described in the Bases of TS 3/4.7.5, from providing a 27-day cooling water supply to providing a 26-day cooling water supply is acceptable.

With regard to the proposed change to reference the January 1976 version of RG 1.27 in the Bases of TS 3/4.7.5 (the current TS reference the March 1974 version), the staff concludes that the change is administrative in nature in that it references the revision committed to in the Update Final Safety Analysis Report when the plants were licensed. The change corrects an editorial discrepancy and is, therefore, 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. 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 (60 FR 11127). 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.

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