

October 31, 1985

Docket No.: 50-528

Mr. E. E. Van Brunt, Jr.  
Executive Vice President  
Arizona Nuclear Power Project  
Post Office Box 52034  
Phoenix, Arizona 85072-2034

Dear Mr. Van Brunt:

Subject: Issuance of Amendment No. 2 to Facility Operating License NPF-41  
for Palo Verde Unit 1

The Commission has issued the enclosed Amendment No. 2 to Facility Operating License No. NPF-41 for the Palo Verde Nuclear Generating Station, Unit 1. The amendment consists of changes to the Technical Specifications in response to your application transmitted by letter dated August 5, 1985.

The amendment revised Technical Specifications 3.4.1.2, 3.4.1.3 and 3.7.1.6, involving the reactor coolant system pumps and the atmospheric dump valves, to permit a one-time exception to these specifications for approximately 24 hours to allow the performance of the Natural Circulation Cooldown Test. The amendment also adds Technical Specification 3.10.9 which provides for compensatory measures while the test is being conducted.

A copy of the Safety Evaluation supporting the amendment is also enclosed.

Sincerely,

George W. Knighton, Chief  
Licensing Branch No. 3  
Division of Licensing

Enclosures:

1. Amendment No. 2 to NPF-41
2. Safety Evaluation

cc: See next page

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Mr. E. E. Van Brunt, Jr.  
Arizona Nuclear Power Project

Palo Verde

cc:

Arthur C. Gehr, Esq.  
Snell & Wilmer  
3100 Valley Center  
Phoenix, Arizona 85073

Kenneth Berlin, Esq.  
Winston & Strawn  
Suite 500  
2550 M Street, NW  
Washington, DC 20037

Mr. James M. Flenner, Chief Counsel  
Arizona Corporation Commission  
1200 West Washington  
Phoenix, Arizona 85007

Ms. Lynne Bernabei  
Government Accountability Project  
of the Institute for Policy Studies  
1901 Que Street, NW  
Washington, DC 20009

Charles R. Kocher, Esq. Assistant  
Council

James A. Boeletto, Esq.  
Southern California Edison Company  
P. O. Box 800  
Rosemead, California 91770

Ms. Jill Morrison  
522 E. Colgate  
Tempe, Arizona 85238

Mr. Mark Ginsberg  
Energy Director  
Office of Economic Planning  
and Development  
1700 West Washington - 5th Floor  
Phoenix, Arizona 85007

Mr. Charles B. Brinkman, Manager  
Washington Nuclear Operations  
Combustion Engineering, Inc.  
7910 Woodmont Avenue Suite 1310  
Bethesda, Maryland 20814

Mr. Wayne Shirley  
Assistant Attorney General  
Bataan Memorial Building  
Santa Fe, New Mexico 87503

Mr. Ron Rayner  
P. O. Box 1509  
Goodyear, AZ 85338

Mr. Roy Zimmerman  
U.S. Nuclear Regulatory Commission  
P. O. Box 239  
Arlington, Arizona 85322

Ms. Patricia Lee Hourihan  
6413 S. 26th Street  
Phoenix, Arizona 85040

Regional Administrator, Region V  
U. S. Nuclear Regulatory Commission  
1450 Maria Lane  
Suite 210  
Walnut Creek, California 94596

Chairman  
Arizona Corporation Commission  
2222 West Washington  
Phoenix, Arizona 85007

Arizona Radiation Regulatory Agency  
ATTN: Ms. Clara Palovic, Librarian  
925 South 52nd Street  
Tempe, Arizona 85238

Mr. Charles Tedford, Director  
Arizona Radiation Regulatory Agency  
924 South 52nd Street, Suite 2  
Tempe, Arizona 85281

Chairman  
Maricopa County Board of Supervisors  
111 South Third Avenue  
Phoenix, Arizona 85003



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

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. 2  
License No. NPF-41

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment, dated August 5, 1985, by the Arizona Public Service Company (APS) 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 (licensees), complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of 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;
  - 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 enclosure to this license amendment, and paragraph 2.C(2) of Facility Operating License No. NPF-41 is hereby amended to read as follows:

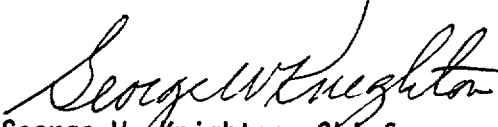
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(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 2, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in this license. APS shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

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

FOR THE NUCLEAR REGULATORY COMMISSION

  
George W. Knighton, Chief  
Licensing Branch No. 3  
Division of Licensing

Enclosure:  
Changes to the Technical  
Specifications

Date of Issuance: October 31, 1985

October 31, 1985

ENCLOSURE TO LICENSE AMENDMENT NO. 2

FACILITY OPERATING LICENSE NO. NPF-41

DOCKET NO. STN 50-528

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change. Also to be replaced are the following overleaf pages to the amended pages.

Amendment Pages

Overleaf Pages

3/4 4-2  
3/4 4-3  
3/4 7-10  
3/4 10-9

3/4 4-1  
3/4 4-4  
3/4 7-9  
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### 3/4.4 REACTOR COOLANT SYSTEM

#### 3/4.4.1 REACTOR COOLANT LOOPS AND COOLANT CIRCULATION

##### STARTUP AND POWER OPERATION

##### LIMITING CONDITION FOR OPERATION

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3.4.1.1 Both reactor coolant loops and both reactor coolant pumps in each loop shall be in operation.

APPLICABILITY: MODES 1 and 2.\*

ACTION:

With less than the above required reactor coolant pumps in operation, be in at least HOT STANDBY within 1 hour.

##### SURVEILLANCE REQUIREMENTS

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4.4.1.1 The above required reactor coolant loops shall be verified to be in operation and circulating reactor coolant at least once per 12 hours.

\*See Special Test Exception 3.10.3.

## REACTOR COOLANT SYSTEM

### HOT STANDBY

#### LIMITING CONDITION FOR OPERATION

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3.4.1.2 The reactor coolant loops listed below shall be OPERABLE and at least one of these reactor coolant loops shall be in operation.\*

- a. Reactor Coolant Loop 1 and its associated steam generator and at least one associated reactor coolant pump.
- b. Reactor Coolant Loop 2 and its associated steam generator and at least one associated reactor coolant pump.

APPLICABILITY: MODE 3.#

#### ACTION:

- a. With less than the above required reactor coolant loops OPERABLE, restore the required loops to OPERABLE status within 72 hours or be in HOT SHUTDOWN within the next 12 hours.
- b. With no reactor coolant loop in operation, suspend all operations involving a reduction in boron concentration of the Reactor Coolant System and immediately initiate corrective action to return the required reactor coolant loop to operation.

#### SURVEILLANCE REQUIREMENTS

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4.4.1.2.1 At least the above required reactor coolant pumps, if not in operation, shall be determined to be OPERABLE once per 7 days by verifying correct breaker alignments and indicated power availability.

4.4.1.2.2 At least one reactor coolant loop shall be verified to be in operation and circulating reactor coolant at least once per 12 hours.

4.4.1.2.3 The required steam generator(s) shall be determined OPERABLE verifying the secondary side water level to be  $\geq 25\%$  indicated wide range level at least once per 12 hours.

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\*All reactor coolant pumps may be deenergized for up to 1 hour provided (1) no operations are permitted that would cause dilution of the Reactor Coolant System boron concentration, and (2) core outlet temperature is maintained at least 10°F below saturation temperature.

#See Special Test Exception 3.10.9.



## REACTOR COOLANT SYSTEM

### HOT SHUTDOWN

#### LIMITING CONDITION FOR OPERATION

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3.4.1.3 At least two of the loop(s)/train(s) listed below shall be OPERABLE and at least one reactor coolant and/or shutdown cooling loops shall be in operation.\*

- a. Reactor Coolant Loop 1 and its associated steam generator and at least one associated reactor coolant pump,\*\*
- b. Reactor Coolant Loop 2 and its associated steam generator and at least one associated reactor coolant pump,\*\*
- c. Shutdown Cooling Train A,
- d. Shutdown Cooling Train B.

APPLICABILITY: MODE 4.#

#### ACTION:

- a. With less than the above required reactor coolant and/or shutdown cooling loops OPERABLE, immediately initiate corrective action to return the required loops to OPERABLE status as soon as possible; if the remaining OPERABLE loop is a shutdown cooling loop, be in COLD SHUTDOWN within 24 hours.
- b. With no reactor coolant or shutdown cooling loop in operation, suspend all operations involving a reduction in boron concentration of the Reactor Coolant System and immediately initiate corrective action to return the required coolant loop to operation.

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\*All reactor coolant pumps and shutdown cooling pumps may be deenergized for up to 1 hour provided (1) no operations are permitted that would cause dilution of the Reactor Coolant System boron concentration, and (2) core outlet temperature is maintained at least 10°F below saturation temperature.

\*\*A reactor coolant pump shall not be started with one or more of the Reactor Coolant System cold leg temperatures less than or equal to 255°F during cooldown, or 295°F during heatup, unless the secondary water temperature (saturation temperature corresponding to steam generator pressure) of each steam generator is less than 100°F above each of the Reactor Coolant System cold leg temperatures.

#See Special Test Exception 3.10.9.

## REACTOR COOLANT SYSTEM

### HOT SHUTDOWN

#### SURVEILLANCE REQUIREMENTS

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4.4.1.3.1 The required reactor coolant pump(s), if not in operation, shall be determined to be OPERABLE once per 7 days by verifying correct breaker alignments and indicated power availability.

4.4.1.3.2 The required steam generator(s) shall be determined OPERABLE by verifying the secondary side water level to be  $\geq 25\%$  indicated wide range level at least once per 12 hours.

4.4.1.3.3 At least one reactor coolant or shutdown cooling loop shall be verified to be in operation and circulating reactor coolant at a flow rate greater than or equal to 4000 gpm at least once per 12 hours.

## PLANT SYSTEMS

### MAIN STEAM LINE ISOLATION VALVES

#### LIMITING CONDITION FOR OPERATION

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3.7.1.5 Each main steam line isolation valve shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

MODE 1:

With one main steam line isolation valve inoperable but open, POWER OPERATION may continue provided the inoperable valve is restored to OPERABLE status within 4 hours; otherwise, be in at least MODE 2 within the next 6 hours.

MODES 2, 3, and 4:

With one main steam line isolation valve inoperable, subsequent operation in MODE 2, 3, or 4 may proceed provided:

- a. The isolation valve is maintained closed.
- b. The provisions of Specification 3.0.4 are not applicable.

Otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

#### SURVEILLANCE REQUIREMENTS

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4.7.1.5.1 Each main steam line isolation valve shall be demonstrated OPERABLE by verifying full closure within 4.6 seconds when tested pursuant to Specification 4.0.5.

4.7.1.5.2 The provisions of Specification 4.0.4 are not applicable for entry into MODE 3 or MODE 4 to perform the surveillance testing of Specification 4.7.1.5.1 provided the testing is performed within 12 hours after achieving normal operating steam pressure and normal operating temperature for the secondary side to perform the test.

## PLANT SYSTEMS

### ATMOSPHERE DUMP VALVES

#### LIMITING CONDITION FOR OPERATION

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3.7.1.6 The atmospheric dump valves shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.\*#

ACTION:

With less than one atmospheric dump valve per steam generator OPERABLE, restore the required atmospheric dump valve to OPERABLE status within 72 hours; or be in at least HOT STANDBY within the next 6 hours.

#### SURVEILLANCE REQUIREMENTS

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4.7.1.6 Each atmospheric dump valve shall be demonstrated OPERABLE:

- a. At least once per 24 hours by verifying that the nitrogen accumulator tank is at a pressure  $\geq$  400 PSIG.
- b. Prior to startup following any refueling shutdown or cold shutdown of 30 days or longer, verify that all valves will open and close fully.

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\*When steam generators are being used for decay heat removal.

#See Special Test Exception 3.10.9.

## SPECIAL TEST EXCEPTIONS

### 3/4.10.9 NATURAL CIRCULATION TESTING PROGRAM

#### LIMITING CONDITION FOR OPERATION

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3.10.9 The limitations of Specifications 3.4.1.2, 3.4.1.3, and 3.7.1.6 may be suspended during the performance of the Startup Natural Circulation Testing Program\* provided:

- a. Operations involving a reduction in boron concentration of the Reactor Coolant System are suspended.
- b. Core outlet temperature is maintained at least 10°F below Saturation temperature.
- c. A reactor coolant pump shall not be started with one or more of Reactor Coolant System cold leg temperatures less than or equal to 255°F during cooldown, or 295°F during heatup, unless the secondary water temperature (saturation temperature corresponding to steam generator pressure) of each steam generator is less than 100°F above each of the Reactor Coolant System cold leg temperatures.

APPLICABILITY: MODES 3 and 4 during Natural Circulation Testing.

#### ACTION:

With the Reactor Coolant System saturation margin less than 10°F, place at least one reactor coolant loop in operation, with at least one reactor coolant pump.

#### SURVEILLANCE REQUIREMENTS

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4.10.9.1 The saturation margin shall be determined to be within the above limits by continuous monitoring with the saturation margin monitors required by Table 3.3-10 or, by calculating the saturation margin at least once per 30 minutes.

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\*Startup Natural Circulation Testing Program:

Natural Circulation Cooldown Test at 80% power.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 2 TO FACILITY OPERATING LICENSE NO. NPF-41

ARIZONA PUBLIC SERVICE COMPANY, ET AL.

PALO VERDE NUCLEAR GENERATING STATION, UNIT NO. 1

DOCKET NO. STN 50-528

Introduction

By letter dated August 5, 1985, the Arizona Public Service Company (APS) 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 (licensees), requested changes to the Technical Specifications (Appendix A to Facility Operating License NPF-41) for the Palo Verde Nuclear Generating Station, Unit 1. The August 5, 1985 letter requests a one time exception to Technical Specifications 3.4.1.2, 3.4.1.3 and 3.7.1.6 for approximately 24 hours to permit the conduct of the Natural Circulation Cooldown Test during the power ascension test program.

Discussion

Palo Verde Unit 1 is currently conducting its power ascension test program. Included in the program is the Natural Circulation Cooldown Test, which will be initiated from the 80% power level.

In its August 5, 1985 letter request, APS states that during the performance of the Natural Circulation Cooldown Test, the reactor coolant pumps must be de-energized for a period of time which is longer than the one hour allowed by the Limiting Condition for Operations in Technical Specifications 3.4.1.2 and 3.4.1.3. Also, the Atmospheric Dump Valves (ADVs) will be powered from their backup power sources during the testing in order to demonstrate compliance with BTP RSB 5-1. In addition, the surveillance requirements of Technical Specification 3.7.1.6 for the nitrogen accumulator tank pressure cannot be met during the performance of the test.

In order to be able to perform the Natural Circulation Cooldown Test, APS has requested a one-time exception to Technical Specifications 3.4.1.2, 3.4.1.3 and 3.7.1.6 for approximately 24 hours, and has identified certain compensatory measures to be taken during the test in a new proposed Technical Specification 3.10.9. These measures include:

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- (1) suspending operations involving a reduction in the boron concentration of the Reactor Coolant System,
- (2) maintaining the core outlet temperature at least 10°F below the saturation temperature,
- (3) not starting a reactor coolant pump with one or more of the Reactor Coolant System cold leg temperatures less than or equal to 255°F during cooldown, or 295°F during heatup, unless the secondary water temperature (saturation temperature corresponding to steam generator pressure) of each steam generator is less than 100°F above each of the Reactor Coolant System cold leg temperatures, and
- (4) determining saturation margin by continuous monitoring or by calculations at least once every 30 minutes.

APS states that a natural circulation type of event has been previously evaluated in the accident analyses sections of the FSAR. Also, similar exceptions have been granted to other facilities (San Onofre and Diablo Canyon) for the purpose of performing a natural circulation cooldown test.

#### Evaluation

The staff has evaluated the licensees' request and concurs with APS that this one-time exception to the Technical Specifications will not create the possibility for an accident or malfunction of a different type than any evaluated previously in the FSAR since the previous analyses envelop the range of operating conditions expected during the Natural Circulation Cooldown Test. Also, during the conduct of the test, the reactor will be shutdown in either Mode 3 or Mode 4, and the reactor coolant pumps and all safety related equipment required for plant cooldown will be made available for use. In addition, the test will be closely monitored by plant operators and would be terminated in accordance with the criteria set forth in the test procedure.

The staff has also reviewed the compensatory measures to be placed into effect during the conduct of the test and finds them to be appropriate.

Therefore, the staff concludes that the one-time exception to Technical Specifications for the purpose of conducting the Natural Circulation Cooldown Test is acceptable.

#### Contact with State Official

The Arizona Radiation Regulatory Agency has been advised of the proposed determination of no significant hazards consideration with regard to this request for one-time exception to the Technical Specifications. No comments were received.

### Environmental Considerations

The staff has determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, the staff has further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR Part 51.5(d)(4), that an environmental impact statement, or a negative declaration and environmental impact appraisal, need not be prepared in connection with the issuance of this amendment.

### Conclusion

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

Dated: October 31, 1985



ISSUANCE OF AMENDMENT NO. 2 TO FACILITY OPERATING  
LICENSE NPF-41 FOR PALO VERDE UNIT 1

DISTRIBUTION

Docket File 50-528  
NRC PDR  
Local PDR  
NSIC  
PRC System  
LB#3 Reading  
JLee (20)  
MLicitra  
MLey  
Attorney, OELD  
TMNovak  
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JRutberg  
Atoalston  
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MVirgilio, TSRG  
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