

February 9, 1987

Docket No.: STN 50-528  
and STN 50-529

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. 13 to Facility Operating License No. NPF-41  
and Amendment No. 7 to Facility Operating License No. NPF-51 for  
Palo Verde, Units 1 and 2

The Commission has issued the enclosed Amendment No. 13 to Facility Operating License No. NPF-41 and Amendment No. 7 to Facility Operating License No. NPF-51 for the Palo Verde Nuclear Generating Station, Units 1 and 2. The amendments are in response to your application transmitted by letter dated November 6, 1986.

The amendments revised the Technical Specifications to change (1) the organizational structure shown on Figures 6.2-1 and 6.2-2 of the Technical Specifications and (2) the version of ANSI Standard N509 to be used for initial testing of charcoal filter units in the Essential Filtration Systems.

A copy of the Safety Evaluation supporting the amendments is enclosed.

Sincerely,

151

E. A. Licitra, Project Manager  
PWR Project Directorate No. 7  
Division of PWR Licensing-B

Enclosures:

1. Amendment No. 13 to NPF-41
2. Amendment No. 7 to NPF-51
3. Safety Evaluation

cc: See next page

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*[Signature]*  
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2/6/87

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

February 9, 1987

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Subject: Issuance of Amendment No. 13 to Facility Operating License No. NPF-41  
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The amendments revised the Technical Specifications to change (1) the organizational structure shown on Figures 6.2-1 and 6.2-2 of the Technical Specifications and (2) the version of ANSI Standard N509 to be used for initial testing of charcoal filter units in the Essential Filtration Systems.

A copy of the Safety Evaluation supporting the amendments is enclosed.

Sincerely,

A handwritten signature in cursive script that reads "E. A. Licitra".

E. A. Licitra, Project Manager  
PWR Project Directorate No. 7  
Division of PWR Licensing-B

Enclosures:

1. Amendment No. 13 to NPF-41
2. Amendment No. 7 to NPF-51
3. Safety Evaluation

cc: See next page

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

Palo Verde

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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. 13  
License No. NPF-41

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment, dated November 6, 1986, 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 regulations set forth in 10 CFR Chapter 1;
  - B. The facility will operate in conformity with the application, the provisions of Act, and the 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.

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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:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 13, 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



E. A. Licitra, Project Manager  
PWR Project Directorate No. 7  
Division of PWR Licensing-B

Enclosure:  
Changes to the Technical  
Specifications

Date of Issuance: February 9, 1987

February 9, 1987

ENCLOSURE TO LICENSE AMENDMENT NO. 13

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 areas of change. Also to be replaced are the following overleaf pages to the amended pages.

<u>Amendment Pages</u>	<u>Overleaf Pages</u>
3/4 6-38	3/4 6-37
3/4 6-39	-
3/4 7-20	3/4 7-19
3/4 9-15	3/4 9-16
B 3/4 6-4	B 3/4 6-3
B 3/4 7-5	-
B 3/4 7-6	-
B 3/4 9-3	-
6-3	-
6-4	-

## CONTAINMENT SYSTEMS

### ELECTRIC HYDROGEN RECOMBINERS

#### LIMITING CONDITION FOR OPERATION

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3.6.4.2 Two portable independent containment hydrogen recombiner systems shared among the three units shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTION:

With one hydrogen recombiner system inoperable, restore the inoperable system to OPERABLE status within 30 days or meet the requirements of Specification 3.6.4.3, or be in at least HOT STANDBY within the next 6 hours.\*

#### SURVEILLANCE REQUIREMENTS

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4.6.4.2 Each hydrogen recombiner system shall be demonstrated OPERABLE:

- a. At least once per 6 months by:
  1. Verifying through a visual examination that there is no evidence of abnormal conditions within the recombiner enclosure and control console.
  2. Operating the air blast heat exchanger fan motor and enclosed blower motor continuously for at least 30 minutes.
- b. At least once per year by:
  1. Performing a CHANNEL CALIBRATION of recombiner instrumentation.
  2. Performing a "Low-Level Test-Heater Power Off" and "Low-Level Test-Heater Power On" test and verifying that the recombiner temperature increases to and is maintained at  $600 \pm 25^{\circ}\text{F}$  for at least 1 hour. With power off and a simulated input signal of  $1280^{\circ}\text{F}$ , verify the OPERABILITY of all control circuits. When this test is conducted, the air blast heat exchanger fan motor and enclosed blower motor shall be operated continuously for at least 30 minutes.
- c. At least once per 5 years by performing a Recombiner System "High-Level Test" and verifying that the recombiner temperature increases to and is maintained at  $1200 \pm 50^{\circ}\text{F}$  for at least one hour.

\*Prior to March 30, 1986 or until the completion of the environmental qualification modifications to the hydrogen recombiner system, whichever occurs first, the provisions of Specification 3.0.4 are not applicable during implementation of the environmental qualification modifications to the hydrogen recombiner system when the containment hydrogen purge cleanup system described in Specification 3.6.4.3 is OPERABLE.

## CONTAINMENT SYSTEMS

### SURVEILLANCE REQUIREMENTS (Continued)

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3. Verifying a system flow rate of 50 scfm  $\pm$  10% during system operation when tested in accordance with ANSI N510-1980.
- c. After every 720 hours of charcoal adsorber operation by verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978,\* meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978.\*
- d. At least once per 18 months by:
  1. Verifying that the pressure drop across the combined HEPA filters, pre-filters and charcoal adsorber banks is less than 8.4 inches Water Gauge while operating the system at a flow rate of 50 scfm  $\pm$  10%.
  2. Verifying that the heaters dissipate at least 0.5 kW when tested in accordance with ANSI N510-1980.
- e. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove greater than or equal to 99% of the DOP when they are tested in-place in accordance with ANSI N510-1980 while operating the system at a flow rate of 50 scfm  $\pm$  10%.
- f. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove greater than or equal to 99.0% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1980 while operating the system at a flow rate of 50 scfm  $\pm$  10%.

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\*ANSI N509-1980 is applicable for this specification.

PLANT SYSTEMS

3/4.7.8 ESF PUMP ROOM AIR EXHAUST CLEANUP SYSTEM

LIMITING CONDITION FOR OPERATION

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3.7.8\* Two independent ESF pump room air exhaust cleanup systems shall be OPERABLE.

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

ACTION:

With one ESF pump room air exhaust cleanup system inoperable, restore the inoperable system to OPERABLE status within 7 days or 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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4.7.8 Each ESF pump room air exhaust cleanup system shall be demonstrated OPERABLE:

- a. At least once per 31 days on a STAGGERED TEST BASIS by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 15 minutes.
- b. At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system by:

\*CAUTION - Reference Specification 3.9.12 page 3/4 9-14

## REFUELING OPERATIONS

### SURVEILLANCE REQUIREMENTS (Continued)

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1. Verifying that the cleanup system satisfies the in-place testing acceptance criteria and uses the test procedures of Regulatory Positions C.5.a, C.5.c and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the system flow rate is 6000 cfm  $\pm$  10%.
  2. Verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978,\* meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978.\*
  3. Verifying a system flow rate of 6000 cfm  $\pm$  10% during system operation when tested in accordance with ANSI N510-1980.
- c. After every 720 hours of charcoal adsorber operation by verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978,\* meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978.\*
- d. At least once per 18 months by:
1. Verifying that the pressure drop across the combined HEPA filters, pre-filters, heaters, and charcoal adsorber banks is less than 8.4 inches Water Gauge while operating the system at a flow rate of 6000 cfm  $\pm$  10%.
  2. Verifying that on a high radiation test signal, the system automatically starts (unless already operating) and directs its exhaust flow through the HEPA filters and charcoal adsorber banks.
  3. Verifying that the system maintains the fuel building at a measurable negative pressure relative to the outside atmosphere during system operation.

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\*ANSI N509-1980 is applicable for this specification.

## CONTAINMENT SYSTEMS

### BASES

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#### 3/4.6.1.7 CONTAINMENT VENTILATION SYSTEM

The 42-inch containment purge supply and exhaust isolation valves are required to be closed during plant operation since these valves have not been demonstrated capable of closing during a LOCA or steam line break accident. Maintaining these valves closed during plant operations ensures that excessive quantities of radioactive materials will not be released via the containment purge system. To provide assurance that the 42-inch valves cannot be inadvertently opened, they are sealed closed in accordance with Standard Review Plan 6.2.4 which includes mechanical devices to seal or lock the valve closed, or prevent power from being supplied to the valve operator.

The use of the containment purge lines is restricted to the 8-inch purge supply and exhaust isolation valves since, unlike the 42-inch valves, the 8-inch valves will close during a LOCA or steam line break accident and therefore the site boundary dose guidelines of 10 CFR Part 100 would not be exceeded in the event of an accident during purging operations.

Leakage integrity tests with a maximum allowable leakage rate for purge supply and exhaust isolation valves will provide early indication of resilient material seal degradation and will allow the opportunity for repair before gross leakage failure develops. The 0.60 L<sub>a</sub> leakage limit shall not be exceeded when the leakage rates determined by the leakage integrity tests of these valves are added to the previously determined total for all valves and penetrations subject to Type B and C tests.

#### 3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

##### 3/4.6.2.1 CONTAINMENT SPRAY SYSTEM

The OPERABILITY of the containment spray system ensures that containment depressurization and cooling capability will be available in the event of a LOCA. The pressure reduction and resultant lower containment leakage rate are consistent with the assumptions used in the safety analyses.

The containment spray system and the containment cooling system are redundant to each other in providing post-accident cooling of the containment atmosphere. However, the containment spray system also provides a mechanism for removing iodine from the containment atmosphere and therefore the time requirements for restoring an inoperable spray system to OPERABLE status have been maintained consistent with that assigned other inoperable ESF equipment.

##### 3/4.6.2.2 IODINE REMOVAL SYSTEM

The OPERABILITY of the iodine removal system ensures that sufficient N<sub>2</sub>H<sub>4</sub> is added to the containment spray in the event of a LOCA. The limits on N<sub>2</sub>H<sub>4</sub> volume and concentration ensure adequate chemical available to remove iodine from the containment atmosphere following a LOCA.

## PLANT SYSTEMS

### BASES

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#### 3/4.7.7 CONTROL ROOM ESSENTIAL FILTRATION SYSTEM

The OPERABILITY of the control room essential filtration system ensures that the control room will remain habitable for operations personnel during and following all credible accident conditions. The OPERABILITY of this system in conjunction with control room design provisions is based on limiting the radiation exposure to personnel occupying the control room to 5 rem or less whole body, or its equivalent. This limitation is consistent with the requirements of General Design Criterion 19 of Appendix A, 10 CFR Part 50.

The use of ANSI Standard N509 (1980) in lieu of ANSI Standard N509 (1976) to meet the guidance of Regulatory Guide 1.52, Revision 2, Positions C.6.a and C.6.b, has been found acceptable as documented in Revision 2 to Section 6.5.1 of the Standard Review Plan (NUREG-0800).

#### 3/4.7.8 ESF PUMP ROOM AIR EXHAUST CLEANUP SYSTEM

The OPERABILITY of the ESF pump room air exhaust cleanup system ensures that radioactive materials leaking from the ECCS equipment within the pump room following a LOCA are filtered prior to reaching the environment. The operation of this system and the resultant effect on offsite dosage calculations was assumed in the safety analyses.

The use of ANSI Standard N509 (1980) in lieu of ANSI Standard N509 (1976) to meet the guidance of Regulatory Guide 1.52, Revision 2, Positions C.6.a and C.6.b, has been found acceptable as documented in Revision 2 to Section 6.5.1 of the Standard Review Plan (NUREG-0800).

#### 3/4.7.9 SNUBBERS

All snubbers are required OPERABLE to ensure that the structural integrity of the reactor coolant system and all other safety-related systems is maintained during and following a seismic or other event initiating dynamic loads. Snubbers excluded from this inspection program are those installed on nonsafety-related systems and then only if their failure or failure of the system on which they are installed, would have no adverse effect on any safety-related system.

Snubbers are classified and grouped by design and manufacturer but not by size. For example, mechanical snubbers utilizing the same design features of the 2-kip, 10-kip, and 100-kip capacity manufactured by Company "A" are of the same type. The same design mechanical snubbers manufactured by Company "B" for the purposes of this Technical Specification would be of a different type, as would hydraulic snubbers from either manufacturer.

A list of individual snubbers with detailed information of snubber location and size and of system affected shall be available at the plant in accordance with Section 50.71(c) of 10 CFR Part 50. The accessibility of each snubber shall be determined and approved by the Plant Review Board. The determination shall be based upon the existing radiation levels and the expected time to perform a visual inspection in each snubber location as well as other factors associated with accessibility during plant operations (e.g., temperature, atmosphere, location, etc.), and the recommendations of Regulatory Guides 8.8 and 8.10. The addition or deletion of any hydraulic or mechanical snubber shall be made in accordance with Section 50.59 of 10 CFR Part 50.

## REFUELING OPERATIONS

### BASES

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A shutdown cooling loop may be removed from operation for up to 1 hour per 8-hour period during surveillance testing of ECCS pumps. This is necessary to meet Surveillance 4.5.2, flow testing of the HPSI pumps without other pumps running, and 4.3.3.5, testing of the containment spray pumps and LPSI pumps during surveillance of the remote shutdown system.

#### 3/4.9.9 CONTAINMENT PURGE VALVE ISOLATION SYSTEM

The OPERABILITY of this system ensures that the containment purge valves will be automatically isolated upon detection of high radiation levels within the containment. The OPERABILITY of this system is required to restrict the release of radioactive material from the containment atmosphere to the environment.

#### 3/4.9.10 and 3/4.9.11 WATER LEVEL - REACTOR VESSEL and STORAGE POOL

The restrictions on minimum water level ensure that sufficient water depth (at least 23 feet above the top of the spent fuel) is available to remove a nominal 99% of the assumed 10% iodine gap activity released from the rupture of an irradiated fuel assembly for a maximum fuel rod pressurization of 1200 psig. The minimum water depth is consistent with the assumptions of the safety analysis.

#### 3/4.9.12 FUEL BUILDING ESSENTIAL VENTILATION SYSTEM

The limitations on the fuel building essential ventilation system ensure that all radioactive material released from an irradiated fuel assembly will be filtered through the HEPA filters and charcoal adsorber prior to discharge to the atmosphere. The OPERABILITY of this system and the resulting iodine removal capacity are consistent with the assumptions of the safety analyses.

The use of ANSI Standard N509 (1980) in lieu of ANSI Standard N509 (1976) to meet the guidance of Regulatory Guide 1.52, Revision 2, Positions C.6.a and C.6.b, has been found acceptable as documented in Revision 2 to Section 6.5.1 of the Standard Review Plan (NUREG-0800).

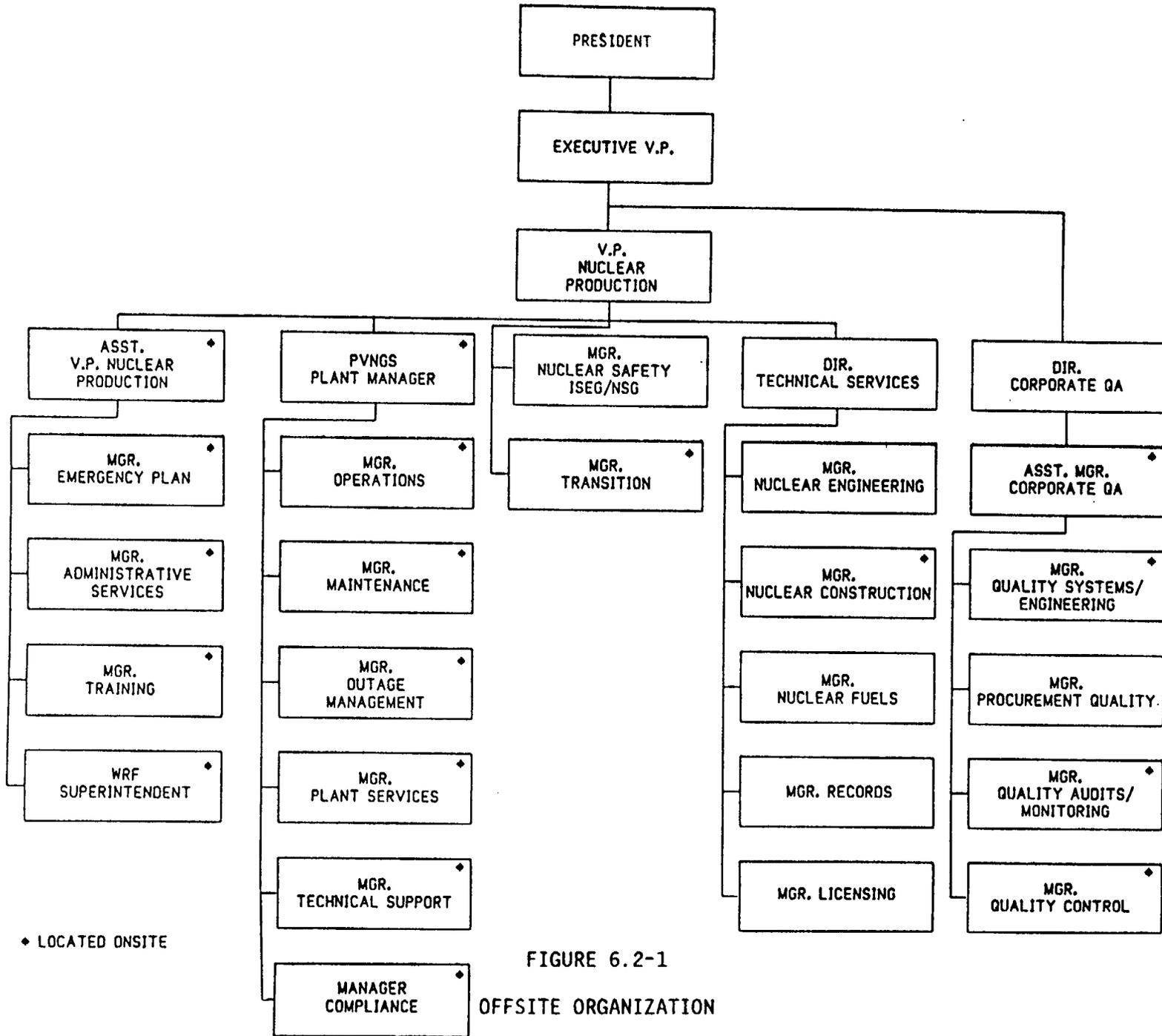


FIGURE 6.2-1  
OFFSITE ORGANIZATION



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

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. 7  
License No. NPF-51

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment, dated November 6, 1986, 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 regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of Act, and the 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-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. 7, 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



E. A. Licitra, Project Manager  
PWR Project Directorate No. 7  
Division of PWR Licensing-B

Enclosure:  
Changes to the Technical  
Specifications

Date of Issuance: February 9, 1987

February 9, 1987

ENCLOSURE TO LICENSE AMENDMENT NO. 7

FACILITY OPERATING LICENSE NO. NPF-51

DOCKET NO. STN 50-529

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 areas of change. Also to be replaced are the following overleaf pages to the amended pages.

<u>Amendment Pages</u>	<u>Overleaf Pages</u>
3/4 6-38	3/4 6-37
3/4 6-39	-
3/4 7-20	3/4 7-19
3/4 9-15	3/4 9-16
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B 3/4 7-5	-
B 3/4 7-6	-
B 3/4 9-3	-
6-3	-
6-4	-

## CONTAINMENT SYSTEMS

### ELECTRIC HYDROGEN RECOMBINERS

#### LIMITING CONDITION FOR OPERATION

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3.6.4.2 Two portable independent containment hydrogen recombining systems shared among the three units shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTION:

With one hydrogen recombining system inoperable, restore the inoperable system to OPERABLE status within 30 days or meet the requirements of Specification 3.6.4.3, or be in at least HOT STANDBY within the next 6 hours.

#### SURVEILLANCE REQUIREMENTS

---

4.6.4.2 Each hydrogen recombining system shall be demonstrated OPERABLE:

- a. At least once per 6 months by:
  1. Verifying through a visual examination that there is no evidence of abnormal conditions within the recombining enclosure and control console.
  2. Operating the air blast heat exchanger fan motor and enclosed blower motor continuously for at least 30 minutes.
- b. At least once per year by:
  1. Performing a CHANNEL CALIBRATION of recombining instrumentation.
  2. Performing a "Low-Level Test-Heater Power Off" and "Low-Level Test-Heater Power On" test and verifying that the recombining temperature increases to and is maintained at  $600 \pm 25^{\circ}\text{F}$  for at least one hour. With power off and a simulated input signal of  $1280^{\circ}\text{F}$ , verify the OPERABILITY of all control circuits. When this test is conducted, the air blast heat exchanger fan motor and enclosed blower motor shall be operated continuously for at least 30 minutes.
- c. At least once per 5 years by performing a Recombining System "High-Level Test" and verifying that the recombining temperature increases to and is maintained at  $1200 \pm 50^{\circ}\text{F}$  for at least one hour

## CONTAINMENT SYSTEMS

### SURVEILLANCE REQUIREMENTS (Continued)

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3. Verifying a system flow rate of 50 scfm  $\pm$  10% during system operation when tested in accordance with ANSI N510-1980.
- c. After every 720 hours of charcoal adsorber operation by verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978,\* meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978.\*
- d. At least once per 18 months by:
  1. Verifying that the pressure drop across the combined HEPA filters, pre-filters and charcoal adsorber banks is less than 8.4 inches Water Gauge while operating the system at a flow rate of 50 scfm  $\pm$  10%.
  2. Verifying that the heaters dissipate at least 0.5 kW when tested in accordance with ANSI N510-1980.
- e. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove greater than or equal to 99% of the DOP when they are tested in-place in accordance with ANSI N510-1980 while operating the system at a flow rate of 50 scfm  $\pm$  10%.
- f. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove greater than or equal to 99.0% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1980 while operating the system at a flow rate of 50 scfm  $\pm$  10%.

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\*ANSI N509-1980 is applicable for this specification.

## PLANT SYSTEMS

### 3/4.7.8 ESF PUMP ROOM AIR EXHAUST CLEANUP SYSTEM

#### LIMITING CONDITION FOR OPERATION

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3.7.8\* Two independent ESF pump room air exhaust cleanup systems shall be OPERABLE.

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

#### ACTION:

With one ESF pump room air exhaust cleanup system inoperable, restore the inoperable system to OPERABLE status within 7 days or 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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4.7.8 Each ESF pump room air exhaust cleanup system shall be demonstrated OPERABLE:

- a. At least once per 31 days on a STAGGERED TEST BASIS by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 15 minutes.
- b. At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system by:

\*CAUTION - Reference Specification 3.9.12 page 3/4 9-14

## REFUELING OPERATIONS

### SURVEILLANCE REQUIREMENTS (Continued)

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1. Verifying that the cleanup system satisfies the in-place testing acceptance criteria and uses the test procedures of Regulatory Positions C.5.a, C.5.c and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the system flow rate is 6000 cfm  $\pm$  10%.
  2. Verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978,\* meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978.\*
  3. Verifying a system flow rate of 6000 cfm  $\pm$  10% during system operation when tested in accordance with ANSI N510-1980.
- c. After every 720 hours of charcoal adsorber operation by verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978,\* meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978.\*
- d. At least once per 18 months by:
1. Verifying that the pressure drop across the combined HEPA filters, pre-filters, heaters, and charcoal adsorber banks is less than 8.4 inches Water Gauge while operating the system at a flow rate of 6000 cfm  $\pm$  10%.
  2. Verifying that on a high radiation test signal, the system automatically starts (unless already operating) and directs its exhaust flow through the HEPA filters and charcoal adsorber banks.
  3. Verifying that the system maintains the fuel building at a measurable negative pressure relative to the outside atmosphere during system operation.

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\*ANSI N509-1980 is applicable for this specification.

## CONTAINMENT SYSTEMS

### BASES

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#### 3/4.6.1.7 CONTAINMENT VENTILATION SYSTEM

The 42-inch containment purge supply and exhaust isolation valves are required to be closed during plant operation since these valves have not been demonstrated capable of closing during a LOCA or steam line break accident. Maintaining these valves closed during plant operations ensures that excessive quantities of radioactive materials will not be released via the containment purge system. To provide assurance that the 42-inch valves cannot be inadvertently opened, they are sealed closed in accordance with Standard Review Plan 6.2.4 which includes mechanical devices to seal or lock the valve closed, or prevent power from being supplied to the valve operator.

The use of the containment purge lines is restricted to the 8-inch purge supply and exhaust isolation valves since, unlike the 42-inch valves, the 8-inch valves will close during a LOCA or steam line break accident and therefore the site boundary dose guidelines of 10 CFR Part 100 would not be exceeded in the event of an accident during purging operations.

Leakage integrity tests with a maximum allowable leakage rate for purge supply and exhaust isolation valves will provide early indication of resilient material seal degradation and will allow the opportunity for repair before gross leakage failure develops. The 0.60 L<sub>a</sub> leakage limit shall not be exceeded when the leakage rates determined by the leakage integrity tests of these valves are added to the previously determined total for all valves and penetrations subject to Type B and C tests.

#### 3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

##### 3/4.6.2.1 CONTAINMENT SPRAY SYSTEM

The OPERABILITY of the containment spray system ensures that containment depressurization and cooling capability will be available in the event of a LOCA. The pressure reduction and resultant lower containment leakage rate are consistent with the assumptions used in the safety analyses.

The containment spray system and the containment cooling system are redundant to each other in providing post-accident cooling of the containment atmosphere. However, the containment spray system also provides a mechanism for removing iodine from the containment atmosphere and therefore the time requirements for restoring an inoperable spray system to OPERABLE status have been maintained consistent with that assigned other inoperable ESF equipment.

##### 3/4.6.2.2 IODINE REMOVAL SYSTEM

The OPERABILITY of the iodine removal system ensures that sufficient N<sub>2</sub>H<sub>4</sub> is added to the containment spray in the event of a LOCA. The limits on N<sub>2</sub>H<sub>4</sub> volume and concentration ensure adequate chemical available to remove iodine from the containment atmosphere following a LOCA.

## PLANT SYSTEMS

### BASES

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#### 3/4.7.7 CONTROL ROOM ESSENTIAL FILTRATION SYSTEM

The OPERABILITY of the control room essential filtration system ensures that the control room will remain habitable for operations personnel during and following all credible accident conditions. The OPERABILITY of this system in conjunction with control room design provisions is based on limiting the radiation exposure to personnel occupying the control room to 5 rem or less whole body, or its equivalent. This limitation is consistent with the requirements of General Design Criterion 19 of Appendix A, 10 CFR Part 50.

The use of ANSI Standard N509 (1980) in lieu of ANSI Standard N509 (1976) to meet the guidance of Regulatory Guide 1.52, Revision 2, Positions C.6.a and C.6.b, has been found acceptable as documented in Revision 2 to Section 6.5.1 of the Standard Review Plan (NUREG-0800).

#### 3/4.7.8 ESF PUMP ROOM AIR EXHAUST CLEANUP SYSTEM

The OPERABILITY of the ESF pump room air exhaust cleanup system ensures that radioactive materials leaking from the ECCS equipment within the pump room following a LOCA are filtered prior to reaching the environment. The operation of this system and the resultant effect on offsite dosage calculations was assumed in the safety analyses.

The use of ANSI Standard N509 (1980) in lieu of ANSI Standard N509 (1976) to meet the guidance of Regulatory Guide 1.52, Revision 2, Positions C.6.a and C.6.b, has been found acceptable as documented in Revision 2 to Section 6.5.1 of the Standard Review Plan (NUREG-0800).

#### 3/4.7.9 SNUBBERS

All snubbers are required OPERABLE to ensure that the structural integrity of the reactor coolant system and all other safety-related systems is maintained during and following a seismic or other event initiating dynamic loads. Snubbers excluded from this inspection program are those installed on nonsafety-related systems and then only if their failure or failure of the system on which they are installed, would have no adverse effect on any safety-related system.

Snubbers are classified and grouped by design and manufacturer but not by size. For example, mechanical snubbers utilizing the same design features of the 2-kip, 10-kip, and 100-kip capacity manufactured by Company "A" are of the same type. The same design mechanical snubbers manufactured by Company "B" for the purposes of this Technical Specification would be of a different type, as would hydraulic snubbers from either manufacturer.

A list of individual snubbers with detailed information of snubber location and size and of system affected shall be available at the plant in accordance with Section 50.71(c) of 10 CFR Part 50. The accessibility of each snubber shall be determined and approved by the Plant Review Board. The determination shall be based upon the existing radiation levels and the expected time to perform a visual inspection in each snubber location as well as other factors associated with accessibility during plant operations (e.g., temperature, atmosphere, location, etc.), and the recommendations of Regulatory Guides 8.8 and 8.10. The addition or deletion of any hydraulic or mechanical snubber shall be made in accordance with Section 50.59 of 10 CFR Part 50.

## REFUELING OPERATIONS

### BASES

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A shutdown cooling loop may be removed from operation for up to 1 hour per 8-hour period during surveillance testing of ECCS pumps. This is necessary to meet Surveillance 4.5.2, flow testing of the HPSI pumps without other pumps running, and 4.3.3.5, testing of the containment spray pumps and LPSI pumps during surveillance of the remote shutdown system.

#### 3/4.9.9 CONTAINMENT PURGE VALVE ISOLATION SYSTEM

The OPERABILITY of this system ensures that the containment purge valves will be automatically isolated upon detection of high radiation levels within the containment. The OPERABILITY of this system is required to restrict the release of radioactive material from the containment atmosphere to the environment.

#### 3/4.9.10 and 3/4.9.11 WATER LEVEL - REACTOR VESSEL and STORAGE POOL

The restrictions on minimum water level ensure that sufficient water depth (at least 23 feet above the top of the spent fuel) is available to remove a nominal 99% of the assumed 10% iodine gap activity released from the rupture of an irradiated fuel assembly for a maximum fuel rod pressurization of 1200 psig. The minimum water depth is consistent with the assumptions of the safety analysis.

#### 3/4.9.12 FUEL BUILDING ESSENTIAL VENTILATION SYSTEM

The limitations on the fuel building essential ventilation system ensure that all radioactive material released from an irradiated fuel assembly will be filtered through the HEPA filters and charcoal adsorber prior to discharge to the atmosphere. The OPERABILITY of this system and the resulting iodine removal capacity are consistent with the assumptions of the safety analyses.

The use of ANSI Standard N509 (1980) in lieu of ANSI Standard N509 (1976) to meet the guidance of Regulatory Guide 1.52, Revision 2, Positions C.6.a and C.6.b, has been found acceptable as documented in Revision 2 to Section 6.5.1 of the Standard Review Plan (NUREG-0800).

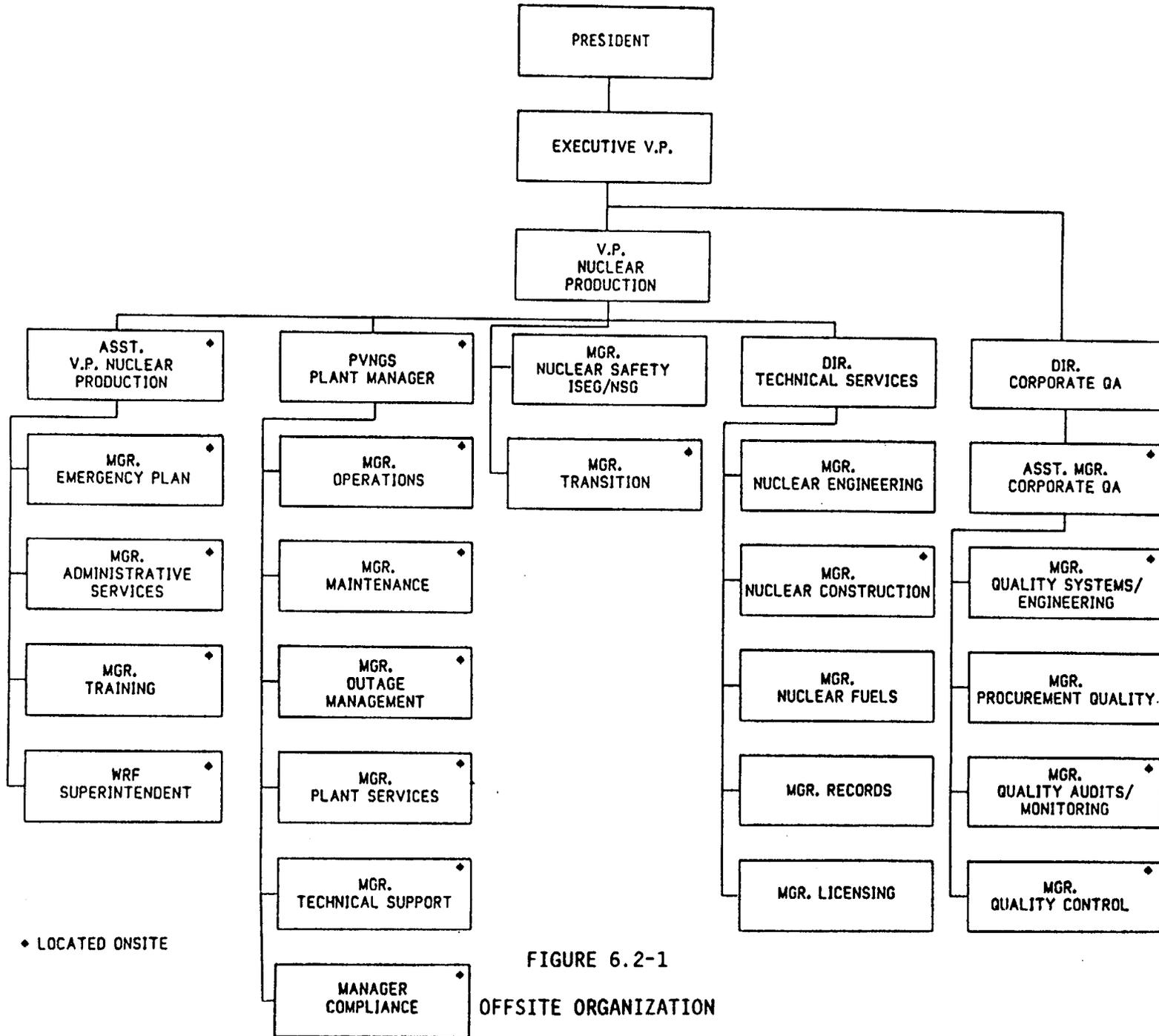


FIGURE 6.2-1  
OFFSITE ORGANIZATION

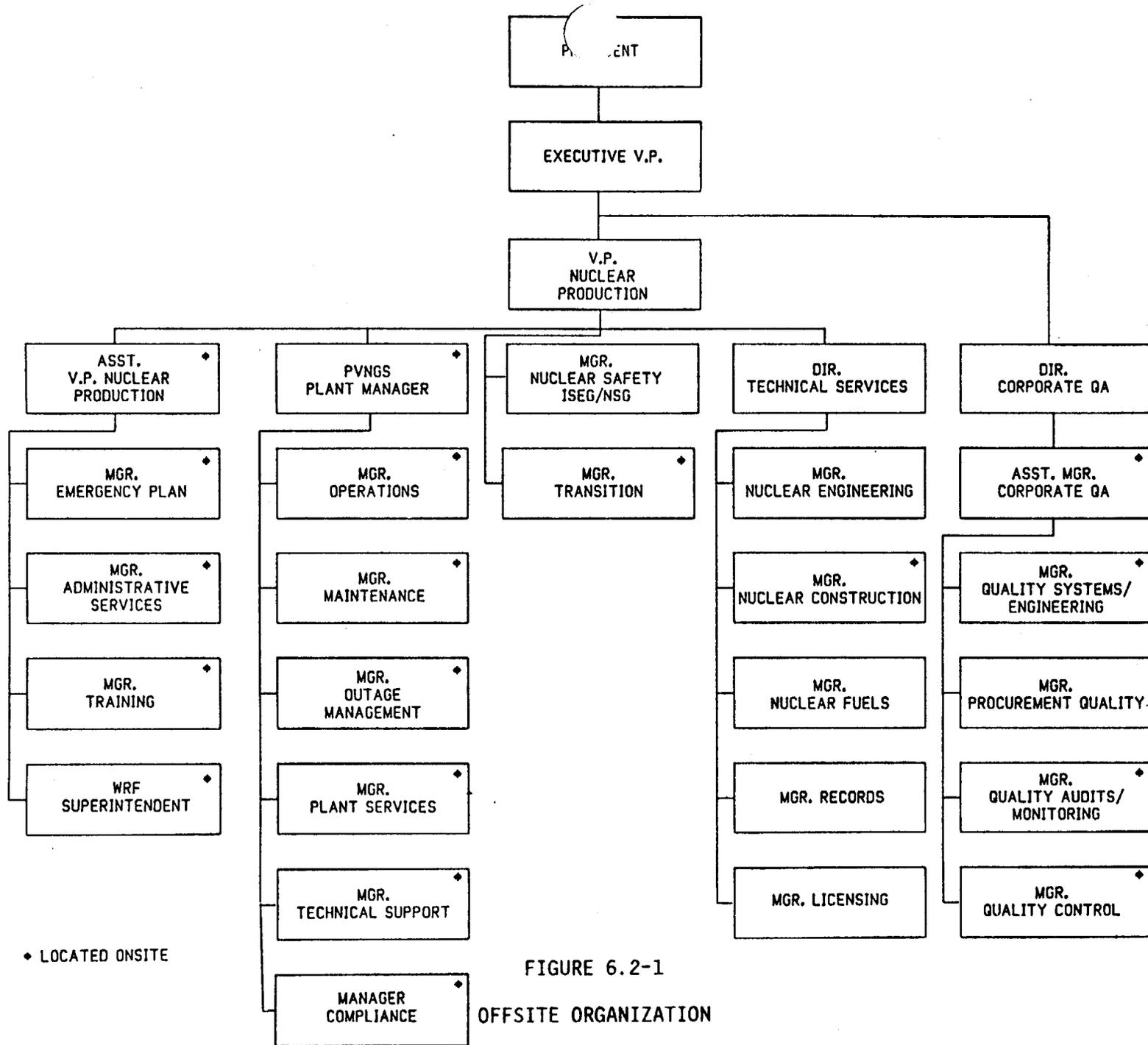


FIGURE 6.2-1  
OFFSITE ORGANIZATION

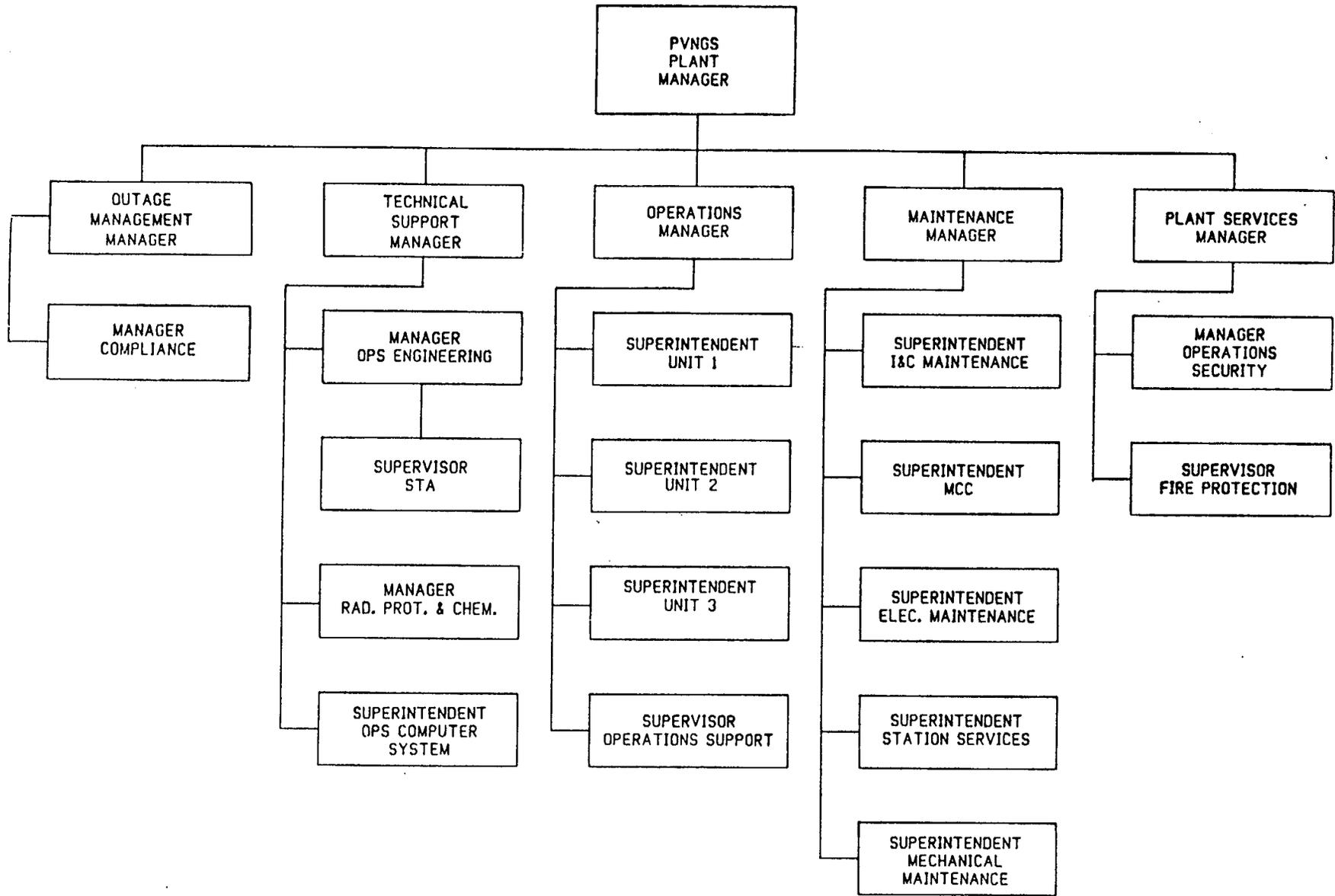


FIGURE 6.2-2  
ONSITE ORGANIZATION



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 13 TO FACILITY OPERATING LICENSE NO. NPF-41  
AND AMENDMENT NO. 7 TO FACILITY OPERATING LICENSE NO. NPF-51  
ARIZONA PUBLIC SERVICE COMPANY, ET AL.  
PALO VERDE NUCLEAR GENERATING STATION, UNIT NOS. 1 AND 2  
DOCKET NOS. STN 50-528 AND STN 50-529

1.0 INTRODUCTION

By letter dated November 6, 1986, 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 for Palo Verde Nuclear Generating Station, Units 1 and 2 (Appendix A to Facility Operating License Nos. NPF-41 and NPF-51, respectively). The application requests changes to (1) the organizational structure shown on Figures 6.2.1 and 6.2.2 of the Technical Specifications and (2) the version of ANSI Standard N509 to be used for initial testing of charcoal filter units in the Essential Filtration Systems.

2.0 DISCUSSION

Figures 6.2-1 and 6.2-2 of the Technical Specifications for Palo Verde, Units 1 and 2 provide the offsite and onsite organizational structure for the Palo Verde plant. In its application, dated November 6, 1986, APS proposed the following changes to the figures:

- (A) The Executive Vice President, who is now shown as reporting to the Chief Executive Officer, would be reporting to the President and Chief Operating Officer.
- (B) The Compliance Department, which is now shown as reporting to the Technical Support Manager, would be reporting to the Plant Manager.
- (C) Change the title of Figure 6.2-2 to read "Onsite Organization", in lieu of "Onsite Unit Organization".

APS stated that these changes were proposed to reflect that Palo Verde is shifting from its construction phase to its commercial operation phase, and to increase the effectiveness of the Compliance Department in responding to regulatory and plant issues.

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P PDR

Sections 4.6.4.3, 4.7.8 and 4.9.12 of the Technical Specifications for Palo Verde, Units 1 and 2, provide the surveillance requirements for the containment hydrogen purge cleanup system, the engineered safety features (ESF) pump room air exhaust cleanup system, and the fuel building essential ventilation system, respectively. Subsections b.2 and c for each of those sections specify that the laboratory analysis of a carbon sample of the charcoal filter units be performed in accordance with Regulatory Positions C.6.a and b of Regulatory Guide 1.52, Revision 2, March 1978 (i.e., in accordance with the 1976 version of ANSI Standard N509).

In its application, dated November 6, 1986, APS proposed that the laboratory analysis of the carbon samples be performed in accordance with the 1980 version of ANSI Standard N509. APS stated that the differences between the 1976 and 1980 versions of the Standard reflect a refinement in the test methods used for initial qualification of the charcoal filters. APS also indicated that the staff's acceptance of the 1980 version of ANSI Standard N509 for qualification testing of charcoal absorbers is documented in Sections 6.5.1 of the Standard Review Plan, Revision 2, July 1981 (NUREG-0800), and that the use of the 1980 version of the Standard was previously approved for the control room essential filtration system in Palo Verde, Units 1 and 2, in a letter dated August 11, 1986 (Amendment No. 7 to NPF-41 and Amendment No. 1 to NPF-51).

### 3.0 EVALUATION

The staff has evaluated the licensees' proposed amendment requests. Based on that evaluation, the staff finds that:

1. With the proposed changes, the offsite and onsite organizations will continue to meet the requirements of Standard Review Plan Sections 13.1.1 and 13.1.2 - 13.1.3 since the functions of the plant operating staff remain the same and the responsibilities of the Vice President for Nuclear Production also have not changed. Therefore, the staff finds the proposed organizational changes to be acceptable.
2. The use of the criteria in the 1980 version of ANSI Standard N509 for qualification testing of charcoal adsorbers in ESF Atmosphere Cleanup Systems has been found acceptable by the staff for meeting the acceptance criteria in Section 6.5.1 of the Standard Review Plan, as documented in Section 6.5.1 of the Plan. The acceptance criteria in Section 6.5.1 are based on the requirements of General Design Criteria 41, 42, 43 and 61. The staff has previously approved the use of the 1980 version of ANSI Standard N509 for the control room essential filtration system in Palo Verde, Units 1 and 2. Therefore, the staff finds that the use of the 1980 version of the Standard is acceptable for the containment hydrogen purge cleanup system, the engineered safety features (ESF) pump room air exhaust cleanup system, and the fuel building essential ventilation system.

Therefore, the staff concludes that the proposed changes to the Technical Specifications for Palo Verde, Units 1 and 2, are acceptable.

#### 4.0 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 changes to the Technical Specifications. No comments were received.

#### 5.0 ENVIRONMENTAL CONSIDERATIONS

These amendments involve changes in the installation or use of facility components located within the restricted area. The staff has determined that the amendments involve no significant increase in the amounts 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 proposed findings that the amendments involves no significant hazards consideration, and there has been no public comment on such findings. Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR Sec. 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need to be prepared in connection with the issuance of these amendments.

#### 6.0 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 these amendments will not be inimical to the common defense and security or to the health and safety of the public. We, therefore, conclude that the proposed changes are acceptable.

Principal Contributors: C. Nichols and F. Allenspach

Dated: February 9, 1987

FEB 9 1987

ISSUANCE OF AMENDMENT NO. 13 & 7 TO FACILITY OPERATING  
LICENSE NPF-41 AND NPG 51 FOR PALO VERDE UNITS 1, 2

DISTRIBUTION

Docket File 50-528/529 ✓

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