



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

ARIZONA PUBLIC SERVICE COMPANY, -ET AL.

DOCKET NOS. STN. 50-528

PALO VERDE NUCLEAR GENERATING STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 45
License No. NPF-41

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment, dated October 10, 1989 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 the 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-41 is hereby amended to read as follows:

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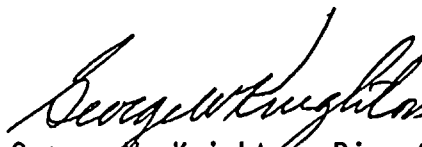
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(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 45, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated into this license. APS shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of issuance. The changes in the Technical Specifications are to become effective within 45 days of issuance of the amendment. In the period between issuance of the amendment and the effective date of the new Technical Specifications, the licensees shall adhere to the Technical Specifications existing at the time. The period of time during changeover shall be minimized.

FOR THE NUCLEAR REGULATORY COMMISSION


George W. Knighton, Director
Project Directorate V
Division of Reactor Projects III,
IV, V and Special Projects

Enclosure:
Changes to the Technical
Specifications

Date of Issuance: December 22, 1989

ENCLOSURE TO LICENSE AMENDMENT

AMENDMENT NO. 45 TO 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.

Amendment Page

3/4 3-29

3/4 3-30

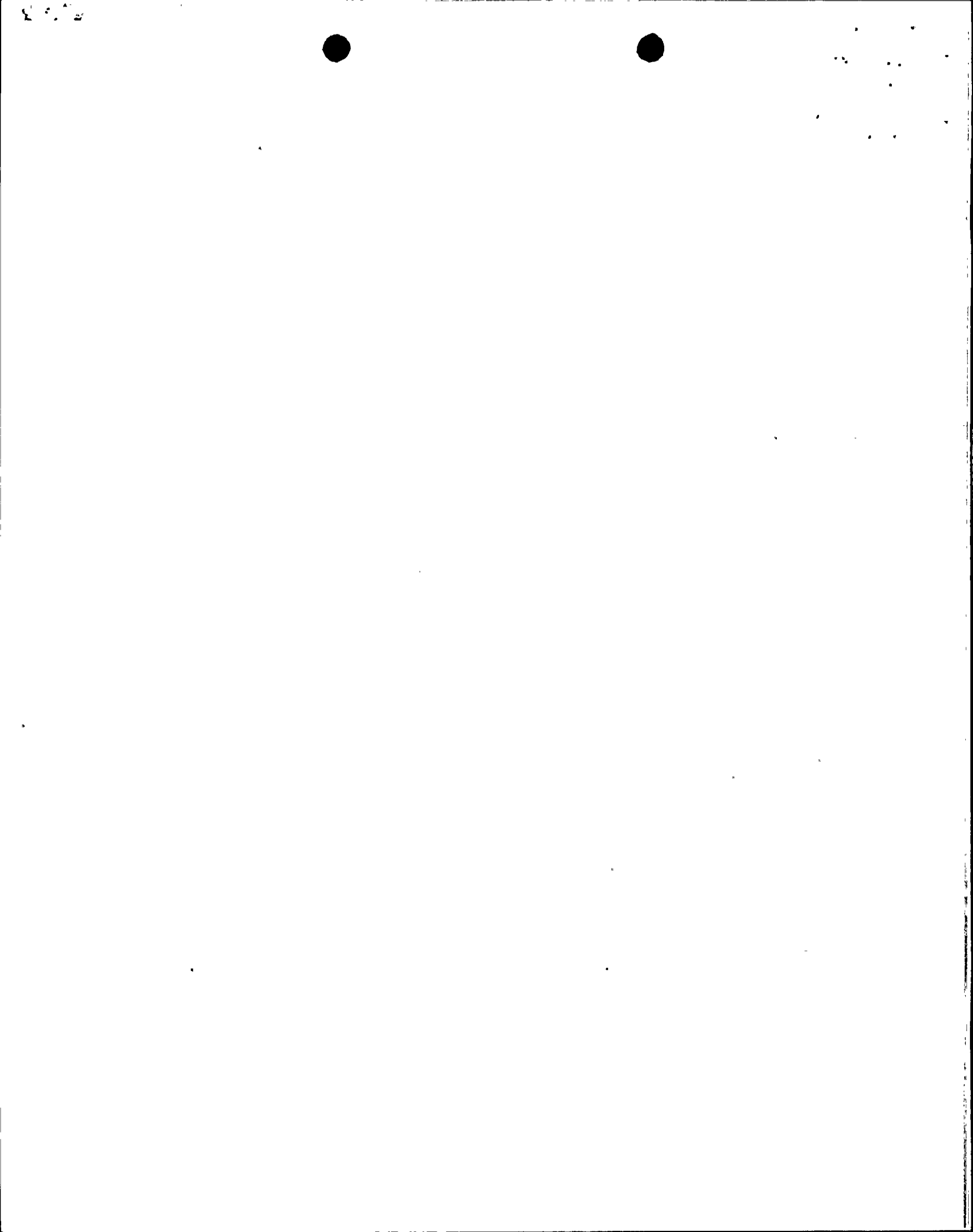


TABLE 3.3-5 (Continued)

ENGINEERED SAFETY FEATURES RESPONSE TIMES

<u>INITIATING SIGNAL AND FUNCTION</u>	<u>RESPONSE TIME IN SECONDS</u>
8. Steam Generator Level - High	
a. Main Steam Isolation	
1. MSIS actuated MSIV's	≤ 5.6*/5.6**
2. MSIS actuated MFIV's#	≤ 10.6*/10.6**
9. Steam Generator ΔP-High-Coincident With Steam Generator Level Low	
a. Auxiliary Feedwater Isolation from the Ruptured Steam Generator	≤ 16*/16**
10. Control Room Essential Filtration Actuation	≤ 180*/180**##
11. 4.16 kV Emergency Bus Undervoltage (Degraded Voltage)	
Loss of Power 90% system voltage	≤ 35.0
12. 4.16 kV Emergency Bus Undervoltage (loss of Voltage)	
Loss of Power	≤ 2.4

TABLE NOTATIONS

*Diesel generator starting and sequence loading delays included. Response time limit includes movement of valves and attainment of pump or blower discharge pressure.

**Diesel generator starting delays not included. Offsite power available. Response time limit includes movement of valves and attainment of pump or blower discharge pressure.

#MFIV valves tested at simulated operating conditions; valves tested at static flow conditions to ≤ 8.6*/8.6** seconds.

##Radiation detectors are exempt from response time testing. The response time of the radiation signal portion of the channel shall be measured from the detector output or from the input of first electronic component in channel to closure of dampers M-HJA-M01, M-HJA-M52, M-HJB-M01 and M-HJB-M55.

###The provisions of Specification 4.0.4 are not applicable for the turbine-driven Auxiliary Feedwater pump ENGINEERED SAFETY FEATURES RESPONSE TIME for entry into Mode 3.

TABLE 3.3-5 (Continued)

ENGINEERED SAFETY FEATURES RESPONSE TIMES

<u>INITIATING SIGNAL AND FUNCTION</u>	<u>RESPONSE TIME IN SECONDS</u>
2. Pressurizer Pressure - Low	
a. Safety Injection (HPSI)	≤ 30*/30**
b. Safety Injection (LPSI)	≤ 30*/30**
c. Containment Isolation	
1. CIAS actuated mini-purge valves	≤ 10.6*/10.6**
2. Other CIAS actuated valves	≤ 31*/31**
3. Containment Pressure - High	
a. Safety Injection (HPSI)	≤ 30*/30**
b. Safety Injection (LPSI)	≤ 30*/30**
c. Containment Isolation	
1. CIAS actuated mini-purge valves	≤ 10.6*/10.6**
2. Other CIAS actuated valves	≤ 31*/31**
d. Main Steam Isolation	
1. MSIS actuated MSIV's	≤ 5.6*/5.6**
2. MSIS actuated MFIV's#	≤ 10.6*/10.6**
e. Containment Spray Pump	≤ 33*/23**
4. Containment Pressure - High-High	
a. Containment Spray	≤ 33*/23**
5. Steam Generator Pressure - Low	
a. Main Steam Isolation	
1. MSIS actuated MSIV's	≤ 5.6*/5.6**
2. MSIS actuated MFIV's#	≤ 10.6*/10.6**
6. Refueling Water Tank - Low	
a. Containment Sump Recirculation	≤ 45*/45**
7. Steam Generator Level - Low	
a. Auxiliary Feedwater (Motor Drive)	≤ 46*/23**
b. Auxiliary Feedwater (Turbine Drive)###	≤ 30*/30**



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ARIZONA PUBLIC SERVICE COMPANY, ET AL.

DOCKET NOS. STN 50-529

PALO VERDE NUCLEAR GENERATING STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 31
License No. NPF-51

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment, dated October 10, 1989 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 the 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:



1. The first part of the document
 discusses the general principles
 of the system. It is divided into
 two main sections: the first
 section deals with the basic
 concepts, and the second section
 deals with the practical aspects.

The second part of the document
 describes the various components
 of the system. It includes a
 detailed description of the
 hardware and software, as well
 as the methods used for data
 collection and analysis. The
 results of the study are
 presented in a series of tables
 and graphs, which show the
 performance of the system under
 various conditions. The
 conclusions drawn from the
 study are that the system is
 capable of handling a large
 volume of data and that it
 provides accurate and reliable
 results.


The third part of the document
 discusses the future work that
 needs to be done. It includes
 a list of recommendations for
 further research and a
 summary of the findings of the
 study.

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 31; and the Environmental Protection Plan contained in Appendix B, are hereby incorporated into this license. APS shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of issuance. The changes in the Technical Specifications are to become effective within 45 days of issuance of the amendment. In the period between issuance of the amendment and the effective date of the new Technical Specifications, the licensees shall adhere to the Technical Specifications existing at the time. The period of time during changeover shall be minimized.

FOR THE NUCLEAR REGULATORY COMMISSION


George W. Knighton, Director
Project Directorate V
Division of Reactor Projects III,
IV, V and Special Projects

Enclosure:
Changes to the Technical
Specifications

Date of Issuance: December 22, 1989



ENCLOSURE TO LICENSE AMENDMENT

AMENDMENT NO. 31 TO 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.

Amendment Page

3/4 3-29

3/4 3-30

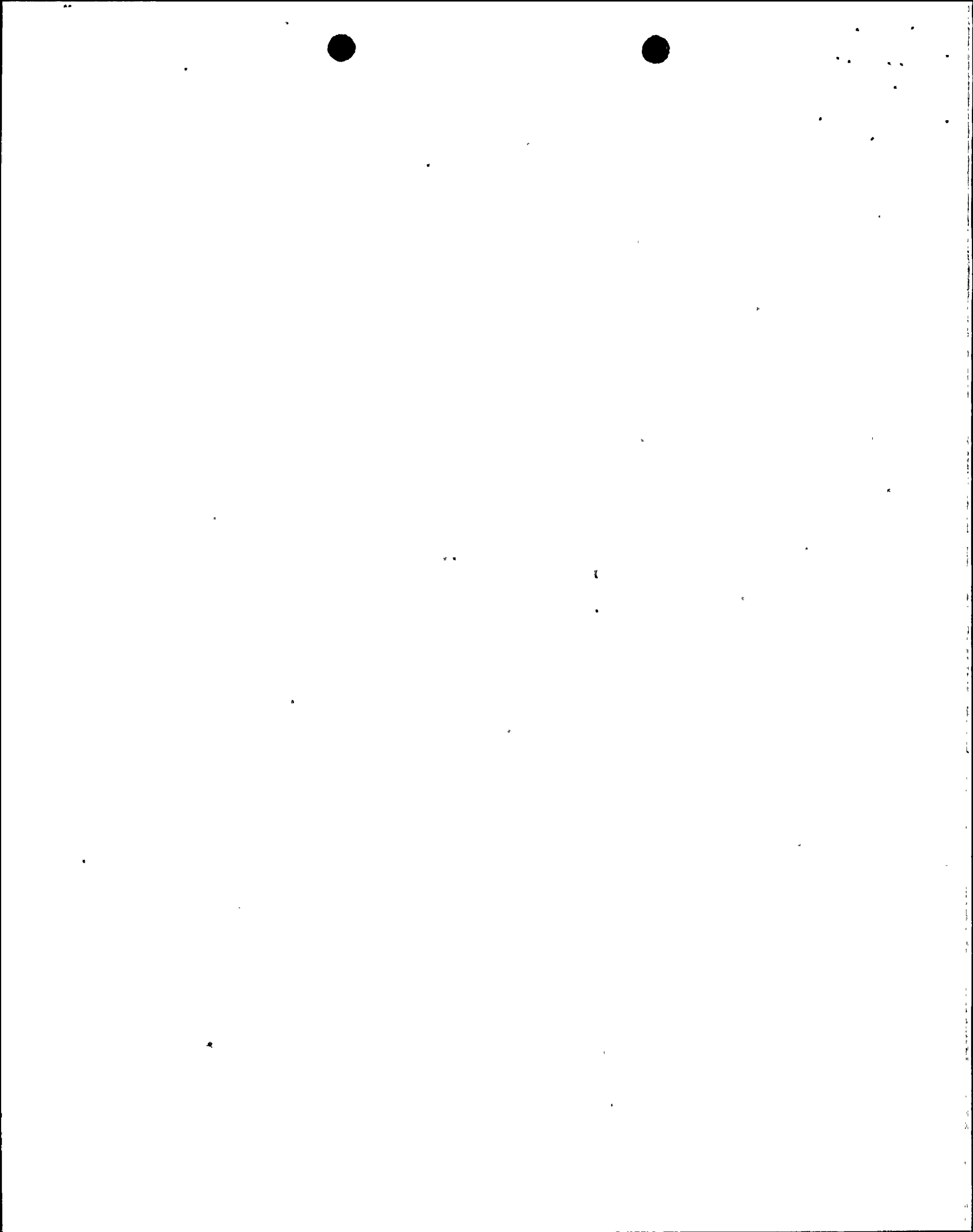


TABLE 3.3-5 (Continued)

ENGINEERED SAFETY FEATURES RESPONSE TIMES

<u>INITIATING SIGNAL AND FUNCTION</u>	<u>RESPONSE TIME IN SECONDS</u>
2. Pressurizer Pressure - Low	
a. Safety Injection (HPSI)	≤ 30*/30**
b. Safety Injection (LPSI)	≤ 30*/30**
c. Containment Isolation	
1. CIAS actuated mini-purge valves	≤ 10.6*/10.6**
2. Other CIAS actuated valves	≤ 31*/31**
3. Containment Pressure - High	
a. Safety Injection (HPSI)	≤ 30*/30**
b. Safety Injection (LPSI)	≤ 30*/30**
c. Containment Isolation	
1. CIAS actuated mini-purge valves	≤ 10.6*/10.6**
2. Other CIAS actuated valves	≤ 31*/31**
d. Main Steam Isolation	
1. MSIS actuated MSIV's	≤ 5.6*/5.6**
2. MSIS actuated MFIV's#	≤ 10.6*/10.6**
e. Containment Spray Pump	≤ 33*/23**
4. Containment Pressure - High-High	
a. Containment Spray	≤ 33*/23**
5. Steam Generator Pressure - Low	
a. Main Steam Isolation	
1. MSIS actuated MSIV's	≤ 5.6*/5.6**
2. MSIS actuated MFIV's#	≤ 10.6*/10.6**
6. Refueling Water Tank - Low	
a. Containment Sump Recirculation	≤ 45*/45**
7. Steam Generator Level - Low	
a. Auxiliary Feedwater (Motor Drive)	≤ 46*/23**
b. Auxiliary Feedwater (Turbine Drive)###	≤ 30*/30**

TABLE 3.3-5 (Continued)

ENGINEERED SAFETY FEATURES RESPONSE TIMES

<u>INITIATING SIGNAL AND FUNCTION</u>	<u>RESPONSE TIME IN SECONDS</u>
8. Steam Generator Level - High	
a. Main Steam Isolation	
1. MSIS actuated MSIV's	$\leq 5.6^*/5.6^{**}$
2. MSIS actuated MFIV's#	$\leq 10.6^*/10.6^{**}$
9. Steam Generator ΔP -High-Coincident With Steam Generator Level Low	
a. Auxiliary Feedwater Isolation from the Ruptured Steam Generator	$\leq 16^*/16^{**}$
10. Control Room Essential Filtration Actuation	$\leq 180^*/180^{**}##$
11. 4.16 kV Emergency Bus Undervoltage (Degraded Voltage)	
Loss of Power 90% system voltage	≤ 35.0
12. 4.16 kV Emergency Bus Undervoltage (loss of Voltage)	
Loss of Power	≤ 2.4

TABLE NOTATIONS

*Diesel generator starting and sequence loading delays included. Response time limit includes movement of valves and attainment of pump or blower discharge pressure.

**Diesel generator starting delays not included. Offsite power available. Response time limit includes movement of valves and attainment of pump or blower discharge pressure.

#MFIV valves tested at simulated operating conditions; valves tested at static flow conditions to $\leq 8.6^*/8.6^{**}$ seconds.

##Radiation detectors are exempt from response time testing. The response time of the radiation signal portion of the channel shall be measured from the detector output or from the input of first electronic component in channel to closure of dampers M-HJA-M01, M-HJA-M52, M-HJB-M01 and M-HJB-M55.

###The provisions of Specification 4.0.4 are not applicable for the turbine-driven Auxiliary Feedwater pump ENGINEERED SAFETY FEATURES RESPONSE TIME for entry into Mode 3.



UNITED STATES
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WASHINGTON, D. C. 20555

ARIZONA-PUBLIC-SERVICE COMPANY, ET.AL.

DOCKET-NOS..STN 50-530

PALO VERDE-NUCLEAR-GENERATING-STATION, UNIT.NO..3

AMENDMENT-TO-FACILITY-OPERATING-LICENSE

Amendment No. 20
License No. NPF-74

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment, dated October 10, 1989 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 the 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-74 is hereby amended to read as follows:



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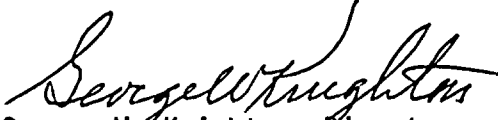
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(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 20 and the Environmental Protection Plan contained in Appendix B, are hereby incorporated into this license. APS shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of issuance. The changes in the Technical Specifications are to become effective within 45 days of issuance of the amendment. In the period between issuance of the amendment and the effective date of the new Technical Specifications, the licensees shall adhere to the Technical Specifications existing at the time. The period of time during changeover shall be minimized.

FOR THE NUCLEAR REGULATORY COMMISSION


George W. Knighton, Director
Project Directorate V
Division of Reactor Projects III,
IV, V and Special Projects

Enclosure:
Changes to the Technical
Specifications

Date of Issuance: December 22, 1989



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ENCLOSURE TO LICENSE AMENDMENT

AMENDMENT NO. 20 TO FACILITY OPERATING LICENSE NO. NPF-74

DOCKET NO. STN 50-530

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.

Amendment Page

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TABLE 3.3-5 (Continued)

ENGINEERED SAFETY FEATURES RESPONSE TIMES

<u>INITIATING SIGNAL AND FUNCTION</u>	<u>RESPONSE TIME IN SECONDS</u>
8. Steam Generator Level - High	
a. Main Steam Isolation	
1. MSIS actuated MSIV's	$\leq 5.6^*/5.6^{**}$
2. MSIS actuated MFIV's#	$\leq 10.6^*/10.6^{**}$
9. Steam Generator ΔP -High-Coincident With Steam Generator Level Low	
a. Auxiliary Feedwater Isolation from the Ruptured Steam Generator	$\leq 16^*/16^{**}$
10. Control Room Essential Filtration Actuation	$\leq 180^*/180^{**}##$
11. 4.16 kV Emergency Bus Undervoltage (Degraded Voltage)	
Loss of Power 90% system voltage	≤ 35.0
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###The provisions of Specification 4.0.4 are not applicable for the turbine-driven Auxiliary Feedwater pump ENGINEERED SAFETY FEATURES RESPONSE TIME for entry into Mode 3.

TABLE 3.3-5 (Continued)

ENGINEERED SAFETY FEATURES RESPONSE TIMES

<u>INITIATING SIGNAL AND FUNCTION</u>	<u>RESPONSE TIME IN SECONDS</u>
2. Pressurizer Pressure - Low	
a. Safety Injection (HPSI)	≤ 30*/30**
b. Safety Injection (LPSI)	≤ 30*/30**
c. Containment Isolation	
1. CIAS actuated mini-purge valves	≤ 10.6*/10.6**
2. Other CIAS actuated valves	≤ 31*/31**
3. Containment Pressure - High	
a. Safety Injection (HPSI)	≤ 30*/30**
b. Safety Injection (LPSI)	≤ 30*/30**
c. Containment Isolation	
1. CIAS actuated mini-purge valves	≤ 10.6*/10.6**
2. Other CIAS actuated valves	≤ 31*/31**
d. Main Steam Isolation	
1. MSIS actuated MSIV's	≤ 5.6*/5.6**
2. MSIS actuated MFIV's#	≤ 10.6*/10.6**
e. Containment Spray Pump	≤ 33*/23**
4. Containment Pressure - High-High	
a. Containment Spray	≤ 33*/23**
5. Steam Generator Pressure - Low	
a. Main Steam Isolation	
1. MSIS actuated MSIV's	≤ 5.6*/5.6**
2. MSIS actuated MFIV's#	≤ 10.6*/10.6**
6. Refueling Water Tank - Low	
a. Containment Sump Recirculation	≤ 45*/45**
7. Steam Generator Level - Low	
a. Auxiliary Feedwater (Motor Drive)	≤ 46*/23**
b. Auxiliary Feedwater (Turbine Drive)###	≤ 30*/30**