

September 6, 1988

Docket No.: STN 50-528, STN 50-529
and STN-50-530

Mr. Donald B. Karner
Executive Vice President
Arizona Nuclear Power Project
Post Office Box 52034
Phoenix, Arizona 85072-2034

Dear Mr. Karner

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SUBJECT: ISSUANCE OF AMENDMENT NO. 36 TO FACILITY OPERATING LICENSE
NO. NPF-41, AMENDMENT NO. 23 TO FACILITY OPERATING LICENSE
NO. NPF-51, AND AMENDMENT NO. 12 TO FACILITY OPERATING LICENSE
NO. NPF-74 FOR THE PALO VERDE NUCLEAR GENERATING STATION, UNITS
1, 2 AND 3, RESPECTIVELY (TAC NOS. 67875, 67876, AND 67877)

The Commission has issued the subject Amendments, which are enclosed, to the Facility Operating Licenses for Palo Verde Nuclear Generating Station, Units 1, 2 and 3. The Amendments consist of changes to the Technical Specifications in response to your application dated April 6, 1988.

The Amendments revise Technical Specifications 3/4.3.3.8, Radioactive Gaseous Effluent Monitoring Instrumentation, and 3/4.11.2.5, Explosive Gas Mixture, to modify the monitoring requirements for hydrogen and oxygen in the waste gas holdup system.

A copy of the related Safety Evaluation is also enclosed. A Notice of Issuance will be included in the Commission's next regular bi-weekly Federal Register notice.

Sincerely,

original signed by

M. J. Davis, Project Manager
Project Directorate V
Division of Reactor Projects - III,
IV, V and Special Projects

Enclosures:

1. Amendment No. 36 to NPF-41
2. Amendment No. 23 to NPF-51
3. Amendment No. 12 to NPF-74
4. Safety Evaluation

cc: See next page

DRSP/PDV *MD* DRSP/PDV
MJDavis:cw JLee
8/25/88 8/25/88

OGC *cpw*
8/29/88

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9/6/88

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

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and STN 50-530

Mr. Donald B. Karner
Executive Vice President
Arizona Nuclear Power Project
Post Office Box 52034
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Dear Mr. Karner:

SUBJECT: ISSUANCE OF AMENDMENT NO. 36 TO FACILITY OPERATING LICENSE
NO. NPF-41, AMENDMENT NO. 23 TO FACILITY OPERATING LICENSE
NO. NPF-51, AND AMENDMENT NO. 12 TO FACILITY OPERATING LICENSE
NO. NPF-74 FOR THE PALO VERDE NUCLEAR GENERATING STATION, UNITS
1, 2 AND 3, RESPECTIVELY (TAC NOS. 67875, 67876, AND 67877)

The Commission has issued the subject Amendments, which are enclosed, to the Facility Operating Licenses for Palo Verde Nuclear Generating Station, Units 1, 2 and 3. The Amendments consist of changes to the Technical Specifications in response to your application dated April 6, 1988.

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A copy of the related Safety Evaluation is also enclosed. A Notice of Issuance will be included in the Commission's next regular bi-weekly Federal Register notice.

Sincerely,

A handwritten signature in cursive script, appearing to read "Michael J. Davis".

M. J. Davis, Project Manager
Project Directorate V
Division of Reactor Projects - III,
IV, V and Special Projects

Enclosures:

1. Amendment No. 36 to NPF-41
2. Amendment No. 23 to NPF-51
3. Amendment No. 12 to NPF-74
4. Safety Evaluation

cc: See next page

Mr. Donald B. Karner
Arizona Nuclear Power Project
Executive Vice President
Post Office Box 52034
Phoenix, Arizona 85072-2034

Palo Verde

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Arizona Nuclear Power Project

- 2 - Palo Verde

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Mr. Charles Tedford, Director
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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. 36
License No. NPF-41

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment, dated April 6, 1988 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-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. 36, 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.

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: September 6, 1988

ENCLOSURE TO LICENSE AMENDMENT

AMENDMENT NO. 36 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. Each revised page is identified by Amendment number and contains vertical lines indicating the area of change. Also to be replaced are the following overleaf pages to the amended pages.

<u>Amendment Page</u>	<u>Overleaf Page</u>
3/4 3-64	3/4 3-63
3/4 3-69	-
3/4 3-70	-
3/4 3-71	-
3/4 3-72	-
3/4 11-14	3/4 11-13

RADIOACTIVE EFFLUENTS

GASEOUS RADWASTE TREATMENT

LIMITING CONDITION FOR OPERATION

3.11.2.4 The GASEOUS RADWASTE SYSTEM and the VENTILATION EXHAUST TREATMENT SYSTEM shall be used to reduce radioactive materials in gaseous waste prior to their discharge when the projected gaseous effluent air doses due to gaseous effluent releases, from each reactor unit, from the site (see Figures 5.1-1 and 5.1-3), when averaged over 31 days, would exceed 0.2 mrad for gamma radiation and 0.4 mrad for beta radiation. The VENTILATION EXHAUST TREATMENT SYSTEM shall be used to reduce radioactive materials in gaseous waste prior to their discharge when the projected doses due to gaseous effluent releases, from each reactor unit, to areas at and beyond the SITE BOUNDARY (see Figures 5.1-1 and 5.1-3) when averaged over 31 days would exceed 0.3 mrem to any organ of a MEMBER OF THE PUBLIC.

APPLICABILITY: At all times.

ACTION:

- a. With radioactive gaseous waste being discharged without treatment and in excess of the above limits, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which includes the following information:
 1. Identification of the inoperable equipment or subsystems and the reason for inoperability.
 2. Action(s) taken to restore the inoperable equipment to OPERABLE status, and
 3. Summary description of action(s) taken to prevent a recurrence.
- b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.4 Doses due to gaseous releases from the site shall be projected at least once per 31 days, in accordance with the methodology and parameters in the ODCM.

RADIOACTIVE EFFLUENTS

EXPLOSIVE GAS MIXTURE

LIMITING CONDITION FOR OPERATION

3.11.2.5 The concentration of oxygen in the waste gas holdup system shall be limited to less than or equal to 2% by volume.

APPLICABILITY: Whenever the waste gas holdup system is in service.

ACTION:

- a. With the concentration of oxygen in the waste gas holdup system greater than 2% by volume but less than or equal to 4% by volume, reduce the oxygen concentration to the above limit within 48 hours.
- b. With the concentration of oxygen in the waste gas holdup system greater than 4% by volume, immediately suspend all additions of waste gases to the system and reduce the concentration of oxygen to less than 4% by volume within 6 hours.
- c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.5 The concentration of oxygen in the waste gas holdup system shall be determined to be within the above limits by continuously monitoring the waste gases in the waste gas holdup system with the oxygen monitors required OPERABLE by Table 3.3-12 of Specification 3.3.3.8.

INSTRUMENTATION

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.8 The radioactive gaseous effluent monitoring instrumentation channels shown in Table 3.3-12 shall be OPERABLE with their alarm/trip setpoints set to ensure that the limits of Specification 3.11.2.1 are not exceeded. The alarm/trip setpoints of these channels shall be determined and adjusted in accordance with the methodology and parameters in the ODCM.

APPLICABILITY: As shown in Table 3.3-12.

ACTION:

- a. With a low range radioactive gaseous effluent monitoring instrumentation channel alarm/trip setpoint less conservative than required by the above Specification, immediately suspend the release of radioactive gaseous effluents monitored by the affected channel, or declare the channel inoperable, or change the setpoint so it is acceptably conservative.
- b. With less than the minimum number of radioactive gaseous effluent monitoring instrumentation channels OPERABLE, take the ACTION shown in Table 3.3-12. Restore the inoperable instrumentation to OPERABLE status within 30 days and, if unsuccessful, explain in the next Semi-annual Radioactive Effluent Release Report why this inoperability was not corrected within the time specified.
- c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.8 Each radioactive gaseous effluent monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK, SOURCE CHECK, CHANNEL CALIBRATION, and CHANNEL FUNCTIONAL TEST operations at the frequencies shown in Table 4.3-8.

TABLE 3.3-12

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>		<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABILITY</u>	<u>ACTION</u>
1.	GASEOUS RADWASTE SYSTEM			
a.	Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release #RU-12	1	#	35
b.	Flow Rate Monitor	1	#	36
2.	GASEOUS RADWASTE SYSTEM EXPLOSIVE GAS MONITORING SYSTEM			
a.	Oxygen Monitor	2	**	39

TABLE 4.3-8

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>SOURCE CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE IS REQUIRED</u>
1. GASEOUS RADWASTE SYSTEM					
a. Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release RU-12	P	P	R(3)	Q(1),(2),P###	#
b. Flow Rate Monitor	P	N.A.	R	Q,P###	#
2. GASEOUS RADWASTE SYSTEM EXPLOSIVE GAS MONITORING SYSTEM					
a. Oxygen Monitor (Surge tank)	D	N.A.	Q(4)	M	**
b. Oxygen Monitor (Waste gas header)	D	N.A.	Q(4)	M	**

TABLE 4.3-8 (Continued)

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>SOURCE CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE IS REQUIRED</u>
3. CONDENSER EVACUATION SYSTEM (RU-141 and RU-142)					
a. Noble Gas Activity Monitor	D(5)	M	R(3)	Q(2)	1, 2, 3,*** 4***
b. Iodine Sampler	N.A.	N.A.	N.A.	N.A.	1, 2, 3,*** 4***
c. Particulate Sampler	N.A.	N.A.	N.A.	N.A.	1, 2, 3,*** 4***
d. Flow Rate Monitor	D(6)	N.A.	R	Q	1, 2, 3,*** 4***
e. Sampler Flow Rate Measuring Device	D(6)	N.A.	R	Q	1, 2, 3,*** 4***
4. PLANT VENT SYSTEM (RU-143 and RU-144)					
a. Noble Gas Activity Monitor	D(5)	M	R(3)	Q(2)	*
b. Iodine Sampler	N.A.	N.A.	N.A.	N.A.	*
c. Particulate Sampler	N.A.	N.A.	N.A.	N.A.	*
d. Flow Rate Monitor	D(6)	N.A.	R	Q	*
e. Sampler Flow Rate Measuring Device	D(6)	N.A.	R	Q	*

TABLE 4.3-8 (Continued)

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>SOURCE CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE IS REQUIRED</u>
5. FUEL BUILDING VENTILATION SYSTEM (RU-145 and RU-146)					
a. Noble Gas Activity Monitor	D(5)	M	R(3)	Q(2)	##
b. Iodine Sampler	N.A.	N.A.	N.A.	N.A.	##
c. Particulate Sampler	N.A.	N.A.	N.A.	N.A.	##
d. Flow Rate Monitor	D(6)	N.A.	R	Q	##
e. Sampler Flow Rate Measuring Device	D(6)	N.A.	R	Q	##

TABLE 4.3-8 (Continued)

TABLE NOTATIONS

- * At all times.
 - ** During GASEOUS RADWASTE SYSTEM operation.
 - *** Whenever the condenser air removal system is in operation, or whenever turbine glands are being supplied with steam from sources other than the auxiliary boiler(s).
 - # During waste gas release.
 - ## During MODES 1, 2, 3 or 4 or with irradiated fuel in the fuel storage pool.
 - ### Functional test should consist of, but not be limited to, a verification of system isolation capability by the insertion of a simulated alarm condition.
-
- (1) The CHANNEL FUNCTIONAL TEST shall also demonstrate that automatic isolation of this pathway occurs if the instrument indicates measured levels above the alarm/trip setpoint.
 - (2) The CHANNEL FUNCTIONAL TEST shall also demonstrate that control room alarm annunciation occurs if any of the following conditions exists:
 - 1. Instrument indicates measured levels above the alarm setpoint.
 - 2. Circuit failure.
 - 3. Instrument indicates a downscale failure.
 - 4. Instrument controls not set in operate mode.
 - (3) The initial CHANNEL CALIBRATION shall be performed using one or more of the reference standards certified by the National Bureau of Standards (NBS) or using standards that have been obtained from suppliers that participate in measurement assurance activities with NBS. These standards shall permit calibrating the system over its intended range of energy and measurement range. For subsequent CHANNEL CALIBRATION, sources that have been related to the initial calibration shall be used.
 - (4) The CHANNEL CALIBRATION shall include the use of standard gas samples containing a nominal:
 - 1. One volume percent oxygen, balance nitrogen, and
 - 2. Four volume percent oxygen, balance nitrogen.
 - (5) The channel check for channels in standby status shall consist of verification that the channel is "on-line and reachable."
 - (6) Daily channel check not required for flow monitors in standby status.



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. 23
License No. NPF-51


1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment, dated April 6, 1988 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. 23, 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.

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: September 6, 1988

ENCLOSURE TO LICENSE AMENDMENT

AMENDMENT NO. 23 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. Each revised pages is identified by Amendment number and contains vertical lines indicating the area of change. Also to be replaced are the following overleaf pages to the amended pages.

<u>Amendment Page</u>	<u>Overleaf Page</u>
3/4 3-64	3/4 3-63
3/4 3-69	-
3/4 3-70	-
3/4 3-71	-
3/4 3-72	-
3/4 11-14	3/4 11-13

RADIOACTIVE EFFLUENTS

GASEOUS RADWASTE TREATMENT

LIMITING CONDITION FOR OPERATION

3.11.2.4 The GASEOUS RADWASTE SYSTEM and the VENTILATION EXHAUST TREATMENT SYSTEM shall be used to reduce radioactive materials in gaseous waste prior to their discharge when the projected gaseous effluent air doses due to gaseous effluent releases, from each reactor unit, from the site (see Figures 5.1-1 and 5.1-3), when averaged over 31 days, would exceed 0.2 mrad for gamma radiation and 0.4 mrad for beta radiation. The VENTILATION EXHAUST TREATMENT SYSTEM shall be used to reduce radioactive materials in gaseous waste prior to their discharge when the projected doses due to gaseous effluent releases, from each reactor unit, to areas at and beyond the SITE BOUNDARY (see Figures 5.1-1 and 5.1-3) when averaged over 31 days would exceed 0.3 mrem to any organ of a MEMBER OF THE PUBLIC.

APPLICABILITY: At all times.

ACTION:

- a. With radioactive gaseous waste being discharged without treatment and in excess of the above limits, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which includes the following information:
 1. Identification of the inoperable equipment or subsystems and the reason for inoperability,
 2. Action(s) taken to restore the inoperable equipment to OPERABLE status, and
 3. Summary description of action(s) taken to prevent a recurrence.
- b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.4 Doses due to gaseous releases from the site shall be projected at least once per 31 days, in accordance with the methodology and parameters in the ODCM.

RADIOACTIVE EFFLUENTS

EXPLOSIVE GAS MIXTURE

LIMITING CONDITION FOR OPERATION

3.11.2.5 The concentration of oxygen in the waste gas holdup system shall be limited to less than or equal to 2% by volume.

APPLICABILITY: Whenever the waste gas holdup system is in service.

ACTION:

- a. With the concentration of oxygen in the waste gas holdup system greater than 2% by volume but less than or equal to 4% by volume, reduce the oxygen concentration to the above limit within 48 hours.
- b. With the concentration of oxygen in the waste gas holdup system greater than 4% by volume, immediately suspend all additions of waste gases to the system and reduce the concentration of oxygen to less than 4% by volume within 6 hours.
- c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.5 The concentration of or oxygen in the waste gas holdup system shall be determined to be within the above limits by monitoring the waste gases in the waste gas holdup system in accordance with Specification 3.3.3.8.

INSTRUMENTATION

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.8 The radioactive gaseous effluent monitoring instrumentation channels shown in Table 3.3-12 shall be OPERABLE with their alarm/trip setpoints set to ensure that the limits of Specification 3.11.2.1 are not exceeded. The alarm/trip setpoints of these channels shall be determined and adjusted in accordance with the methodology and parameters in the ODCM.

APPLICABILITY: As shown in Table 3.3-12.

ACTION:

- a. With a low range radioactive gaseous effluent monitoring instrumentation channel alarm/trip setpoint less conservative than required by the above Specification, immediately suspend the release of radioactive gaseous effluents monitored by the affected channel, or declare the channel inoperable, or change the setpoint so it is acceptably conservative.
- b. With less than the minimum number of radioactive gaseous effluent monitoring instrumentation channels OPERABLE, take the ACTION shown in Table 3.3-12. Restore the inoperable instrumentation to OPERABLE status within 30 days and, if unsuccessful, explain in the next Semi-annual Radioactive Effluent Release Report why this inoperability was not corrected within the time specified.
- c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.8 Each radioactive gaseous effluent monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK, SOURCE CHECK, CHANNEL CALIBRATION, and CHANNEL FUNCTIONAL TEST operations at the frequencies shown in Table 4.3-8.

TABLE 3.3-12

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>		<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABILITY</u>	<u>ACTION</u>
1.	GASEOUS RADWASTE SYSTEM			
a.	Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release #RU-12	1	#	35
b.	Flow Rate Monitor	1	#	36
2.	GASEOUS RADWASTE SYSTEM EXPLOSIVE GAS MONITORING SYSTEM			
a.	Oxygen Monitor	2	**	39

TABLE 4.3-8

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>SOURCE CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE IS REQUIRED</u>
1. GASEOUS RADWASTE SYSTEM					
a. Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release RU-12	P	P	R(3)	Q(1),(2),P###	#
b. Flow Rate Monitor	P	N.A.	R	Q,P###	#
2. GASEOUS RADWASTE SYSTEM EXPLOSIVE GAS MONITORING SYSTEM					
a. Oxygen Monitor (surge tank)	D	N.A.	Q(4)	M	**
b. Oxygen Monitor (waste gas header)	D	N.A.	Q(4)	M	**

TABLE 4.3-8 (Continued)

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>SOURCE CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE IS REQUIRED</u>
3. CONDENSER EVACUATION SYSTEM (RU-141 and RU-142)					
a. Noble Gas Activity Monitor	D(5)	M	R(3)	Q(2)	1, 2, 3***, 4***
b. Iodine Sampler	N.A.	N.A.	N.A.	N.A.	1, 2, 3***, 4***
c. Particulate Sampler	N.A.	N.A.	N.A.	N.A.	1, 2, 3***, 4***
d. Flow Rate Monitor	D(6)	N.A.	R	Q	1, 2, 3***, 4***
e. Sampler Flow Rate Measuring Device	D(6)	N.A.	R	Q	1, 2, 3***, 4***
4. PLANT VENT SYSTEM (RU-143 and RU-144)					
a. Noble Gas Activity Monitor	D(5)	M	R(3)	Q(2)	*
b. Iodine Sampler	N.A.	N.A.	N.A.	N.A.	*
c. Particulate Sampler	N.A.	N.A.	N.A.	N.A.	*
d. Flow Rate Monitor	D(6)	N.A.	R	Q	*
e. Sampler Flow Rate Measuring Device	D(6)	N.A.	R	Q	*

TABLE 4.3-8 (Continued)

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>SOURCE CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE IS REQUIRED</u>
5. FUEL BUILDING VENTILATION SYSTEM (RU-145 and RU-146)					
a. Noble Gas Activity Monitor	D(5)	M	R(3)	Q(2)	##
b. Iodine Sampler	N.A.	N.A.	N.A.	N.A.	##
c. Particulate Sampler	N.A.	N.A.	N.A.	N.A.	##
d. Flow Rate Monitor	D(6)	N.A.	R	Q	##
e. Sampler Flow Rate Measuring Device	D(6)	N.A.	R	Q	##

TABLE 4.3-8 (Continued)

TABLE NOTATIONS

- * At all times.
 - ** During GASEOUS RADWASTE SYSTEM operation.
 - *** Whenever the condenser air removal system is in operation, or whenever turbine glands are being supplied with steam from sources other than the auxiliary boiler(s).
 - # During waste gas release.
 - ## During MODES 1, 2, 3 or 4 or with irradiated fuel in the fuel storage pool.
 - ### Functional test should consist of, but not be limited to, a verification of system isolation capability by the insertion of a simulated alarm condition.
- (1) The CHANNEL FUNCTIONAL TEST shall also demonstrate that automatic isolation of this pathway occurs if the instrument indicates measured levels above the alarm/trip setpoint.
 - (2) The CHANNEL FUNCTIONAL TEST shall also demonstrate that control room alarm annunciation occurs if any of the following conditions exists:
 1. Instrument indicates measured levels above the alarm setpoint.
 2. Circuit failure.
 3. Instrument indicates a downscale failure.
 4. Instrument controls not set in operate mode.
 - (3) The initial CHANNEL CALIBRATION shall be performed using one or more of the reference standards certified by the National Bureau of Standards (NBS) or using standards that have been obtained from suppliers that participate in measurement assurance activities with NBS. These standards shall permit calibrating the system over its intended range of energy and measurement range. For subsequent CHANNEL CALIBRATION, sources that have been related to the initial calibration shall be used.
 - (4) The CHANNEL CALIBRATION shall include the use of standard gas samples containing a nominal:
 1. One volume percent oxygen, balance nitrogen, and
 2. Four volume percent oxygen, balance nitrogen.
 - (5) The channel check for channels in standby status shall consist of verification that the channel is "on-line and reachable."
 - (6) Daily channel check not required for flow monitors in standby status.



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

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. 12
License No. NPF-74

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment, dated April 6, 1988 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-74 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 12, 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.

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: September 6, 1988

ENCLOSURE TO LICENSE AMENDMENT

AMENDMENT NO. 12 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. Each revised page is identified by Amendment number and contains vertical lines indicating the area of change. Also to be replaced are the following overleaf pages to the amended page.

<u>Amendment Page</u>	<u>Overleaf Page</u>
3/4 3-64	3/4 3-63
3/4 3-69	-
3/4 3-70	-
3/4 3-71	-
3/4 3-72	-
3/4 11-14	3/4 11-13

RADIOACTIVE EFFLUENTS

GASEOUS RADWASTE TREATMENT

LIMITING CONDITION FOR OPERATION

3.11.2.4 The GASEOUS RADWASTE SYSTEM and the VENTILATION EXHAUST TREATMENT SYSTEM shall be used to reduce radioactive materials in gaseous waste prior to their discharge when the projected gaseous effluent air doses due to gaseous effluent releases, from each reactor unit, from the site (see Figures 5.1-1 and 5.1-3), when averaged over 31 days, would exceed 0.2 mrad for gamma radiation and 0.4 mrad for beta radiation. The VENTILATION EXHAUST TREATMENT SYSTEM shall be used to reduce radioactive materials in gaseous waste prior to their discharge when the projected doses due to gaseous effluent releases, from each reactor unit, to areas at and beyond the SITE BOUNDARY (see Figures 5.1-1 and 5.1-3) when averaged over 31 days would exceed 0.3 mrem to any organ of a MEMBER OF THE PUBLIC.

APPLICABILITY: At all times.

ACTION:

- a. With radioactive gaseous waste being discharged without treatment and in excess of the above limits, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which includes the following information:
 1. Identification of the inoperable equipment or subsystems and the reason for inoperability,
 2. Action(s) taken to restore the inoperable equipment to OPERABLE status, and
 3. Summary description of action(s) taken to prevent a recurrence.
- b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.4 Doses due to gaseous releases from the site shall be projected at least once per 31 days, in accordance with the methodology and parameters in the ODCM.

RADIOACTIVE EFFLUENTS

EXPLOSIVE GAS MIXTURE

LIMITING CONDITION FOR OPERATION

3.11.2.5 The concentration of oxygen in the waste gas holdup system shall be limited to less than or equal to 2% by volume.

APPLICABILITY: Whenever the waste gas holdup system is in service.

ACTION:

- a. With the concentration of oxygen in the waste gas holdup system greater than 2% by volume but less than or equal to 4% by volume, reduce the oxygen concentration to the above limit within 48 hours.
- b. With the concentration of oxygen in the waste gas holdup system greater than 4% by volume, immediately suspend all additions of waste gases to the system and reduce the concentration of oxygen to less than 4% by volume within 6 hours.
- c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.5 The concentration of oxygen in the waste gas holdup system shall be determined to be within the above limits by monitoring the waste gases in the waste gas holdup system in accordance with Specification 3.3.3.8.

INSTRUMENTATION

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.8 The radioactive gaseous effluent monitoring instrumentation channels shown in Table 3.3-12 shall be OPERABLE with their alarm/trip setpoints set to ensure that the limits of Specification 3.11.2.1 are not exceeded. The alarm/trip setpoints of these channels shall be determined and adjusted in accordance with the methodology and parameters in the ODCM.

APPLICABILITY: As shown in Table 3.3-12.

ACTION:

- a. With a low range radioactive gaseous effluent monitoring instrumentation channel alarm/trip setpoint less conservative than required by the above Specification, immediately suspend the release of radioactive gaseous effluents monitored by the affected channel, or declare the channel inoperable, or change the setpoint so it is acceptably conservative.
- b. With less than the minimum number of radioactive gaseous effluent monitoring instrumentation channels OPERABLE, take the ACTION shown in Table 3.3-12. Restore the inoperable instrumentation to OPERABLE status within 30 days and, if unsuccessful, explain in the next Semi-annual Radioactive Effluent Release Report why this inoperability was not corrected within the time specified.
- c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.8 Each radioactive gaseous effluent monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK, SOURCE CHECK, CHANNEL CALIBRATION, and CHANNEL FUNCTIONAL TEST operations at the frequencies shown in Table 4.3-8.

TABLE 3.3-12

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>		<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABILITY</u>	<u>ACTION</u>
1.	GASEOUS RADWASTE SYSTEM			
a.	Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release #RU-12	1	#	35
b.	Flow Rate Monitor	1	#	36
2.	GASEOUS RADWASTE SYSTEM EXPLOSIVE GAS MONITORING SYSTEM			
a.	Oxygen Monitor	2	**	39

TABLE 4.3-8

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>SOURCE CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE IS REQUIRED</u>
1. GASEOUS RADWASTE SYSTEM					
a. Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release RU-12	P	P	R(3)	Q(1),(2),P###	#
b. Flow Rate Monitor	P	N.A.	R	Q,P###	#
2. GASEOUS RADWASTE SYSTEM EXPLOSIVE GAS MONITORING SYSTEM					
a. Oxygen Monitor (Surge Tank)	D	N.A.	Q(4)	M	**
b. Oxygen Monitor (Waste Gas Header)	D	N.A.	Q(4)	M	**

TABLE 4.3-8 (Continued)

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>SOURCE CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE IS REQUIRED</u>
3. CONDENSER EVACUATION SYSTEM (RU-141 and RU-142)					
a. Noble Gas Activity Monitor	D(5)	M	R(3)	Q(2)	1, 2, 3***, 4***
b. Iodine Sampler	N.A.	N.A.	N.A.	N.A.	1, 2, 3***, 4***
c. Particulate Sampler	N.A.	N.A.	N.A.	N.A.	1, 2, 3***, 4***
d. Flow Rate Monitor	D(6)	N.A.	R	Q	1, 2, 3***, 4***
e. Sampler Flow Rate Measuring Device	D(6)	N.A.	R	Q	1, 2, 3***, 4***
4. PLANT VENT SYSTEM (RU-143 and RU-144)					
a. Noble Gas Activity Monitor	D(5)	M	R(3)	Q(2)	*
b. Iodine Sampler	N.A.	N.A.	N.A.	N.A.	*
c. Particulate Sampler	N.A.	N.A.	N.A.	N.A.	*
d. Flow Rate Monitor	D(6)	N.A.	R	Q	*
e. Sampler Flow Rate Measuring Device	D(6)	N.A.	R	Q	*

TABLE 4.3-8 (Continued)

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>SOURCE CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE IS REQUIRED</u>
5. FUEL BUILDING VENTILATION SYSTEM (RU-145 and RU-146)					
a. Noble Gas Activity Monitor	D(5)	M	R(3)	Q(2)	##
b. Iodine Sampler	N.A.	N.A.	N.A.	N.A.	##
c. Particulate Sampler	N.A.	N.A.	N.A.	N.A.	##
d. Flow Rate Monitor	D(6)	N.A.	R	Q	##
e. Sampler Flow Rate Measuring Device	D(6)	N.A.	R	Q	##

TABLE 4.3-8 (Continued)

TABLE NOTATIONS

- * At all times.
- ** During GASEOUS RADWASTE SYSTEM operation.
- *** Whenever the condenser air removal system is in operation, or whenever turbine glands are being supplied with steam from sources other than the auxiliary boiler(s).
- # During waste gas release.
- ## During MODES 1, 2, 3 or 4 or with irradiated fuel in the fuel storage pool.
- ### Functional test should consist of, but not be limited to, a verification of system isolation capability by the insertion of a simulated alarm condition.
- (1) The CHANNEL FUNCTIONAL TEST shall also demonstrate that automatic isolation of this pathway occurs if the instrument indicates measured levels above the alarm/trip setpoint.
- (2) The CHANNEL FUNCTIONAL TEST shall also demonstrate that control room alarm annunciation occurs if any of the following conditions exists:
 - 1. Instrument indicates measured levels above the alarm setpoint.
 - 2. Circuit failure.
 - 3. Instrument indicates a downscale failure.
 - 4. Instrument controls not set in operate mode.
- (3) The initial CHANNEL CALIBRATION shall be performed using one or more of the reference standards certified by the National Bureau of Standards (NBS) or using standards that have been obtained from suppliers that participate in measurement assurance activities with NBS. These standards shall permit calibrating the system over its intended range of energy and measurement range. For subsequent CHANNEL CALIBRATION, sources that have been related to the initial calibration shall be used.
- (4) The CHANNEL CALIBRATION shall include the use of standard gas samples containing a nominal:
 - 1. One volume percent oxygen, balance nitrogen, and
 - 2. Four volume percent oxygen, balance nitrogen.
- (5) The channel check for channels in standby status shall consist of verification that the channel is "on-line and reachable."
- (6) Daily channel check not required for flow monitors in standby status.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 36 TO FACILITY OPERATING LICENSE NO. NPF-41,
AMENDMENT NO. 23 TO FACILITY OPERATING LICENSE NO. NPF-51
AND AMENDMENT NO. 12 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 April 6, 1988, 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 a change to the Technical Specifications 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). Modifications are proposed for TS 3/4.3.3.8, Radioactive Gaseous Effluent Monitoring Instrumentation and TS 3/4.11.2.5, Explosive Gas Mixture, to modify the monitoring requirements for hydrogen and oxygen in the waste gas holdup system.

2.0 EVALUATION

TS 3/4.11.2.5 is provided to ensure that the concentration of potentially explosive gas mixtures contained in the waste gas holdup system is maintained below the flammability limits of hydrogen and oxygen. This TS applies at all times and provides limits for the concentration of oxygen in the waste system whenever the hydrogen concentration exceeds 4.0 v/o, and also provides surveillance requirements for determining the hydrogen and oxygen concentrations. The proposed change will assume that the hydrogen concentration is always greater than 4.0 v/o, and will delete requirements to analyze the waste gas holdup system for hydrogen. In the proposal, the TS would be amended so that it would apply only when the waste gas holdup system is in service.

The radioactive gaseous effluent instrumentation required operable by TS 3/4.3.3.8 is provided to monitor and control, as applicable, the releases of radioactive materials in gaseous effluents during actual or potential releases of gaseous effluents. The instrumentation also includes provisions for monitoring (and controlling) the concentrations of potentially explosive gas mixtures in the gaseous radwaste system. Since, with these proposed changes, there is no need to monitor the hydrogen concentrations in the waste gas holdup system, these monitors can be removed from the TS.

There is a provision for sequentially analyzing (monitoring) the Chemical and Volume Control System (CVCS) tanks and the Waste Gas Decay Tank (WGDT) for oxygen. The licensee stated that the sequential oxygen monitoring system has never functioned as intended; and that, by amending the TS to require continuous monitoring of the header to the surge tank with dual monitors, the intent to monitor each of the CVCS tanks and the WGDT is satisfied. Therefore, the requirement to sequentially analyze the tanks can be deleted.

The licensee has stated that the design basis accident with respect to the gaseous radwaste system is a rupture of a WGDT. It is assumed that the cause is either an explosion or an operator error. The probability of an explosion occurring does not increase since the source of the gases (Surge Tank) pumped to the WGDT is still being monitored with dual analyzers for an explosive mixture. It will be assumed that the Surge Tank contains greater than 4.0 v/o hydrogen and the applicable action statements will be implemented based upon the sensed oxygen concentration as measured by the oxygen analyzers. Deleting the requirement of sampling the WGDT does not increase the probability of the accident occurring. The probability of an event initiated by operator error does not change since the proposed change does not affect operator actions. The Holdup Tank (HUT) will no longer be monitored periodically by the sampling system. By considering the volumes of unstripped water necessary to bring the HUT atmosphere to an explosive mixture, it's unlikely that the explosive limit would ever be reached.

In all cases, the rupture of the HUT is bounded by a rupture of the Refueling Water Tank (RWT), which is the limiting accident in the accident analyses per Section 15.7.2 of the FSAR. The probability of RWT rupture is not affected by this proposed change. Furthermore, the consequences of a WGDT rupture will not change since the proposed change does not affect the concentrations of radionuclides assumed present in the accident analysis.

The FSAR Chapter 15 analysis assumes the initiating event of a WGDT rupture is an explosion or operator error. A dispersal to the environment of a freshly filled WGDT or Surge Tank is the accident of interest. This accident has already been analyzed and is bounded by the Chapter 15 analysis of a WGDT rupture.

The proposed change also increases the margin of safety as defined in the basis of the Technical Specifications since it will be assumed that the waste gas holdup system always has a hydrogen concentration greater than 4.0 v/o when in service. The applicable action statement will be complied with whenever measured oxygen concentration exceeds 2.0 v/o or 4.0 v/o, respectively.

The proposed change is consistent with the guidelines of NUREG-0472, "Standard Radiological Technical Specifications for PWRs", February, 1980.

Based on its evaluation, the staff finds that the proposed amendments to the PVNGS Units 1, 2 and 3 TS are consistent with NUREG-0472 and are, therefore, acceptable.

3.0 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 change. No comments were received.

4.0 ENVIRONMENTAL CONSIDERATIONS

The amendments involve changes in the use of a facility component located within the restricted area as defined in 10 CFR Part 20. The 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. 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 to be prepared in connection with the issuance of these amendments.

5.0 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 this amendment 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 contributor: C. Nichols

Dated: September 6, 1988