

June 3, 1987

Docket No.: STN 50-528

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

Dear Mr. Van Brunt:

Subject: Issuance of Amendment No. 18 to Facility Operating License No. NPF-41
for Palo Verde, Unit 1 (TAC NO. 65290)

The Commission has issued the enclosed Amendment No. 18 to Facility Operating License No. NPF-41 for Palo Verde Nuclear Generating Station, Unit 1. The amendment consists of changes to the Technical Specifications in response to your application transmitted by letter dated May 10, 1987, as supplemented by letter dated May 14, 1987.

The amendment revises Technical Specification 3/4.11.1, on a one time basis and for a period not to exceed March 31, 1988, to allow the release of secondary system liquid waste to the onsite evaporation pond, while the concentration of Antimony-124 exceeds 5×10^{-7} $\mu\text{Ci/ml}$, provided that the concentration does not exceed the limits of 10 CFR Part 20, Appendix B, Table II, Column 2.

A copy of the Safety Evaluation supporting the amendment is also enclosed. The notice of issuance will be included in the Commission's next regular bi-weekly Federal Register notice.

Sincerely,

Original signed by

E. A. Licitra, Senior Project Manager
Project Directorate V
Division of Reactor Projects - III/IV/V
& Special Projects

Enclosures:

1. Amendment No. 18 to NPF-41
2. Safety Evaluation

cc: See next page

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changes marked
5/29/87*

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. 18
License No. NPF-41

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment, dated May 10, 1987, as supplemented by letter dated May 14, 1987, 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.

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2. Accordingly, the license is amended by a change 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. 18, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in this license. APS shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

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

FOR THE NUCLEAR REGULATORY COMMISSION



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

Enclosure:
Change to the Technical
Specifications

Date of Issuance: June 3, 1987

June 3, 1987

ENCLOSURE TO LICENSE AMENDMENT

AMENDMENT NO. 18 TO FACILITY OPERATING LICENSE NO. NPF-41

DOCKET NO. STN 50-528

Replace the following page of the Appendix A Technical Specifications with the enclosed page. The revised page is identified by Amendment number and contains vertical lines indicating the areas of change. Also to be replaced is the following overleaf page to the amended page.

Amendment Page

3/4 11-1

Overleaf Page

3/4 11-2

3/4.11 RADIOACTIVE EFFLUENTS

3/4.11.1 SECONDARY SYSTEM LIQUID WASTE DISCHARGES TO ONSITE EVAPORATION PONDS CONCENTRATION

LIMITING CONDITION FOR OPERATION

3.11.1.1 The concentration of radioactive material discharged from secondary system liquid waste to the onsite evaporation ponds shall be limited to the lower limit of detectability (LLD) defined as 5×10^{-7} $\mu\text{Ci/ml}$ for the principal gamma emitters or 1×10^{-6} $\mu\text{Ci/ml}$ for I-131.*

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

ACTION:

When any secondary system liquid waste discharge pathway concentration determined in accordance with the surveillance requirements given below exceeds the specified LLD, divert that discharge pathway to the liquid radwaste system without delay or process the liquid wastes to meet the specified limits prior to release to the onsite evaporation ponds.

SURVEILLANCE REQUIREMENTS

4.11.1.1.1 Radioactive liquid wastes collected in the chemical waste neutralizer tank shall be sampled and analyzed prior to their batchwise discharge to the onsite evaporation pond in accordance with the sampling and analysis program specified in Table 4.11-1.

4.11.1.1.2 With the concentration of radioactive material in the chemical waste neutralizer tank exceeding the specified LLD, sample and analyze other secondary system discharge pathways in accordance with the sampling and analysis program specified in Table 4.11-1.

* For one time only, effective March 24, 1987, releases of principal gamma emitters with half lives less than 75 days may be allowed to exceed 5×10^{-7} $\mu\text{Ci/ml}$ but shall be limited to 10 CFR 20, Appendix B, Table II, Col. 2 concentrations for a period not to exceed 60 days. Furthermore, effective June 3, 1987, releases of Antimony-124 (Sb-124) may be allowed to exceed 5×10^{-7} $\mu\text{Ci/ml}$, but shall be limited to 10 CFR 20, Appendix B, Table II, Column 2, concentrations until 2400 MST on March 31, 1988.

TABLE 4.11-1

RADIOACTIVE LIQUID WASTE SAMPLING AND ANALYSIS PROGRAM

SECONDARY SYSTEM LIQUID RELEASE PATHWAY	SAMPLING FREQUENCY	MINIMUM ANALYSIS FREQUENCY	TYPE OF ACTIVITY ANALYSIS	LOWER LIMIT OF DETECTION (LLD) ^a (μ Ci/mL)
A. Batch discharges^b				
1. Chemical Waste Neutralizer Tank	P Each Batch	P Each Batch	Principal Gamma Emitters ^c	5×10^{-7}
			I-131	1×10^{-6}
2. Steam Generator Blowdown Low TDS Sump*	P Each Batch	P Each Batch	Principal Gamma Emitters ^c	5×10^{-7}
			I-131	1×10^{-6}
3. Condensate Polishing Low TDS Sump*	P Each Batch	P Each Batch	Principal Gamma Emitters ^c	5×10^{-7}
			I-131	1×10^{-6}
B. Continuous Releases^d				
1. Turbine Building Sump*	D Grab Sample	D Grab Sample	Principal Gamma Emitters ^c	5×10^{-7}
			I-131	1×10^{-6}
2. Condenser Area Sumps*	D Grab Sample	D Grab Sample	Principal Gamma Emitters ^c	5×10^{-7}
			I-131	1×10^{-6}

*Sampling and analysis for pathways 2 and 3 under batch discharges and 1 and 2 under continuous releases are required only when concentration for chemical waste neutralizer tank pathway exceeds the LLD.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 18 TO FACILITY OPERATING LICENSE NO. NPF-41
ARIZONA PUBLIC SERVICE COMPANY, ET AL.
PALO VERDE NUCLEAR GENERATING STATION, UNIT NO. 1
DOCKET NO. STN 50-528

1.0 INTRODUCTION

By letter dated May 10, 1987, as supplemented by letter dated May 14, 1987, 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 (Appendix A to Facility Operating License NPF-41) for the Palo Verde Nuclear Generating Station, Unit 1. The proposed change would revise Technical Specification 3/4.11.1, on a one time basis and for a period not to exceed March 31, 1988, to allow the release to the onsite evaporation pond of secondary system liquid waste with radioactive concentrations of Antimony-124 in excess of 5×10^7 $\mu\text{Ci/ml}$, provided that 10 CFR Part 20 limits are not exceeded.

2.0 DISCUSSION

Palo Verde Unit 1 returned to power operation during March 1987 following an outage to repair a Steam Generator (S/G) tube leak and to plug S/G tubes which had exhibited wear. After resumption of power, it was determined that the required cleanup activities of the secondary system, due to the primary to secondary leakage which occurred in January 1987, could not be completed during power operation without exceeding the Limiting Condition for Operation (LCO) for Specification 3/4.11.1, "Secondary System Liquid Waste Discharges to Onsite Evaporation Ponds."

Specification 3/4.11.1 states that, "the concentration of radioactive material discharged from secondary system liquid waste to the onsite evaporation ponds shall be limited to the lower limit of detectability (LLD) defined as 5×10^6 $\mu\text{Ci/ml}$ for the principal gamma emitters or 1×10^6 $\mu\text{Ci/ml}$ for I-131." The concentrations of radionuclides in the ponds are estimated to be much less than that of the secondary system liquid wastes since there are other sources of water without radionuclides entering the pond. This specification is provided to ensure that at any time during the life of the nuclear station (i.e., Palo Verde, Units 1, 2 and 3) the annual total body dose due to ground contamination of an UNRESTRICTED AREA, arising from transportation and deposition by wind on the UNRESTRICTED AREA of the accumulated activity discharged to the onsite ponds from the secondary

system of the plant (if the ponds get dried up and not cleaned up), is within the guidelines of 10 CFR Part 20 for the above-mentioned postulated event.

Restricting the concentrations of the secondary liquid wastes discharged to the onsite evaporation ponds will restrict the quantity of radioactive material that can be accumulated in the ponds. This, in turn, provides assurance that in the event of an uncontrolled release of the ponds' contents to an UNRESTRICTED AREA, the resulting total body exposure from ground contamination to a member of the public at the nearest exclusion area boundary will be less than 0.5 rem per year.

By letter dated March 23, 1987, the licensees had previously requested relief from Specification 3/4.11.1 for a period of 60 days. The staff approved that request on March 24, 1987, which allowed the release of secondary system liquid waste to the onsite evaporation pond while the concentration of principal gamma⁷emitters in the liquid with half lives less than 75 days exceeded 5×10^{-7} $\mu\text{Ci/ml}$, provided that the concentration did not exceed the limits of 10 CFR Part 20, Appendix B, Table II, Column 2. The basis for granting the request is that the permitted action would have a negligible affect on the previously evaluated accident for the onsite ponds.

In the current request, dated May 10, 1987, the licensees state that during the week of April 27, 1987, they determined that the relief granted on March 24, 1987 would not afford adequate time for the removal of the isotope Antimony-124 (Sb-124), whose half life is 60 days. As a result, the licensees have requested additional relief from Specification 3/4.11.1 until March 31, 1988, to permit the release of secondary system liquid wastes with Sb-124 concentrations above 5×10^{-7} $\mu\text{Ci/ml}$.

The licensees state that all reasonable alternatives for removing the Sb-124 have been used without being able to reduce the concentrations to below 5×10^{-7} $\mu\text{Ci/ml}$. The licensees expect that by March 31, 1988, the secondary system will have undergone additional clean-up and radioactive decay to the point that the secondary system liquid discharges from Palo Verde, Unit 1, to the onsite evaporation pond will have concentrations that do not exceed 5×10^{-7} $\mu\text{Ci/ml}$. During this period of time, the licensees will actively pursue and evaluate alternatives for potential plant modifications.

By letter dated May 14, 1987, the licensees provided an evaluation of the effects of discharging to the onsite evaporation pond, secondary system liquid waste with an Antimony-124 concentration of 2×10^{-5} $\mu\text{Ci/ml}$ for the requested time period. Based on the results of that analysis, the licensees (1) indicate that about 1.4 curies of Antimony-124 will be discharged to the ponds during the requested time period, and (2) conclude that the dose contribution of Antimony-124 to the previously evaluated accident for the onsite ponds would be less than 10^{-2} mrem/year. The licensees also concluded that there is no Appendix I impact created by the addition of Antimony-124 to the pond since it is being discharged as a dissolved solid and will remain onsite in the pond.

3.0 EVALUATION

The staff has reviewed the licensees' request for relief to Specification 3/4.11.1, dated May 10, 1987, as supplemented by analyses submitted by letter dated May 14, 1987. The requested relief is to permit, until March 31, 1988, the discharge to the onsite evaporation pond of secondary system liquid waste while the concentration of Antimony-124 exceeds 5×10^{-5} $\mu\text{Ci/ml}$ provided that the concentration does not exceed 2×10^{-5} $\mu\text{Ci/ml}$.

On the basis of that review, the staff concurs with the licensees' assessment and has determined that: (1) based on licensees' analysis, about 1.4 curies of Antimony-124 will be discharged into the pond during this time period; and (2) since Antimony-124 has a radioactive half-life of about 60 days, essentially all of the 1.4 curies of Antimony-124 will have decayed away prior to the end of the plant's projected operating life. Since the pond is not expected to dry out during the operating life of the plant, the doses to members of the general public from routine operations are estimated to remain within the annual dose design objectives of 10 CFR 50, Appendix I. Consequently, the additional quantities of Antimony-124 that would be discharged into the evaporation pond during the next ten months would not lead to exposures significantly higher than those originally estimated.

Based on the above evaluation, the staff concludes that the proposed change to Specification 3/4.11.1 is acceptable.

4.0 FINAL NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves no significant hazards consideration if operation of the facility in accordance with a proposed amendment would not: (1) Involve a significant increase in the probability or consequences of an accident previously evaluated; (2) Create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) Involve a significant reduction in a margin of safety.

A discussion of these standards and they relate to the amendment request follows.:

Standard 1 - Involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated. The only previously evaluated accident that is affected by the change for the onsite evaporation ponds involves the annual total body dose due to ground contamination of an unrestricted area, arising from the transportation and deposition by wind of the accumulated activity discharged to the ponds during the life of the plant in the event that the pond dries up. The Technical Specifications are being changed to allow continued operation of the unit until March 31, 1988 while the concentration of radioactive material discharged from secondary liquid waste to the onsite evaporation ponds is above the lower limit of detectability but within the limits of 10 CFR Part 20, Appendix B, Table II. Since the half life of the material involved is less than 75 days, this will have a negligible effect on the previously evaluated accident. Therefore, this change does not involve a significant increase in the probability or consequences of any accident previously evaluated.

Standard 2 - Create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed amendment will not create the possibility of a new or different kind of accident from any accident previously evaluated. The only effect of this proposed change is to allow for temporary discharge to the onsite pond of higher concentrations of Antimony-124 in the radioactive liquids which have been generated during normal processing/regeneration of condensate polisher resins. The small amounts ($<2 \times 10^6$ $\mu\text{Ci/ml}$) of total activity present in regeneration wastes which will be discharged into the onsite evaporation ponds are within the limits of 10 CFR Part 20, Appendix B, Table II. As noted above, accidents involving discharges from the ponds have been previously evaluated and this change does not have a significant effect on such accidents.

Standard 3 - Involve a significant reduction in a margin of safety.

The requested amendment does not involve a significant reduction in a margin of safety because the proposed change does not affect the design basis of the plant. The existing limits for concentrations of radioactive material discharged from secondary system liquid waste to the onsite evaporation ponds will remain at 5×10^6 $\mu\text{Ci/ml}$ for principal gamma emitters. However, releases of Antimony-124 with a half life of 60 days may be allowed to exceed 5×10^6 $\mu\text{Ci/ml}$ but will be limited to 10 CFR 20, Appendix B, Table II concentrations for a period not to exceed March 31, 1988 and will remain onsite in the evaporation pond. For these reasons, it has been determined that the change does not involve a significant reduction in the margin of safety.

The staff, therefore, concludes that operation of the facility in accordance with the proposed change does not represent a significant hazards consideration.

5.0 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 amendment request. No comments were received.

6.0 ENVIRONMENTAL CONSIDERATION

This amendment involves changes in the installation or use of facility components located within the restricted area. The staff has determined that the amendment involves 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. Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

7.0 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 change is acceptable.

Principal contributor: E. Branagan

Dated: June 3, 1987

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