



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 16 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

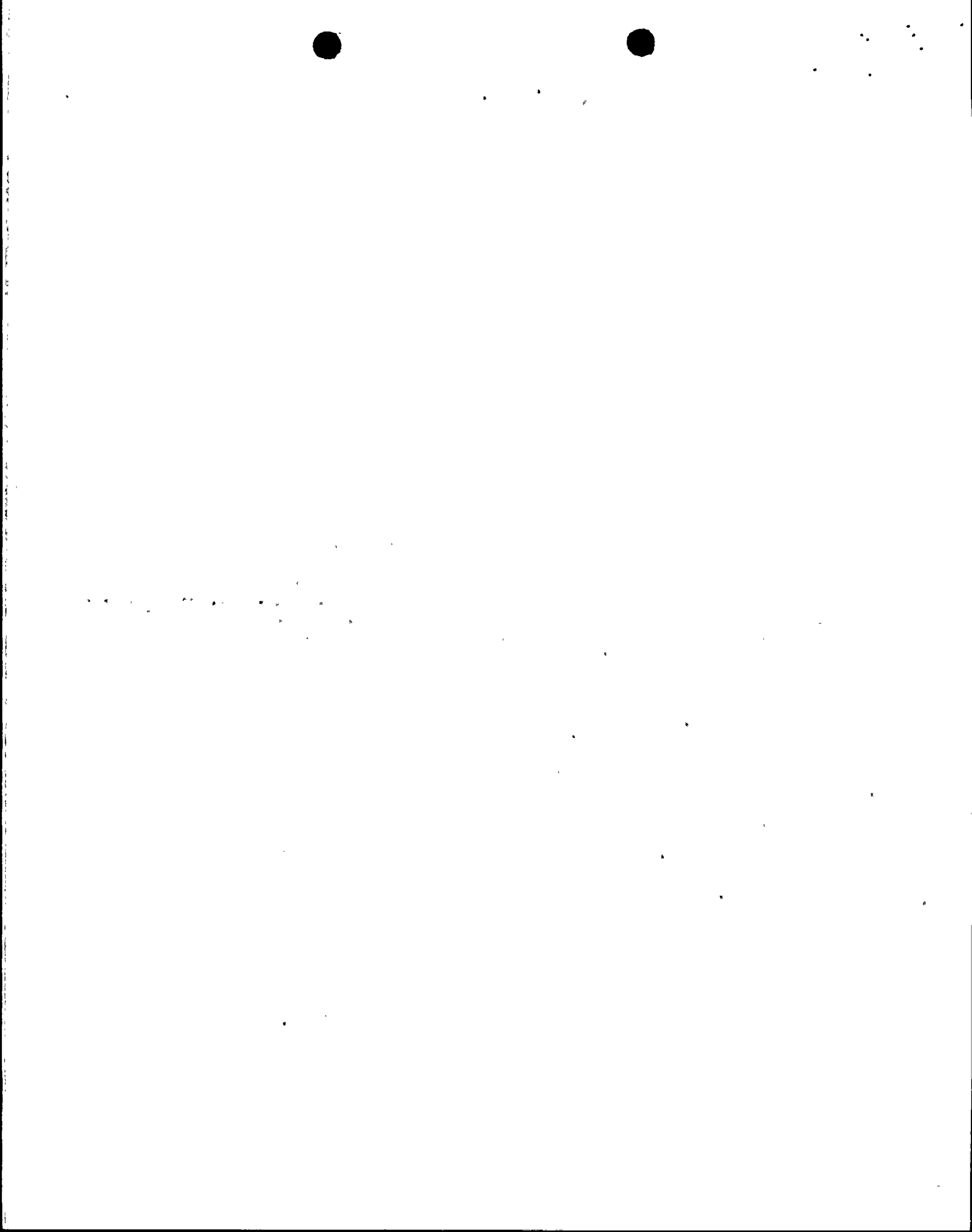
By letter dated March 23, 1987, the Arizona Public Service Company (APS) on behalf of itself, the Salt River Project Agricultural Improvement and Power District, Southern California Edison Company, El Paso Electric Company, Public Service Company of New Mexico, Los Angeles Department of Water and Power, and Southern California Public Power Authority (licensees), requested an emergency 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 60 days, to allow the release to the onsite evaporation pond of secondary system liquid waste with radioactive concentrations 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 5×10^7 $\mu\text{Ci/ml}$ for the principal gamma emitters or 1×10^6 $\mu\text{Ci/ml}$ for I-131." 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

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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.

As soon as the licensees became aware that the LCO for Specification 3/4.11.1 would not be met with continued operation of Palo Verde Unit 1, they informed the staff of the situation and submitted a request for an emergency technical specification change by letter dated March 23, 1987. The requested action was to allow continued operation for a period beginning March 24, 1987 and ending May 23, 1987, while the concentration of principal gamma emitters with half lives less than 75 days in the secondary system liquid waste 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 11, Column 2.

In their request, the licensees stated that every effort to avoid the emergency situation was made (e.g., by processing the waste to lower concentrations). They also stated that failure to grant relief by March 24, 1987 would result in derating the plant followed by shutdown of the unit.

In their evaluation of the proposed request, the licensees stated that the proposed change will not reduce the margin of safety as defined in the basis for any Technical Specification. The basis for Specification 3.11.1.1 uses the guidelines of 10 CFR 20 which, as noted by the proposed footnote to the specification, will be the limiting factor for principal gamma emitters with half lives less than 75 days. The licensees conclude that this provides assurance that the resulting total body annual exposure from ground contamination to a member of the public at the nearest exclusion area boundary, in the event of uncontrolled release of the contents of the onsite evaporation pond, will be within those limits.

3.0 EVALUATION

The staff has evaluated the proposed change and finds that it is an emergency situation since failure of the NRC to take action would result in Palo Verde, Unit 1 being derated and subsequently shutdown.

The need for the proposed action was not determined until after the Unit returned to power operation in March 1987. The licensees used every effort to avoid the emergency request without success. The staff has reviewed the facts concerning the request and concluded that the licensees have made a timely submittal, that power operation cannot continue without NRC action, and that action by the licensees could not preclude this situation.

The action requested by the licensees is to change Specification 3/4.11.1, on a one time basis and for a period not to exceed 60 days, by allowing the concentration of secondary system liquid waste released to the onsite evaporation pond to exceed 5×10^7 $\mu\text{Ci/ml}$ for principal gamma emitters with half lives less than 75 days, provided that the concentration does not exceed the limits of 10 CFR Part 20, Appendix B, Table II, Column 2.

The staff has reviewed the effects of the proposed change and has determined that it will not significantly decrease the degree to which the specification provides assurance that, at any time during the life of the nuclear station (i.e., Palo Verde, Units 1, 2 and 3), the annual total whole body dose to the public, due to a postulated accident with the pond, will be within the guideline values of 10 CFR Part 20. The calculated dose to the public is determined by assuming that the onsite evaporation pond dries up after the completion of plant life for the three units and that the remaining accumulated activity, which had been discharged from the plant secondary systems, causes ground contamination in an unrestricted area due to transportation and deposition by wind.

Based on the above evaluation, the staff concludes that the proposed change is acceptable. Staff approval of the request was granted to the licensees by phone on March 24, 1987.

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 previously evaluated accident for the onsite evaporation ponds is 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 for 60 days while the concentration of radioactive material discharged from secondary system 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 event. Therefore, this change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

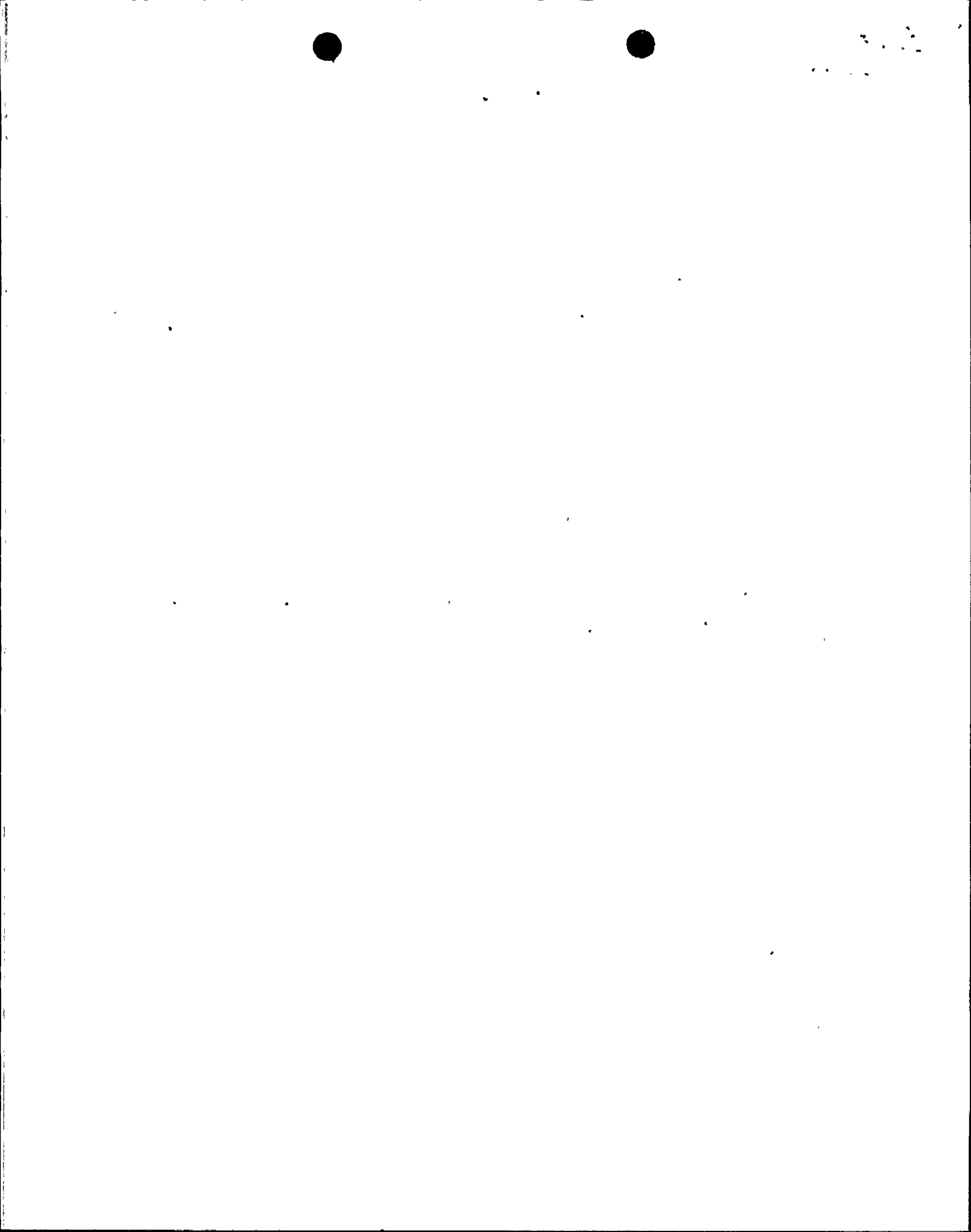
Standard 2 - Create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed amendment will not create the possibility of a new or different kind of accident from any accident previously evaluated because the proposed amendment does not vary, effect or provide any physical changes to the facility. This proposed change only allows for temporary discharge to the onsite pond of higher concentrations of 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. For these reasons, it has been determined that the proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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 5×10^7 $\mu\text{Ci/ml}$ for principal gamma emitters. However, 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 will be limited to 10 CFR 20, Appendix B, Table II concentrations for a period not to exceed 60 days 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 NRC staff advised the Arizona Radiation Regulatory Agency of the final determination of no significant hazards consideration by phone on March 24, 1987. The State had no comments on this determination.

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.

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Dated: April 29, 1987

