UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 93 TO FACILITY OPERATING LICENSE NO. NPF-41,

AMENDMENT NO. 81 TO FACILITY OPERATING LICENSE NO. NPF-51,

AND AMENDMENT NO. 64 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 December 7, 1994, the Arizona Public Service Company (APS or the licensee) submitted a request for changes to the Technical Specifications (TS) 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). The Arizona Public Service Company submitted this request 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. The proposed amendments would revise the Bases of TS 3/4.7.5, "Ultimate Heat Sink" (UHS), to describe the UHS as containing a 26-day supply of cooling water, instead of a 27-day supply. In addition, the bases of this TS would be revised to reference the January 1976 revision of Regulatory Guide (RG) 1.27, "Ultimate Heat Sink for Nuclear Plants," rather than the March 1974 revision.

2.0 BACKGROUND

The purpose of the UHS is to ensure that sufficient cooling capacity is available to either (1) provide normal cooldown of the facility, or (2) to mitigate the effects of accident conditions within acceptable limits.

RG 1.27 states, in part, that "the capacity of the sink should be sufficient to provide cooling both for the period of time needed to evaluate the situation and for the period of time needed to take corrective action. A period of 30 days is considered to be adequate for these purposes." The RG further states that "a capacity less of than 30 days may be acceptable if it can be demonstrated that replenishment can be effected to ensure the continuous capability of the sink to perform its safety functions, taking into account the availability of replenishment equipment and limitations that may be imposed on 'freedom of movement' following an accident." The original licensing justification for a 27-day capacity, instead of a 30-day capacity as

specified in RG 1.27, was based on the initial UHS capacity and the availability of a reliable makeup source before the water in the UHS is depleted.

In Supplement 3 to NUREG-0857, "Safety Evaluation Report for Palo Verde Nuclear Generating Station," dated September 1982, the staff concluded that the Palo Verde UHS 27-day capacity met the guidelines of RG 1.27 because the regional aquifer is a highly reliable source of water. A natural phenomenon that could render all three onsite wells inoperable is highly unlikely, and APS has demonstrated that, even if the onsite wells were inoperable, a new well could be drilled and put in operation within 15 days to ensure continuous operation of the spray ponds.

As part of the Palo Verde design-basis reconstitution program, the licensee reanalyzed the capacity of the spray ponds. The reanalysis concluded that the spray ponds have adequate capacity to provide cooling without makeup for at least 26.2 days. The original analysis performed in 1982 showed that the spray ponds could provide cooling without makeup for 27.3 days. The 27-day cooling water supply discussed in the bases for TS 3/4.7.5 was based on the 1982 analysis. The licensee stated that the more conservative assumptions of the reanalysis were based on Palo Verde operating experience. The differences in the analyses derive from the different input data for spray pond system flow, spray pond initial temperature, spray droplet size, and spent fuel pool heat loads. These data were modified to be consistent with the current Palo Verde design basis.

Therefore, the licensee proposed to revise the Bases of TS 3/4.7.5, "Ultimate Heat Sink," to describe the UHS as containing a 26-day supply of cooling water, instead of a 27-day supply.

3.0 EVALUATION

The capability of the UHS is based on the initial UHS capacity and the availability of a reliable makeup source prior to depletion of the initial UHS capacity. Therefore, although the proposed change reduces the capacity of the UHS without makeup from 27 days to 26 days, this change would not significantly decrease the margin of safety since (1) the recalculation with conservative plant-specific information only changed the previous capacity by 1 day and (2) the assumptions regarding makeup sources have not changed.

Furthermore, the licensee confirmed that the conclusions of Supplement 3 to NUREG-0857 are still valid. The regional aquifer is a highly reliable source of water; it is highly unlikely that a natural phenomenon could render all three onsite wells inoperable; and even if the onsite wells were inoperable, the licensee has demonstrated that a new well could be drilled and put in operation within 15 days to ensure the continuous operation of the spray ponds.

As stated in the licensee's emergency procedures, the decision to construct an emergency well and piping system will be made within 6 days of the emergency declaration. Thus, a makeup cooling water source will be available within 21 days, ensuring that a continuous capability of the ultimate heat sink to perform its safety function is maintained.

Based on the above evaluation, the staff concludes that the proposed change to reduce the capacity of the UHS as described in the Bases of TS 3/4.7.5, from providing a 27-day cooling water supply to providing a 26-day cooling water supply is acceptable.

With regard to the proposed change to reference the January 1976 version of RG 1.27 in the Bases of TS 3/4.7.5 (the current TS reference the March 1974 version), the staff concludes that the change is administrative in nature in that it references the revision committed to in the Update Final Safety Analysis Report when the plants were licensed. The change corrects an editorial discrepancy and is, therefore, acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Arizona State official was notified of the proposed issuance of the amendments. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC 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 (60 FR 11127). 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 be prepared in connection with the issuance of the amendments.

6.0 CONCLUSION

The Commission 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 the amendments will not be inimical to the common defense and security or to the health and safety of the public.

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