



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 84 TO FACILITY OPERATING LICENSE NO. DPR-54

SACRAMENTO MUNICIPAL UTILITY DISTRICT

RANCHO SECO NUCLEAR GENERATING STATION

DOCKET NO. 50-312

INTRODUCTION

By letter dated December 18, 1984, as revised April 26, 1985, supplemented May 22, 1985, and superseded October 30, 1985, Sacramento Municipal Utility District (SMUD or the licensee) requested amendment to the Technical Specifications (TSs) appended to Facility Operating License No. DPR-54 for the Rancho Seco Nuclear Generating Station (RS). The proposed amendment would establish new TS Limiting Conditions for Operation (LCOs) 3.9.1 through 3.9.4 to limit the maximum spent fuel pool temperature. In addition, guidance is provided on the use of the Decay Heat Removal System (DHRS) as an alternate/supplemental means of pool cooling.

EVALUATION

The Spent Fuel Pool Cooling System (SFPCS) at RS is single loop (i.e., one pump and one heat exchanger). This system is not safety-related and as such was not designed to seismic criteria. It is also connected with non-seismic piping and valves to a purification system. Since the SFPCS is single loop, a single active failure could prevent cooling of high-density stored fuel assemblies. Without cooling, the SFP would begin to boil (see "Time to Boil Calculation, Supplement No. 2 to Thermo-Hydraulic Calculations for Rancho Seco Nuclear Station; Report No. TM-661") in as soon as 36 hours, for the worst case. However, connections are available to utilize the DHRS as an alternate method of SFP cooling, if necessary. The DHRS is seismically qualified. Furthermore, those portions of the SFPCS used during alternate SFP cooling have been upgraded to seismic criteria.

The licensee has stated that inoperability of the SFPCS concurrent with an elevated pool temperature (140°F) has not occurred to date at RS. Consequently, use of a DHRS train in the alternate cooling mode has never been required. In the unlikely event that such a condition occurs, the proposed LCOs will limit the DHRS usage in the spent fuel pool cooling mode to no more than 100 cumulative hours in a 12-month period in order not to significantly impact DHRS availability for its post-LOCA (loss of coolant accident) decay heat removal safety function. The proposed LCOs also require that the DHRS train be declared inoperable when it is being used in the spent fuel pool cooling mode to further limit the impact of this operating condition on the normal safety function of the DHRS. The inoperable status of a DHRS train will invoke the existing DHRS LCO 3.3.2, which requires restoration of the DHRS to a normal alignment within 48 hours or shutdown of the plant (if not already in

cold shutdown). Finally, the proposed LCOs limit the SFP bulk temperature to 180°F and thereby achieve the desired objective of preventing SFP boiling. The intent of alternate SFP cooling is to supplement or supplant, as neccessary, the SFPCS. DHRS operation in this mode is intended to meet operability requirements comparable with SFPCS operation.

Based on the above, we conclude that the proposed TS change consisting of new LCOs 3.9.1 through 3.9.4 provides proper limitations on use of the DHRS. These TSs will not significantly impact plant safety, but will assure that supplemental SFP cooling is provided as required. The proposed change is therefore acceptable.

ENVIRONMENTAL CONSIDERATION

This amendment involves a change in the use of a facility component located within the restricted area as defined in 10 CFR Part 20. We have 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. The Commission has previously issued a proposed finding that this amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, this 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.

CONCLUSION

We have 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, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Dated: March 31, 1987

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