



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
SUPPORTING AMENDMENT NO. 71 TO FACILITY OPERATING LICENSE NO. DPR-54  
SACRAMENTO MUNICIPAL UTILITY DISTRICT  
RANCHO SECO NUCLEAR GENERATING STATION  
DOCKET NO. 50-312

1.0 INTRODUCTION

By application dated October 27, 1980, as supplemented May 30, 1984, Sacramento Municipal Utility District (the licensee) requested changes to Facility Operating License No. DPR-54 for Rancho Seco Nuclear Generating Station (the facility). The proposed changes would revise the facility Technical Specifications (TSs) to incorporate requirements for redundant decay heat removal capability during all modes by facility operation.

2.0 BACKGROUND

A number of events have occurred at operating Pressurized Water Reactor (PWR) facilities where decay heat removal capability has been seriously degraded due to inadequate administrative controls during shutdown modes of operation. One of these events, described in IE Information Notice 80-20 (Ref. 1) occurred at the Davis-Besse Nuclear Power Station, Unit No. 1, on April 19, 1980. In IE Bulletin 80-12 (Ref. 2) dated May 9, 1980, licensees were requested to immediately implement administrative controls which would ensure that proper means are available to provide redundant methods of decay heat removal. While the function of the bulletin was to effect immediate action with regard to this problem, the NRC considered it necessary that an amendment be made to each PWR license to provide for permanent long-term assurance that redundancy in decay heat removal capability will be maintained. By letter dated June 11, 1980, (Ref. 3), all PWR licensees were requested to propose Technical Specification changes that provide for redundancy in decay heat removal capability in all modes of operation; to use the NRC model Technical Specifications to provide an acceptable solution to the concern; to include an appropriate safety analysis as a basis; and to submit the proposed Technical Specification changes along with the bases by October 11, 1980. As noted above, the licensee submitted such changes October 27, 1980.

3.0 DISCUSSION AND EVALUATION

The Licensee's proposed Technical Specifications provide for redundant means of decay heat removal in all modes of operation except during refueling when a large mass of water is above the core. These redundant means are outlined as follows:

#### Power Operation and Startup

Both reactor coolant loops must be in operation with all four reactor coolant pumps operating except that operation with three reactor coolant pumps is permitted if the nuclear overpower trip setpoint is appropriately reduced.

#### Hot Standby

Both reactor coolant loops with at least one reactor coolant pump in each loop are required to be operable; however, only one of the loops is required to be in operation.

#### Hot Shutdown

At least two of the heat removal coolant loops are required to be operable, i.e., either two reactor coolant loops or two decay heat removal loops, or the combination of one each of these coolant loops with one loop in operation. Heat removal modes are the two reactor coolant loops with at least one reactor coolant pump in each loop and the two decay heat removal loops.

#### Cold Shutdown and Refueling with the Water Level Above the Core Less than 23 Feet

The two decay heat removal loops are required to be operable with at least one loop in operation.

#### Refueling with the Water Level Above the Core Greater than 23 Feet

At least one decay heat removal loop is required to be in operation. The other loop need not be operable.

In addition to the above requirements for operability, the Technical Specification revisions specify surveillance intervals for heat removal systems.

The revised Technical Specifications which are consistent with the NRC standard Technical Specifications provide an improvement over the existing ones since redundant decay heat removal will now be provided during hot standby, hot shutdown and cold shutdown. During refueling, with a large mass of water above the core, only a single heat removal path is required. The surveillance requirements that would identify any inoperable equipment or degrading performance are performed during each shift. We therefore conclude that the proposed Technical Specifications provide an improvement over existing Technical Specifications with respect to redundant means of decay heat removal capability and are acceptable.

#### 4.0 ENVIRONMENTAL CONSIDERATION

This amendment involves changes in the installation or use of facility

components located within the restricted area as defined in 10 CFR Part 20 and changes in surveillance requirements. 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.

#### 5.0 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: July 3, 1985

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#### REFERENCES

1. NRC IE Information Notice 80-20, May 8, 1980.
2. NRC IE Bulletin 80-12, May 9, 1980.
3. NRC Letter, D. G. Eisenhut, To All Operating Pressurized Water Reactors (PWRs), dated June 11, 1980.
4. SMUD Letter, J. J. Mattimoe to Darrell G. Eisenhut, NRC, October 7, 1980.
5. SMUD Letter, R. J. Rodriguez to John F. Stolz, NRC, May 30, 1984.