



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 130 TO FACILITY OPERATING LICENSE DPR-54
RANCHO SECO NUCLEAR GENERATING STATION, UNIT 1
DOCKET NO. 50-312

1.0 INTRODUCTION

By letters dated June 21, 1988 and February 28, 1989, the licensee (Sacramento Municipal Utility District) requested an amendment to Operating License DPR-54 for Rancho Seco in the form of Technical Specification (TS) changes. This request, designated as Proposed Amendment 130, would revise the TS to define the operability requirements and surveillance for the reactor building pressure equalization valves and revise the usage of the existing purge system.

The containment purge and vent isolation valves are required to be operable during a LOCA, so that there is an assurance that the valves would close against the containment pressure buildup if the LOCA occurred while the valves were open. The purge and vent systems installed in the Rancho Seco plant consist of two 66-inch normal purge lines (one inlet and one outlet) and one 12-inch pressure equalizing and mini-purge inlet line. Each of these lines has two butterfly-type isolation valves, one inside and one outside containment. They are normally closed and are open only for purging. The 12-inch line can also provide a continuous equalization of pressure between the reactor building interior and the outside environment through the purge air system. The 12-inch line has a separate penetration to the reactor building interior and is connected to the normal purge system supply and discharge ducts outside the reactor building.

In a letter dated December 27, 1983, the licensee requested authorization to use the 12-inch valves to equalize reactor building pressure during power operation, i.e., vent in summer and allow air to enter the reactor building in winter. The staff has previously reviewed the operability of the 12-inch (vent) valves and found that the valves had the ability to close against the buildup of containment pressure in the event of a DBA-LOCA as addressed in the staff's safety evaluation report dated December 4, 1984. In that safety evaluation, the staff required the licensee to implement the following prior to the approval of the valve usage during power operation:

1. Install a high-range monitor on the reactor building purge (vent) line and make the radiation monitor operation meet NUREG-0737, Item II.F.1 requirements.

2. Revise the plant Technical Specifications to reduce the leak testing interval for the 12-inch pressure equalization valves from 6 months to 3 months.

Accordingly, the licensee has installed the radiation monitor, i.e., R-15044, to meet NUREG-0737, Item II.F.1 requirements and has requested that the TS be revised to define the operability and surveillance of these valves. The licensee's proposed TS changes are itemized below followed by the staff's evaluation.

2.0 EVALUATION

2.1 TS Table 3.5.1-1, Instrument Operating Conditions

The licensee proposed to rewrite the operator action in Item 9, Column C of the table to read:

"With the number of operable channels less than the minimum channels operable, reactor power operation may continue provided the purge valves are closed in accordance with Specification 3.6.7, the equalization valves are closed and the ACTION stated in Table 3.5.5-1 for Accident Monitoring Instrumentation Operability Requirements, Item 1 is taken."

The licensee also changed the minimum required operable channels in Item 9 Column B from 1 to 2. The proposed TS would require the purge valves and the pressure equalization valves to be closed on high radiation and both of the two channels to be operable in lieu of a minimum of one channel operable. Operator Action requirements in Item 1 also require the inoperable channel to be restored to operable status within 7 days if the number of operable process instrumentation channels is less than the total number of channels, or be in at least hot shutdown within TS 3.5.1.2 specified time limit.

SRP Section 6.2.4 requires that containment purge valves that do not satisfy the operability criteria set forth in Branch Technical Position (BTP), CSB 6-4 must be sealed closed during operational Modes 1, 2, 3, and 4, and these valves must be verified to be closed at least every 31 days. NUREG-0737, Item II.E.4.2 also requires purge/vent lines to be equipped with radiation monitors that are capable of isolating these lines upon a high radiation signal. The proposed TS would provide an action statement to address purging and pressure equalizing in relation to high radiation monitor operability during reactor operation. The staff finds that the changes are consistent with the guidelines of SRP Section 6.2.4, BTP (CSB) 6-4, and NUREG-0737, and are, therefore, acceptable.

2.2 TS 3.6.8 is to be revised to read:

"The reactor building purge valves and reactor building pressure equalization valves shall isolate on high containment radiation level. See Table 3.5.1-1 for operability requirements."

The proposed TS would require both the reactor building pressure equalization valves and the purge system valves to complement a containment integrity requirement. The staff finds that the TS change meets the requirements of NUREG-0737, Item 11.E.4.2 and is, therefore, acceptable.

2.3 TS 3.8.10 is to be revised to read:

"The reactor building purge system, including the reactor building stack radiation monitor, shall be tested and verified to be operable within 100 hours prior to refueling operations and once per 7 days during refueling operations."

The proposed TS is in accordance with the surveillance requirements of containment purge and exhaust isolation system for refueling operation as addressed in Babcox & Wilcox Standard Technical Specifications (B&W STS). The staff finds that the change meets the guideline of NUREG-0737, Item 11.F.1 and B&W STS, and is acceptable.

2.4 TS 3.8.11 is to be revised to read:

"With the reactor building purge system or the reactor building stack radiation monitor inoperable, close each of the reactor building purge system penetrations which provide direct access from the reactor building atmosphere to the outside atmosphere."

The proposed TS would require the penetrations for purge/vent lines be closed when either the purge system or the stack radiation monitor is inoperable. The staff has previously found that purge valves failure to close during a LOCA with reactor coolant temperature above 200°F may result in site boundary doses exceeding 10 CFR Part 100 limit. Therefore, the proposed TS change is necessary and consistent with the guidelines of SRP 6.2.4, BTP (CSB) 6-4, and is acceptable.

2.5 TS 3.8.13 is to be added to the TS to read:

"Irradiated fuel shall not be removed from the reactor until the unit has been subcritical for at least 72 hours."

The provisions for refueling operations specified in B&W STS require the reactor decay time to be at least 100 hours and the movement of irradiated fuel in the reactor vessel shall be suspended if the decay time is less than 100 hours. However, TS 3.8.13 was renumbered from current TS 3.8.11 and the 72 hours decay time was previously reviewed and approved by the staff during initial Technical Specification review. Consequently, the proposed TS is acceptable.

2.6 TS 4.4.1.2.3 (d) is to be revised to read:

"The containment purge valves shall be tested at least once every 6 months. The containment equalization valves shall be tested once every 3 months."

TS 4.4.1.2.3 (e) was revised to require that if the equalization valves are not tested with the purge valves under this section, their 3-month test requirement must still be met. The proposed TS would require the pressure equalization valves to be tested every 3 months instead of the current TS specified 6-month test interval.

The provisions previously developed under Multi-Plant Action (MPA), long term resolution of Generic Issue B-24 for containment purging during normal plant operation, specified that leakage integrity tests be performed for the containment isolation valves with resilient seals in (1) the active purge system (i.e., those which may be operable during reactor operation) at least once every 3 months, and (2) the passive purge system (i.e., those which must be administratively controlled closed during reactor operation) at least once every 6 months.

The licensee's selection of these valve test frequencies is based on treating the 66-inch purge valves as passive valves and the 12-inch pressure equalization valves as active valves because the 12-inch valves may be used for containment pressure equalization during reactor operation. The staff finds that the proposed changes meet the provisions of MPA B-24 and, therefore, are acceptable.

2.7 TS Table 4.22-1, Radioactive Gaseous Waste Sampling and Analysis Program

The licensee proposed to add equalization vent along with the purge vent in Item B of the table to define sampling and analysis frequencies. The proposed TS would assure that all significant amounts of gasses released from the reactor building are properly sampled and analysed. Normally, the equalization operation will cause outside air to flow into the containment when containment is in negative pressure. If the containment pressure becomes positive, a grab sample analysis of the containment atmosphere and a release permit are required prior to initiation of equalization. Therefore, the staff finds that the change is necessary and acceptable.

Summary: Based on the review of the licensee's submittals, the staff concludes that the TS changes regarding the purge/vent system and the reactor building pressure equalization valves satisfy SRP 6.2.4, NUREG-0737 and MPA B-24, and therefore, are acceptable.

3.0 CONTACT WITH STATE OFFICIAL

The NRC staff has advised the State Department of Health Services, State of California, of the proposed determination of no significant hazards consideration. No comments were received.

4.0 ENVIRONMENTAL CONSIDERATION

This amendment involves changes in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. 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. 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, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to common defense and security or to the health and safety of the public.

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Dated: September 29, 1989