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SACRAMENTO MUNICIPAL UTILITY DISTRICT □ 6201 S Street, Box 15830, Sacramento, California 95813; (916) 452-3211

May 6, 1980

Mr. R. H. Engelken, Director
Region V, Office of Inspection
and Enforcement
U.S. Nuclear Regulatory Commission
Suite 202, Walnut Creek Plaza
1990 North California Boulevard
Walnut Creek, CA 94596

Docket No. 50-312
Rancho Seco Nuclear Generating
Station, Unit No. 1
IE Bulletin 80-04

Dear Mr. Engelken:

IE Bulletin 80-04 requested a review of our Containment Pressure Response Analysis with respect to possible over pressurization on a main steam line break inside containment. Additionally, it was requested that consideration be given to possible recriticality as a result of the primary system cooldown following the steam line break.

The attached response provides a description and results of the review. Based on these results, the District is assured that a main steam line break inside containment will not result in over pressurization of the Containment Building, and the cooldown rate of the primary system will be within the limits of the technical specifications, and the reactor will remain subcritical.

Sincerely,

John J. Mattimoe

John J. Mattimoe
Assistant General Manager
and Chief Engineer

Enclosure

cc: Office of Inspection & Enforcement
Division of Reactor Operations Inspection
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

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Enclosure I

RESPONSE TO IE BULLETIN 80-04

To assess the impact of the steam line break and the ability of plant systems and structures to respond in a safe manner to this type of transient, the following review was conducted.

A review of the Rancho Seco Unit 1 Accident Analysis, FSAR Chapter 14.2, shows that the plant systems and structures are designed to respond to a double ended guillotine steam line break inside of the containment. As discussed in Section 14.2.2.1.3.1, Accident Dynamics, a main steam line break would lead to a rapid decrease in secondary steam pressure and an increase in steam flow. This increased steam flow increases the primary to secondary heat transfer, thus lowering the primary coolant pressure and average temperature. Due to the large negative moderator temperature coefficient, the reactor thermal power will increase resulting in a reactor trip at 106 percent on high neutron flux in about 10 seconds.

As a result of the reactor trip, the turbine stop valves close, isolating the steam side of the unaffected steam generator. The reactor trip also results in the isolation of main feedwater to both steam generators. Additionally, a feedwater isolation signal to the affected steam generator is provided by low steam line pressure.

The auxiliary feedwater pumps will automatically start on the loss of both main feedwater pumps, providing feedwater to both steam generators to maintain a two foot minimum downcomer water level in the steam generators. The affected steam generator would be identified and auxiliary feedwater isolated to the generator in accordance with established and approved Emergency Procedures (D.13). Once the affected steam generator is isolated, it will blow dry. The reactor coolant system would be cooled by venting steam from the unaffected steam generator to the condenser or atmosphere. The operator would then systematically cool and depressurize by controlled auxiliary feedwater addition and steam venting.

As a result of the mass and energy released to the containment, the internal pressure would increase to approximately 30 psig. At 4 psig high containment pressure or 1600 psig low primary system pressure, the high pressure injection system will actuate if not actuated manually by the operator. The water added by the high pressure injection system is from the borated water storage tank (BWST), which contains an equivalent of 390,000 gallons of 1800 ppm borated water. By the addition of this borated water, adequate shutdown margin would be provided to prevent recriticality.

There have been no modifications to the feedwater or auxiliary feedwater systems which would invalidate the analysis in the Rancho Seco Unit I FSAR as described above.