



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

November 10, 1980

Director of Nuclear Reactor Regulation
Attention: Mr. Robert W. Reid, Chief
Operating Reactors, Branch 4
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Docket 50-312
Rancho Seco Nuclear Generating
Station, Unit No. 1

Dear Mr. Reid:

The Sacramento Municipal Utility District has received your letter of November 7, 1980 requesting additional information concerning our Proposed Amendment 70 to Operating License DPR-54. The information requested is attached to this letter. The District desires to implement this amendment as soon as possible and requests your prompt review of this information. Please advise if there are any further questions.

Sincerely,

John J. Mattimoe
Assistant General Manager
and Chief Engineer

Attachment

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CONFIRMATION AND CLARIFICATION OF PROPOSED AMENDMENT NO. 70

REQUEST FOR ADDITIONAL INFORMATION

Question (1) :

The value of flow measurement uncertainty was indicated to be $\pm 2.5\%$, derived from studies of the Toledo prototype. Confirm that the uncertainty figure of $\pm 2.5\%$ is applicable to the existing Rancho Seco piping and instrumentation configuration considering the recent RCS flow transmitter snubber modifications that increase instrument sensitivity.

Response:

The $\pm 2.5\%$ flow measurement uncertainty is the maximum uncertainty associated with determining flow from a heat balance. It is not related to the presence of snubbers in the sense lines to the flow transmitters.

Question (2)

Minimum RCS flow required by Tech Specs is 387,600 gpm. If your flow instrumentation indicated 387,600 gpm flow, is actual flow 387,600 gpm, or conceivably 2.5% less? If actual flow is conceivably 2.5% less, how do you ensure that the Tech Spec limit is not violated?

Response:

Verification that the Technical Specification minimum value of RCS flow is satisfied is determined by a heat balance, and not by reference to installed primary flow instrumentation. The measured flow rate for Cycle 4 is 404820 gpm which is 4.4% greater than the Tech Spec minimum required flow, or 1.9% greater than that required after full allowance for a maximum uncertainty 2.5% in the flow measurement. If the flow instrumentation indicated 387,600 gpm the actual flow could be 2.5% less, but at this time the indicated flow for the flux to flow trip would be 95.7% which would result in a reduction in the maximum allowable power level being $95.7 \times 1.08 = 103.4\%$ FP.

Question (3a)

Confirm that the original FSAR analysis and the original Cycle 4 analysis that concluded the DNBR margin was 10.2% was based upon a 100% design flow of 369,600 gpm.

Response:

The FSAR analysis was based upon 100% design flow (369,600 gpm) while the Cycle 3, Cycle 4 and recent Flux/Flow analysis were based upon 104.9% of

original design flow (387,710 gpm). The results of these analyses was to confirm the DNBR margin to be $\geq 10.2\%$.

Question (3b) :

Confirm that the analysis in support of the requested P/F - 1.08 Tech Spec change used the minimum flow value of 387,710 gpm (or 387,600 gpm) to determine that the new DNBR margin is $>10\%$.

Response:

The analyses done in support of the requested Flux/Flow change to 1.08 were done based upon a minimum flow of 387,600 gpm.

Question (4)

Confirm that the DNBR margin of $>10\%$ from 3b above exists for the following flow transients:

- a) four pump coastdown
- b) locked RCP rotor

If the DNBR margin of $>10\%$ from 3b above does not exist for the locked RCP rotor transient, what is the DNBR margin for the transient?

Response:

- a) Minimum DNBR margin for the "four pump coastdown" is $\geq 10.2\%$.
- b) Maintaining DNBR margin for the "locked RCP rotor" transient is not a requirement of the analysis. As reported in the FSAR paragraph 14.1.2.6.2 the criteria is that "...no fuel cladding failure shall occur." The satisfactory results were reconfirmed in the Fuel Densification analysis/report. For the requested Flux/Flow change, it has been confirmed that this analysis remains applicable.