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DESCRIPTION:
Ltr re our 10-9-73 ltr....furn info concern analysis of ATWS.....

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PLANT NAME: Diablo Canyon 1 & 2

FOR ACTION/INFORMATION 10-4-74 chf

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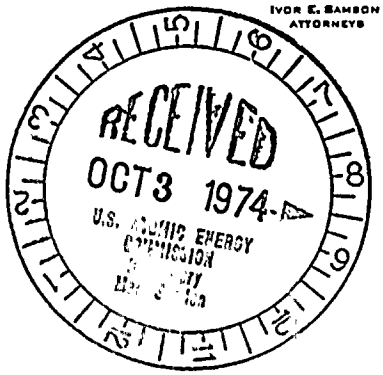
October 1, 1974



Mr. Angelo Giambusso
Deputy Director for Reactor Projects
Directorate of Licensing
Office of Regulation
U. S. Atomic Energy Commission
Washington, D. C. 20545

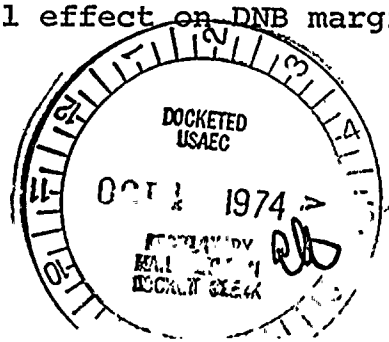
Re: Dockets 50-275-OL
50-323-OL

Dear Mr. Giambusso:

Your letter dated October 10, 1973 requested we provide you with an analysis in compliance with WASH-1270, "Technical Report on Anticipated Transients Without Scram for Water-Cooled Power Reactors," dated September 1973. We wish to advise you that for both Diablo Canyon Unit 1 (Docket 50-275), and Diablo Canyon Unit 2 (Docket 50-323), the implementation of WASH-1270 was done in accordance with its Appendix A, Section II.B. Assigning Diablo Canyon Unit 1 for implementation under Section II.B. is more stringent than required, but the design of Unit 1 is superior to that required for a Position I.C. plant.

In accordance with Appendix A, Section II.B.1., we reference Westinghouse topical report, WCAP-8330, "Westinghouse ATWT Analysis," dated August 1974, as the calculation of consequences for Diablo Canyon Units 1 and 2. We have reviewed this report and have determined that the models and parameters used in the analysis conservatively bound the Diablo Canyon units.

Attachment 1 tabulates the key parameters for the Diablo Canyon units which are important in the analysis. A comparison of these parameters with Table 2-1, page 2-3 of WCAP 8330 relative to the individual transients, shows the latter to be conservative. Sensitivity studies of the parameters shown in Table 2-1 have been performed in WCAP-8330 and show minimal effect on DNB margin or on reactor coolant system peak pressure.



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As recommended in WASH-1270, the evaluation techniques used are shown in WCAP-8330, Sections 2 and 3.

Appendix A, Section II.B.3. of WASH-1270 recommended that a review of the reactor protection system be made, providing an analysis of the system vulnerability to common mode failure. This has been performed by Westinghouse and is documented in WCAP-7706, "An Evaluation of Solid State Logic Reactor Protection in Anticipated Transients."

The analyses presented in WCAP-8330 and 7706 demonstrate that no modifications are required for Diablo Canyon Units 1 or 2 to mitigate the consequences of anticipated transients without trip.

Very truly yours,

F. T. Searls

Attachment

ATTACHMENT 1

Plant	DIABLO CANYON UNIT 1	DIABLO CANYON UNIT 2
Steam Generator Type	51 Series	51 Series
No. of Loops	4	4
RC Pump Type	Model 93A	Model 93A
Loop Isolation Valves	No	No
Core Power	3338 MW_t	3411 MW_t
* Nom. Pressurizer Pressure	2250 psia	2250 psia
Nom. Coolant Flow Total	350,800 gpm	354,000 gpm
Nom. Average Coolant Temperature	576.6° F	577.6° F
No-Load Coolant Temperature	547.0° F	547.0° F
Total RCS Volume Including Pressurizer and Surge Line	12,612 $Ft.^3$	12,612 $Ft.^3$
Pressurizer Volume		
a. Water	1080 $Ft.^3$	1080 $Ft.^3$
b. Steam	720 $Ft.^3$	720 $Ft.^3$
Number of Power Operated Relief Valves	3	3
Steam Capacity of Each Power Operated Relief Valve @ 2350 psia	210,000 lb/hr	210,000 lb/hr
Number of Safety Valves	3	3
ASME Rated Steam Capacity of Each Safety Valve @ 2,500 psia plus 3% Accumulation	420,000 lb/hr	420,000 lb/hr

DIABLO CANYON

	UNIT 1	UNIT 2
Best Estimate Rod Worth of Bank D at Its Full Power Insertion Limit	0.3 % k/k	0.3 % k/4
Steam Generator Design Pressure	1100 psia	1100 psia
Steam Generator Nom. Steam Temp.	513.1° F	513.1° F
Nominal Steam Flow	4039.3 lb/sec.	4128.2 lb/sec.
Nominal Feedwater Temp.	432.1° F	432.9° F
Nominal Fluid Mass in S.G.		
a. Specific Volume of Steam	0.5701 ft^3/lbm	0.5701 ft^3/lbm
b. Specific Volume of Water	0.02086 ft^3/lbm	0.02086 ft^3/lbm
c. Volume of Steam	3775 ft^3	3704 ft^3
d. Volume of Water	1983 ft^3	2054 ft^3
e. Mass of Steam	6621.6 lbm	6497.1 lbm
f. Mass of Water	95062.3 lbm	98466.0 lbm
g. Mass of Steam, 4 SG	26,486.4 lbm	25,988.4 lbm
h. Mass of Water, 4 SG	380,249.2 lbm	393,864.0 lbm
i. Total Mass, 4 SG	406,735.6 lbm	419,852.4 lbm
Auxiliary Feedwater Temp.		
Average Ambient	55° F	55° F
Auxiliary Feedwater Available	170,000 gal	170,000 gal
Capacity of Auxiliary Feedwater Pumps	1870 gpm	1870 gpm
Volume of Line Between Aux. Feedwater Connection on Feedline and SG Inlet, Total 4 SG	297.4 ft^3	297.4 ft^3

* Nominal in this attachment refers to the nominal full rated power condition of the plant.