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Attachment 2
Westinghouse Class 3
Response to NRC Questions on RCS Flow Reduction Evaluation

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Westinghouse Class 3

RESPONSES TO NRC QUESTIONS ON
RCS FLOW REDUCTION EVALUATION

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Table 1
 Millstone Unit 3 - 4% TDF Reduction Evaluation for N-Loop Operation

<u>EVENT</u>	<u>Available DNB Margin Before TDF Reduction</u>	<u>Available DNB Margin After TDF Reduction</u>	<u>Correlation Used</u>
1. Loss of Flow	[]	[]	WRB-2 (RTDP)
2. Feedwater Malfunction			WRB-2 (RTDP)
3. Excessive Load Increase			WRB-2 (RTDP)
4. Loss of Load/Turbine Trip			WRB-2 (RTDP)
5. RCCA Withdrawal at Power			WRB-2 (RTDP)
6. Inadvertent SI Actuation			WRB-2 (RTDP)
7. RCS Depressurization			WRB-2 (RTDP)
8. RCCA Misalignment (Dropped RCCA Bank)			WRB-2 (RTDP)
9. Steamline Break			W-3 (non-RTDP)
10. RCCA Withdrawal from Subcritical			W-3 (non-RTDP)

Overpressure Considerations

- Loss of Load Turbine Trip**

Plant-specific sensitivities performed for a 4% TDF reduction confirm that the LOL/TT pressurization rate is [][°] to small changes in RCS flowrate. The maximum RCS pressure reached assuming a 4% TDF reduction [][°] from the current Millstone 3 licensing-basis analysis.
- Locked Rotor**

Although plant-specific sensitivities were not performed for this event, sensitivities performed for other plants indicate that a reduction in flow is [][°] with respect to maximum RCS pressures. Furthermore, the Millstone Unit 3 licensing-basis locked rotor analysis shows that there is about [][°] margin to the limit (2750 psia) for N loop operation which is more than sufficient to offset any penalty associated with a lower RCS flow.
- Feedline Break**

NRC personnel also expressed concerns about the peak secondary side pressure reached during a FLB event with reduced RCS flow. The Millstone Unit 3 licensing-basis FLB analysis uses a conservative model for SG safety valve relief through the 3 intact SG. The safety valves are conservatively assumed to open at 110% of the SG design pressure. This prevents the pressure in the SG from exceeding the design pressure limit as long as the valves have sufficient relief capacity. Since the total relief capacity of these valves is not exceeded, this model is considered appropriate.

Dose Considerations

- Locked Rotor**

6% rods-in-DNB continues to apply after the 4% flow reduction.

Response to NRC Question on Millstone Unit 3 4% TDF reduction

The potential offsite doses due to a steam generator tube rupture event for Millstone Unit 3 (Table 15.0-8 in FSAR) are compared in the following table with the corresponding offsite dose limits (page 15.6-9 in the FSAR).

Offsite Radiological Doses	Thyroid Dose (rem)		Whole Body Dose (rem)	
	Calculated	Limit	Calculated	Limit
Pre-accident iodine spike 2 hr Exclusion Area Boundary	2.1	300	0.019	25
Pre-accident iodine spike 8 hr Low Population Zone	0.24	300	0.0012	25
Concurrent iodine spike 2 hr Exclusion Area Boundary	0.34	30	0.018	2.5
Concurrent iodine spike 8 hr Low Population Zone	0.076	30	0.0011	2.5

As shown in the table above, a significant amount of margin exists between the current offsite radiological doses and the limits. The 4% thermal design flow reduction was determined to result in a slight increase of offsite radiological doses. Since, there is ample margin to the limits to support even a substantial increase in the offsite radiological doses, it is apparent that the offsite dose will still be below the limits with a 4% thermal design flow reduction. Therefore, the conclusions of the Millstone Unit 3 FSAR that the radiological doses remain below 10CFR100 guidelines with a pre-accident iodine spike and below 10% of 10CFR100 guidelines with a concurrent iodine spike remain valid.