



*A Member of the
Constellation Energy Group*

March 3, 2000

U. S. Nuclear Regulatory Commission
Washington, DC 20555

ATTENTION: Document Control Desk

SUBJECT: Calvert Cliffs Nuclear Power Plant
Unit Nos. 1 & 2; Docket Nos. 50-317 & 50-318
Response to Request for Additional Information Concerning Diesel
Generator 1A Light Load Issue

REFERENCES:

- (a) Telephone Conference between Mr. B. S. Montgomery, et.al. (BGE) and Mr. A. W. Dromerick, et.al. (NRC), dated February 28, 2000, same subject
- (b) Letter from Mr. C. H. Cruse (BGE) to NRC Document Control Desk, dated February 18, 2000, "License Amendment Request: Unreviewed Safety Question – Diesel Generator 1A Light Load"
- (c) Letter from Mr. J. A. Tiernan (BGE) to NRC Document Control Desk, dated July 5, 1988, "Response to NRC Bulletin 88-04: Potential Safety-Related Pump Loss"

This letter provides the information we agreed to provide you in the February 28, 2000 teleconference (Reference a). This information supports and/or clarifies the information provided in Reference (b).

Requested Information:

1. *Identify those Chapter 14 scenarios where sufficient safety-related loads would not normally be running to satisfy the minimum load requirement for Diesel Generator (DG) 1A (~ eight hours into the event).*

BGE Response:

To evaluate the Updated Final Safety Analysis Report Chapter 14 events, a number of judgments have to be made. Of the 25 operational occurrences, postulated events, and postulated occurrences described in Chapter 14 only six assume a loss of offsite power. Therefore, the evaluation focuses only on these six events. These events are loss of feedwater flow (14.6), loss of non-emergency AC (14.10), steam line break (14.14), large break loss of coolant accident (14.17), small break loss of coolant accident (14.17), feedline break (14.26). As shown in Figure 1, four of the events do not

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have sufficient safety-related loads without operator action. Note that the first three items on Figure 1 are not Chapter 14 events.

2. *Provide a list of the loads the operator could use to provide minimum load to DG 1A.*

BGE Response:

See Attachment (1) for a list of the safety-related loads the operator could use to meet the minimum load requirement.

3. *For loads that could be used, state why running these loads would not harm the equipment or worsen the plant response to the accident.*

BGE Response:

In response to Nuclear Regulatory Commission Bulletin 88-04 (Reference c), we evaluated the impact of operating our safety-related pumps in recirculation and determined the pump's miniflow design and the plant's operation and maintenance procedures are adequate to protect the pumps. Loads would be started using our existing plant procedures and the decision to use a given load will be made based on the scenario. The loads necessary to deal with the scenario will be loaded onto the bus first, and if load is still below the vendor's recommended load, additional loads will be evaluated and added to the engine as appropriate.

4. *Provide clarification that only safety-related loads are credited for accident analysis.*

BGE Response:

Only safety-related loads are credited for accident analysis and to determine if DG 1A is operable. This does not prohibit our operators from selecting non-safety-related loads if they are available to respond to an actual event. These actions are controlled by plant procedures.

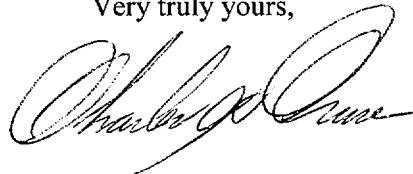
5. *What are the provisions for isolation between the safety-related bus and the non-safety-related loads connected to the bus?*

BGE Response:

The isolation devices that separate non-safety-related loads from the safety-related bus are safety-related breakers installed per Institute of Electrical and Electronic Engineers 384, 1974.

Should you have questions regarding this matter, we will be pleased to discuss them with you.

Very truly yours,



CHC/DJM/bjd

Attachment: (1) Safety-Related Load List Available for Diesel Generator 1A

cc:	R. S. Fleishman, Esquire	H. J. Miller, NRC
	J. E. Silberg, Esquire	Resident Inspector, NRC
	Director, Project Directorate I-1, NRC	R. I. McLean, DNR
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DIESEL 1A LONG-TERM LOADING

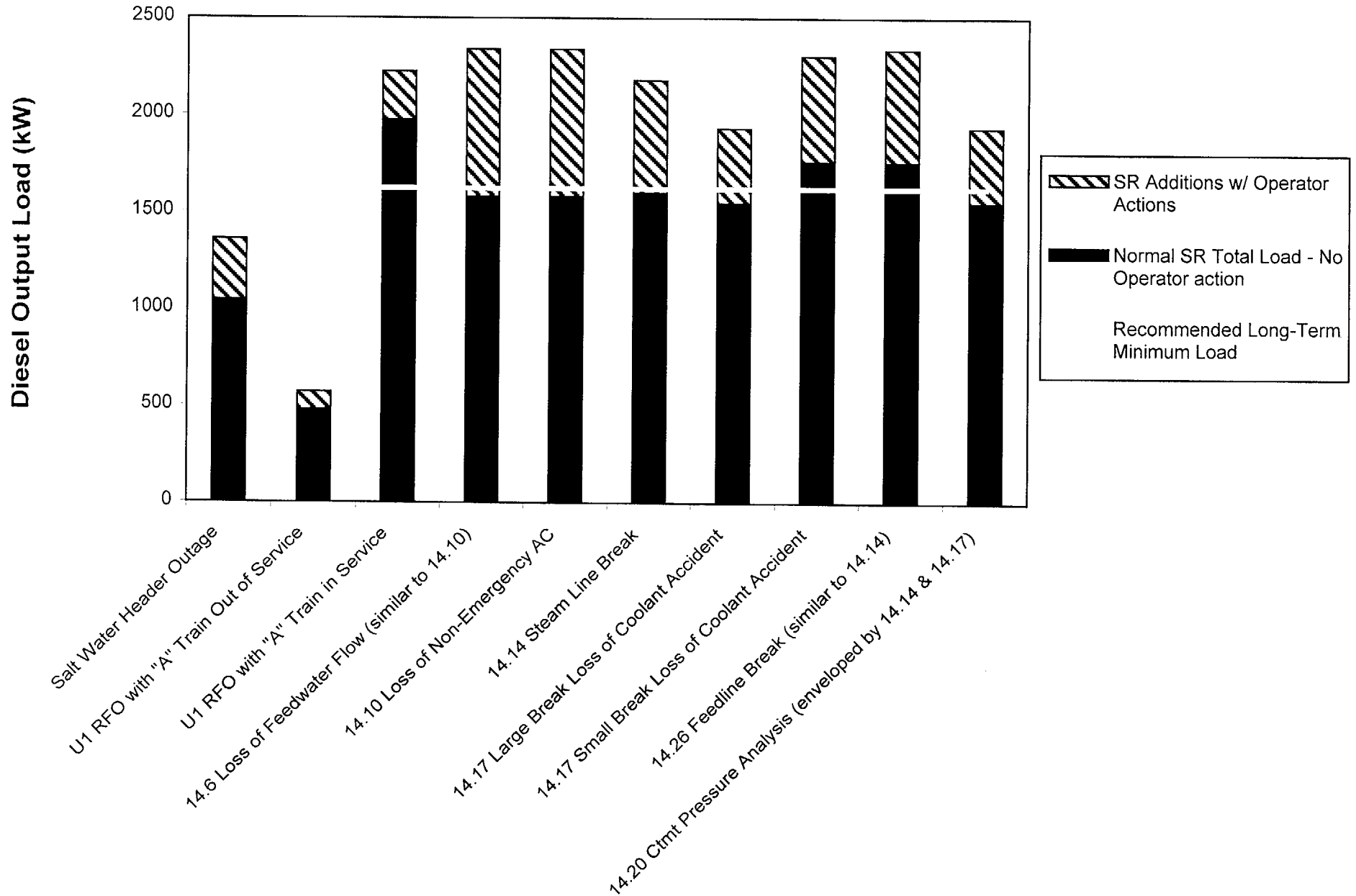


Figure 1

ATTACHMENT (1)

**SAFETY-RELATED LOAD LIST
AVAILABLE FOR DIESEL GENERATOR 1A**

OPS TURNOVER LOG BASIS FOR DIESEL 1A MINIMUM LOAD

Chapter 14 and Other Scenarios

Outdoor temperature 50 F to minimize load total. Columns total the kW for Safety Related equipment that can be operated long term for the scenario.

Load Data				14.20 Ctmt Pressure Analysis (enveloped by 14.14 & 14.17)					
Breaker Number	1.0 NSR Reliability & Load Factor		Load	Nameplate		Chapter 14 Single Failure: Diesel			Remarks
	No.	Load Description	Safety Class	NP HP	NP KVA	Approx KW	Running Total KW		
152-1105	13	Salt Water Pump alone (16,000 gpm, 410 bhp, 331 kW)	SR	450	-				
152-1112	11	Salt Water Pump alone (16,000 gpm, 400 bhp, 318 kW)	SR	450	-				
152-1105	13	Salt Water Pump alone (10,150 gpm, 345 bhp, 279 kW)	SR	450	-				
152-1112	11	Salt Water Pump alone (10,150 gpm, 340 bhp, 270 kW)	SR	450	-				
152-1109	11	Service Water Pump (5030 gpm = calc - 10%, 320 bhp, 254 kW)	SR	400	-				
152-1109	11	Service Water Pump (1700 gpm min, 240 bhp, 190 kW)	SR	400	-				
152-1111	13	Service Water Pump (2nd on same hdr, both @ 1700 gpm, 126 kW adder)	SR	400	-				
152-1116	13	AFW Pump (155 gpm recirc, 310 bhp, 248 kW)	SR	500	-				
152-1104	11	LPSI Pump (40 gpm min recirc flow, 191 bhp, 149 kW)	SR	400	-				
152-1104	11	LPSI Pump (1500 gpm RFO reduced inventory, 240 bhp, 187 kW)	SR	400	-				
152-1104	11	LPSI Pump (3000 gpm RFO full inventory, 330 bhp, 258 kW)	SR	400	-				
152-1108	11	HPSI Pump (50 gpm recirc, 190 bhp, 158 kW)	SR	400	-				
152-1110	13	HPSI Pump (must stay on B train due to piping/room)	SR	400	-				
52-1106	11	Component Cooling Pump (1000 gpm min flow, 130 bhp, 101 kW)	SR	150	-				
52-1116	13	Component Cooling Pump (backup)	SR	150	-				
52-1102	11	Ctmt Air Cooler (high speed 110,000 cfm normal density, 115 bhp, 92 kW)	SR	125	-				
52-1102	11	Ctmt Air Cooler (low speed normal density, 13.8 bhp, 13 kW)	SR	125	-				
52-1114	12	Ctmt Air Cooler (high speed 110,000 cfm normal density, 115 bhp, 92 kW)	SR	125	-				
52-1114	12	Ctmt Air Cooler (low speed normal density, 13.8 bhp, 13 kW)	SR	125	-				
152-1107	11	Ctmt Spray Pump (50-100 gpm recirc, 103 bhp, 86 kW, no RAS)	SR	200	-				
152-1107	11	Ctmt Spray Pump (1350 gpm recirc, 160 bhp, 130 kW, no RAS)	SR	200	-				
52-1122	11	Hydrogen Recombiner (75 kW)	SR	-	75				
52-1108	11	Control Rm A/C Compressor (cold winter, 10 kW)	SR	100	-				
52-1110	11	Switchgear Rm A/C Compressor (<50 F won't run)	SR	100	-				
52-11435	11	Control Room HVAC Unit Fan (41,500 cfm, 42 bhp, 36 kW)	SR	50	-				
52-12340	F-12	1A Electric Room Exhaust Fan	SR	40	-				
52-12351	F-10	1A Building Supply Fan	SR	40	-				
52-1115	11	Charging Pump (0-250 psia min RCS, no RAS, 37 bhp, 31 kW)	SR	100	-				
52-1104	13	Charging Pump (0-250 psia min RCS, no RAS, 37 bhp, 32 kW)	SR	100	-				
52-1111	11	Vital Battery Charger (many dc loads are NSR, use 6 kW)	SR	-	85				
52-1120	14	Vital Battery Charger (many dc loads are NSR, use 4 kW)	SR	-	85				
52-11465	11	Control Rm Return Air Fan (27.5 bhp from vendor data, 26 kW)	SR	30	-				
52-12317	1A1 11	1A Radiator Fan (21 kW)	SR	40	-				
52-12318	1A1 12	1A Radiator Fan (21 kW)	SR	40	-				
52-12319	1A1 13	1A Radiator Fan (21 kW)	SR	40	-				
52-12320	1A2 11	1A Radiator Fan (21 kW)	SR	40	-				
52-12321	1A2 12	1A Radiator Fan (21 kW)	SR	40	-				
52-12322	1A2 13	1A Radiator Fan (21 kW)	SR	40	-				
52-11403	11	Control Room Condenser Fan	SR	20	-				
52-11404	11	Salt Water Sys Air Compressor (18 kW)	SR	20	-				
52-12307	F-1	1A DG Room Vent Fan (18 kW)	SR	20	-				
52-12310	F-3	1A DG Room Vent Fan (18 kW)	SR	20	-				
52-12312	F-2	1A DG Room Vent Fan (18 kW)	SR	20	-				
52-12315	F-4	1A DG Room Vent Fan (18 kW)	SR	20	-				
52-12328	1D32	1A Battery Charger Feed (many dc loads are NSR, use 0 kW)	SR	-	44				
52-1105	11	Ctmt Iodine Filter Unit (20,000 cfm normal density, 16.5 bhp, 14 kW)	SR	75	-				
52-1121	13	Ctmt Iodine Filter Unit (20,000 cfm normal density, 16.5 bhp, 14 kW)	SR	75	-				
52-11436	11	Switchgear Rm HVAC Unit Fan (Wyle -5%, 14.55 bhp, 13 kW)	SR	20	-				
52-11450	11	Switchgear Rm Condenser Fan (<50 F won't run)	SR	10	-				
52-11406	11	Boric Acid Pump (40 gpm, 9 bhp lowest on curve, 8 kW)	SR	25	-				
52-12302	DH-4	1A Building Air Intake Heater	SR	-	70				
52-12331	1P23	1A Distribution Panel	SR	-	15				
52-11427	114	Dist Xfmr 480-208/120V	SR	-	15				
52-11402	11	Penetration Rm Exhaust Fan	SR	5	-				
52-11413	11	ECCS Pump Rm Exhaust Fan	SR	5	-				
152-1702	17	Load Center Feeder (transformer losses at no load, 4 kW)	SR	-	1000				
52-11448	11	ECCS Pump Rm Cooler	SR	4	-				
152-1114	11A	Load Center Feeder (transformer losses at no load, 3 kW)	SR	-	1000				
52-11447	11	Control Rm Filter Fan (3 kW)	SR	3	-				
52-12336	DH-3	1A 1E Switchgear Room Duct Heater	SR	-	30				
52-12338	DH-1	1A Battery Room Duct Heater	SR	-	30				
152-1102	11B	Load Center Feeder (transformer losses at no load, 2 kW)	SR	-	1000				
52-12337	DH-2	1A Control Room Duct Heater	SR	-	21				
52-11409	11A	Boric Acid Tank Heater (off after BAST empty)	SR	-	6.75				
52-11434	12A	Boric Acid Tank Heater (off after BAST empty)	SR	-	6.75				
52-12303	DH-6	1A Non 1E Electric Panel Room Duct Heater	SR	-	18				
52-12311	UH-19	1A Battery Room Unit Heater	SR	-	16				
52-11405		Battery Room Exhaust Fan	SR	1.5	-				
52-12325		1A Battery Room Exhaust Fan	SR	1.5	-				
52-11441	VU-18A	Service Water Heat Ex Rm Fan	SR	1.5	-				
52-11440	1C140	Hydrogen Analyzer Sample Pump (1.1 kW)	SR	1	-				
52-12314	ENG 1	1A Fuel Oil Feed Pump to Engine	SR	0.88	-				
52-12316	ENG 2	1A Fuel Oil Feed Pump to Engine	SR	0.88	-				
52-11412	11	AFW Pump Rm Vent Fan	SR	0.75	-				
		SR MARGIN TO SACM EDG 30% LOAD (1620 KW):							

NOTES: (1) Asterisk * indicates additional equipment that CAN be run to satisfy EDG min load requirement. (2) HVAC heaters are based on 10% diversity factor for <50 F.