

NRC Form 368  
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES 8/31/85

## LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Grand Gulf Nuclear Station - Unit 1										DOCKET NUMBER (2) 0 5 0 0 0 4 1 6 1				PAGE (3) OF 018										
TITLE (4) Inadequate Water Supply for Ultimate Heat Sink																								
EVENT DATE (5)			LER NUMBER (6)				REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)														
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES				DOCKET NUMBER(S)											
0	6	0	1	8	4	8	4	0	3	1	0	1	0	7	2	7	8	4					0 5 0 0 0	
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)																						
2		20.402(b)				20.405(e)				80.73(a)(2)(iv)				73.71(b)										
POWER LEVEL (10)		0 0 4				20.405(a)(1)(i)				80.73(a)(2)(v)				73.71(e)										
		20.405(a)(1)(ii)				80.73(a)(2)(vi)				OTHER (Specify in Abstract below and in Text, NRC Form 365A)														
		20.405(a)(1)(iii)				80.73(a)(2)(vii)(A)																		
		20.405(a)(1)(iv)				80.73(a)(2)(vii)(B)																		
		20.405(a)(1)(v)				80.73(a)(2)(viii)																		
LICENSEE CONTACT FOR THIS LER (12)																								
NAME Ronald W. Byrd/ Licensing Engineer										TELEPHONE NUMBER														
										AREA CODE 6 0 1 4 3 7 - 2 1 4 9														
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																								
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS														
SUPPLEMENTAL REPORT EXPECTED (14)										EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR										
YES (If yes, complete EXPECTED SUBMISSION DATE)										X NO														

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

Per the GGNS FSAR, the combined capacity of the SSW basins was determined adequate to provide sufficient cooling for at least 30 days without makeup, to mitigate the effects of an accident in one unit, and simultaneously permit safe shutdown of the other unit. As reported to the NRC in AECM-82/232, dated May 24, 1982, the minimum usable SSW basin water level was set at 107'0" as a result of a deficiency involving inadequate SSW System flow through some component loops due to higher than anticipated frictional pressure drops. Our architect engineer (Bechtel Power Corporation) recently determined that for operation of Unit 1 alone, the combined capacity of the two basins above elevation 107'0" is adequate to provide a 30 day inventory for post-LOCA operation. However, in the event of a LOCA coincident with a loss of offsite power and a single active failure (loss of a division), the ability to transfer water to the operating basin from the basin associated with the failed division is lost. Thus, operation of the ultimate heat sink (SSW) without external makeup would be reduced to less than 30 days which is contrary to FSAR Chapter 9. A 3-inch siphon line has been installed between SSW basins A and B to transfer the necessary quantity of water needed for the 30 day post-LOCA operation.

8408060193 840727  
PDR ADOCK 05000416  
S PDR

NRC Form 366A  
(9-83)

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/85

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
Grand Gulf Nuclear Station - Unit 1	0 5 0 0 0 4 1 6	8 4	— 0 3 1	— 0 1	0 2	OF	0 8

TEXT (If more space is required, use additional NRC Form 366A's) (17)

GGNS FSAR Section 9.2 states that the Standby Service Water (SSW) System is designed to provide a reliable source of cooling for plant auxiliaries that are essential to a safe reactor shutdown following a design-basis, loss-of-coolant accident (LOCA). Per the FSAR, the combined capacity of the SSW basins was determined adequate to provide sufficient cooling for at least 30 days without makeup, to mitigate the effects of an accident in one unit, and simultaneously permit safe shutdown of the other unit.

Mississippi Power & Light Company reported a deficiency in PRD-81/17 concerning a low flow rate in the SSW System due to higher than anticipated frictional pressure drops through some of the component loops. Long-term corrective action is to modify the Unit 1 SSW pumps during the first refueling outage. Interim measures include limiting the minimum post-accident draw-down level of the SSW basins to an elevation of 107'0". The originally established minimum level was 84'6".

Our architect engineer (Bechtel) recently determined (this information was provided in a letter to MP&L dated May 10, 1984) that for operation of Unit 1 alone, the combined capacity of the two basins above elevation 107'0" is adequate to provide a 30-day inventory for post-LOCA operation. However, in the event of a LOCA coincident with a loss of off-site power and a single active failure (loss of a division), the ability to transfer water to the operating basin from the basin associated with the failed division is lost. The level in the operating basin, considering evaporation and operation without makeup, would decrease to 107'0" in approximately 12 days. Operation below this level could result in an insufficient flow through the SSW loops that remove heat from plant components. The reduction in the heat transfer capability (cooling) could cause failure of the components to perform their intended safety function. A plant shutdown commenced on June 1, 1984 following plant notification to the NRC of the deficiency.

GGNS has now completed the installation of a siphon line between SSW basins A and B to transfer the necessary quantity of water needed for the 30-day post-LOCA operation. The siphon consists of a 3-inch pipe installed approximately 9 feet below grade, 7 feet below the normal minimum water level. The siphon inlet is located sufficiently above the basin floor to preclude collection of debris at the inlet. The siphon system is designed in a manner consistent with other portions of the SSW system as described in the FSAR. The siphon piping is designed in accordance with the ASME Code, Section III, Class 3, Seismic Category I. The piping outside the basin is buried to a depth sufficient for protection from tornado missiles and freezing. The modification to increase the capacity of the SSW pumps will be completed as stated in Paragraph C(28) of the facility operating license.

Attached is a synopsis of a combined MP&L, General Electric, and Bechtel design review which was conducted to identify any Unit 1 functions which are dependent on Unit 2 systems, equipment, or structures. This review was generated as a result of the FSAR analysis considering the ability to use the Unit 2 SSW pumps, which are nonoperational, to transfer water between the SSW basins under accident conditions. Based on the results of the review, the SSW dependency on nonoperational Unit 2 equipment is considered an isolated situation. The referenced documents and figures contained in the synopsis are available upon request.