

NRC Form 366
(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 0 0 0	PAGE (3) 1 OF 0 3
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TITLE (4) Manual Reactor Scram

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	2	7	8	5	8	5	0	2	4	0	0	0	7	2	9	8	5	NA	0 5 0 0 0 0 0 0

OPERATING MODE (9) 1		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)									
POWER LEVEL (10) 0 9 7	20.402(b)	20.405(c)	<input checked="" type="checkbox"/>	50.73(a)(2)(iv)	73.71(b)						
	20.405(a)(1)(i)	50.38(c)(1)		50.73(a)(2)(v)	73.71(c)						
	20.405(a)(1)(ii)	50.38(c)(2)		50.73(a)(2)(vii)	<input checked="" type="checkbox"/> OTHER (Specify in Abstract below and in Text, NRC Form 365A)						
	20.405(a)(1)(iii)	50.73(a)(2)(i)		50.73(a)(2)(viii)(A)	Special Report						
	20.405(a)(1)(iv)	50.73(a)(2)(ii)		50.73(a)(2)(viii)(B)							
20.405(a)(1)(v)	50.73(a)(2)(iii)		50.73(a)(2)(x)								

LICENSEE CONTACT FOR THIS LER (12)		TELEPHONE NUMBER	
NAME Angela H. Horton/Licensing Engineer		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
X	SIN	ILISM	21315	Y					

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO				

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

On June 27, 1985, the reactor was manually scrambled when the condensate pumps and condensate booster pumps tripped due to a low level in the condenser hotwell.

The Hi Hi level switch of number 5B feedwater heater failed causing the number 6A and 6B heater drain tank drains, MSR first stage heater drains A & B, MSR shell heater drains A & B and MSR separator drain tank drains A & B to isolate from the heater drain tank. The extraction steam to number 5B feedwater heater was also isolated. As a result of these isolation events, a decrease of drain flow to the heater drain tank caused the tank's level to decrease and its level control valves to close down in an attempt to maintain level. This resulted in a decrease in the heater drain flow pumped forward to the reactor feedpump suction. The condensate system attempted to compensate for this diminished flow; however, the resulting increase in demand resulted in a low intermediate condenser hotwell level which caused all three condensate pumps to trip on low level. The condensate booster pumps then tripped on low suction pressure.

Reactor Core Isolation Cooling (RCIC) was manually initiated. High Pressure Core Spray (HPCS) automatically injected when reactor level reached -41.6 inches. Accordingly, in addition to the reporting requirements of 10 CFR 50.73, this report is also submitted pursuant to action statement "h" of Technical Specification 3.5.1. There have been three total HPCS actuation cycles to date during reactor power generation.

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NRC Form 366A
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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 5	— 0 2 4	— 0 0	0 2	OF	0 3

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

Description of Reportable Occurrence

On June 27, 1985, at 0059 the reactor was manually scrammed when the condensate pumps tripped due to a low level in the condenser hotwell.

High Pressure Core Spray (HPCS) automatically injected when reactor water level reached -41.6 inches. Action statement "h" of Technical Specification 3.5.1 requires a Special Report when an ECCS system actuates and injects water into the vessel. Accordingly, in addition to the reporting requirements of 10 CFR 50.73, this report is also submitted pursuant that requirement. There have been three total HPCS actuation cycles to date during reactor power operation.

Initial Conditions

The plant was operating at approximately 97 percent reactor power.

Status of Redundant or Backup Systems

Not Applicable

Nature of Occurrence

As a result of the Hi Hi level switch of number 5B feedwater heater failing, the number 6A and 6B heater drain tank drains, MSR first stage heater drains A & B, MSR shell heater drains A & B and MSR separator drain tank drains A & B were isolated from the heater drain tank. In addition, the extraction steam to number 5B feedwater heater was isolated. These isolations resulted in a decrease of drain flow to the heater drain tank causing the tank's level to decrease and its level control valves to close down in an attempt to maintain level. This resulted in a decrease in the heater drain flow pumped forward to the reactor feedpump suction. The condensate system tried to compensate for this diminished flow; however, the resulting increase in demand on the condenser hotwell resulted in a low intermediate condenser hotwell level. All three condensate pumps then tripped on low level approximately 3 minutes after the feedwater heaters isolated. The condensate booster pumps then tripped on low suction pressure.

The operator, anticipating a low level scram, manually scrammed the reactor by placing the mode switch in shutdown, and manually tripped the turbine and the heater drain pumps. The reactor feedpumps tripped on low suction pressure. Reactor Core Isolation Cooling (RCIC) was manually initiated. High Pressure Core Spray (HPCS) automatically initiated on level 2 (-41.6 inches) reactor water level.

Immediate Corrective Actions Taken

The applicable off-normal event procedures were performed.

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

Apparent Cause

The failure of the Hi Hi level switch of the high pressure feedwater heater 5B is attributed to a binding micro-switch (MERCID 205NT-7810-C1-75) located inside the level switch. The small plunger internal to the micro-switch was binding on the internal contact which caused the switch to fail closed.

Supplemental Corrective Action

The switch was replaced and all level switches on feedwater heaters 5A and 5B were calibrated. As a result of several other identified feedwater heater operational problems, Nuclear Plant Engineering (NPE) is evaluating a range of corrective actions to make high pressure feedwater heater operations more reliable at higher power levels.

Safety Assessment

All ESF systems performed as required. This included actuation of the containment isolation system, the secondary containment isolation system, the drywell isolation system, the Control Room fresh air unit, the Division 3 Diesel Generator, HPCS, and the Standby Gas Treatment System (SGTS).

The reactor water level reached a minimum of -53 inches which is 114 inches above the top of the active fuel.



MISSISSIPPI POWER & LIGHT COMPANY

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July 29, 1985

NUCLEAR LICENSING & SAFETY DEPARTMENT

Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Gentlemen:

SUBJECT: Grand Gulf Nuclear Station
Unit 1
Docket No. 50-416
License No. NPF-29
File: 0260/L-835.0
Manual Reactor Scram
LER 85-024-0
AECM-85/0226

Attached is Licensee Event Report (LER) 85-024-0 which is a final report.

Yours truly,

L. F. Dale
Director

JRM/EBS/SHH:vog
Attachment

cc: Mr. J. B. Richard (w/a)
Mr. O. D. Kingsley, Jr. (w/a)
Mr. R. B. McGehee (w/a)
Mr. N. S. Reynolds (w/a)
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