

NRC Form 388
(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				PAGE (3) 1 OF 0 3								
TITLE (4) Inadvertent ESF Actuation While Shutdown																						
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 NA				DOCKET NUMBER(S) 0 5 0 0 0									
0	2	2	3	8	5	8	5	0	1	0	0	0	3	2	5	8	5	0	5	0	0	0
OPERATING MODE (9) 4		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)																				
POWER LEVEL (10) 0 0 1 0		20.402(b)				20.405(c)				<input checked="" type="checkbox"/> 50.73(a)(2)(iv)		73.71(b)										
		20.405(a)(1)(i)				50.36(c)(1)				<input type="checkbox"/> 50.73(a)(2)(v)		73.71(c)										
		20.405(a)(1)(ii)				50.36(c)(2)				<input type="checkbox"/> 50.73(a)(2)(vii)		OTHER (Specify in Abstract below and in Text, NRC Form 366A)										
		20.405(a)(1)(iii)				50.73(a)(2)(i)				<input type="checkbox"/> 50.73(a)(2)(viii)(A)												
		20.405(a)(1)(iv)				50.73(a)(2)(ii)				<input type="checkbox"/> 50.73(a)(2)(viii)(B)												
		20.405(a)(1)(v)				50.73(a)(2)(iii)				<input type="checkbox"/> 50.73(a)(2)(x)												
LICENSEE CONTACT FOR THIS LER (12)																						
NAME Ronald Byrd/Licensing Engineer										TELEPHONE NUMBER 6 0 1 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 NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS													
SUPPLEMENTAL REPORT EXPECTED (14)										EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR								
<input checked="" type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)												0	8	3								
<input type="checkbox"/> NO												1	8	5								

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

While placing a second Division 2 battery charger on equalize, the Division 2 inverter tripped on high voltage causing a loss of power to several reactor vessel level instruments. When the inverter automatically reset, a Division 2 ESF initiation occurred.

A relay powered from the inverter reenergized before level instruments, which failed low on the loss of power, could recover. The relay initiated ESF systems on a reactor low water level signal. A design enhancement is being pursued to prevent recurrence. Procedures will be revised to require only one charger to be placed in service when equalizing.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
Grand Gulf Nuclear Station - Unit 1	0 5 0 0 0 4 1 6	8 5	- 0 1 0	- 0 0	0 2	OF	0 3

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

Description of Reportable Occurrence

At 0918 on February 23, 1985, while placing the Division 2 battery chargers on an equalize charge, the Division 2 inverter tripped on high voltage causing a loss of power to several reactor vessel level instruments. When the inverter automatically reset and restored power, various Division 2 ESF systems actuated.

Initial Conditions

The plant was in Cold Shutdown.

Status of Redundant or Backup Systems

Not Applicable.

Nature of Occurrence

The Division 2 battery chargers were being placed on equalize to charge the battery banks in preparation for a battery discharge test. The chargers are adjusted by turning a potentiometer until a voltage of approximately 140 VDC is observed. One charger had been set at 140 VDC. While adjusting the second charger, the inverter tripped on a high voltage of 147 VDC, causing a loss of power to Division 2 reactor level instruments. The instruments fail low on a loss of power indicating a reactor low water level signal.

After the inverter tripped, technicians returned the equalizing voltage back to the normal float voltage of 132 VDC. The inverter automatically reset and restored power. A relay powered from the inverter energized before the level instrumentation could recover causing ESF systems to initiate on an erroneous reactor low water level signal.

The ESF initiations included the isolation of the Control Room Fresh Air Unit, the start of the 'B' Standby Gas Treatment System, an injection by Low Pressure Coolant Injection (LPCI) subsystems 'B' and 'C', the start of the Standby Service Water System, and a Division 2 isolation. The Division 2 Diesel Generator was out of service at the time.

Immediate Corrective Action

The LPCI injection was terminated in approximately 1 minute. The plant was returned to normal conditions within 30 minutes.

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Grand Gulf Nuclear Station - Unit 1

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Apparent Cause

The procedure requires the chargers' potentiometers to be turned completely down to minimum voltage prior to placing the chargers on equalize and allows for both chargers to be placed in service together. The first charger was placed on equalize and its output adjusted to 140 VDC in accordance with the procedure. In adjusting the second charger, a voltage increase greater than anticipated occurred which tripped the inverter.

Supplemental Corrective Action

A similar event was reported in LER 84-001. At that time, a design change request was initiated to lower the charger high voltage trip to 145 VDC, allowing the charger to trip prior to the inverter, thus preventing the loss of power. This alternative was determined not feasible and was not implemented.

A permanent design enhancement is being pursued to prevent inadvertent ESF initiations following the loss of power to the instruments. An update to this report will be submitted upon resolution of the problem.

The procedure will be revised to require only one charger to be used when equalizing to minimize the probability of recurrence.

Safety Assessment

There were no safety consequences as a result of the event. The inadvertent LPCI injection raised the vessel level from 83 inches to approximately 120 inches.



MISSISSIPPI POWER & LIGHT COMPANY

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March 25, 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
Inadvertent ESF Actuation While
Shutdown
LER 85-010-0
AECM-85/0097

Attached is Licensee Event Report (LER) 85-010-0 which is an interim report.

Yours truly,

L. F. Dale
Director

EBS/SHH:vog
Attachment

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