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)	DOCKET NUMBER (2)	PAGE (3)
Grand Gulf Nuclear Station - Unit 1	0 5 0 0 0 4 1 6	1 OF 0 3

TITLE (4)
Effects of Storm

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 5	0 7	8 4	8 4	0 2 8	0 0	0 6	0 6	8 4	NA	0 5 0 0 0
										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(c)	X 50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10) 0 0 0	20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
	20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	X OTHER (Specify in Abstract below and in Text, NRC Form 366A) Special Report
	20.405(a)(1)(iii)	X 50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
	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)

NAME	TELEPHONE NUMBER
Jerry L. Parker/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 NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	

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)

During a storm, arcing occurred across an open disconnect for a 500KV switchyard breaker. This caused a ground on the East 500KV switchyard bus resulting in a loss of power to it. The loss of power resulted in a RWCU isolation, auto start of the Division III diesel generator, and loss of both Reactor Recirc pumps. The "A" Recirc pump was restarted within 6 hours but the "B" Recirc pump could not be started due to problems with the Hydraulic Power Unit (HPU) for it's flow control valve. This required the plant to be shutdown. While restoring the Division III Diesel to standby it tripped on reverse power. A tornado watch then required starting all three diesel generators. While they were running, the Division II diesel tripped on reverse power due to voltage fluctuations on the power grid due to the storm and a too conservative reverse power trip setting. Additionally, all surveillances on Division I and III diesel generators required from Division II being declared inoperable were not completed within the 3 hours allowed by Technical Specifications.

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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 4	— 0 2 8	— 0 0	0 2 OF 0 3

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

On May 7, 1984, the plant was in the Startup mode with 0% power and a reactor coolant temperature of 107°F. One of the 500KV switchyard breakers was out of service with its disconnects locked open and the breaker grounded to remove static voltage. A storm was in progress. During the heavy wind and rain the locking mechanism for one of the disconnects broke loose allowing the balanced operating mechanism to turn in the wind and partially close the disconnect. At 2045 hours the disconnect surfaces were near enough to allow an arc to the grounded breaker. The arcing was sufficient to cause a sensed ground on the East 500KV switchyard bus resulting in a loss of power to it. This partial loss of switchyard power caused an isolation of RWCU, an auto start and loading of the Division III diesel generator, and a trip of both Reactor Recirc (RR) pumps. RWCU was restarted in 4 minutes.

The locking mechanism on the 500KV breaker which broke was found to have an initial crack as well as a missing bolt. An inspection was made of all similar locking mechanisms for such defects. The 500KV breaker was manufactured by Siemens Allis.

At 2107 hours, while paralleling the Division III diesel generator with the grid in order to restore the normal power lineup, it tripped on reverse power because the operator did not pick up the load on it fast enough. The "A" Reactor Recirc pump was restarted at 0240 hours, within the time limit allowed by Technical Specifications. The "B" Reactor Recirc pump could not be restarted due to problems with the Hydraulic Power Unit (HPU) for its flow control valve. The other subloop would not work correctly because the pressure gauge used to set the operating pressure had drifted such that the correct pressure was not being obtained. This inability to start the "B" Reactor Recirc pump eventually required the plant to be shutdown the next morning at 0835 hours in accordance with Technical Specification action statement 3.4.1.1.a.

At 2137 hours the site entered a tornado watch so all three diesel generators were started and loaded on their respective buses in parallel with the offsite grid. At 2307 hours the Division II diesel generator tripped on reverse power. The cause of the reverse power trip could not be determined immediately so the diesel generator was declared inoperable. It was later determined that the reverse power relay trip setting was too conservative (0.025 amps vice 0.150 amps). This low setpoint combined with the unstable grid voltage due to the electrical storm caused the reverse power trip.

With one diesel generator inoperable, Technical Specifications require that the surveillance test for starting be performed on the other two diesel generators within 3 hours. This was not completed for 3 hours and 43 minutes because of many other required actions being performed during the event. The surveillance procedure is much more involved and time consuming than is required by the Technical Specification action statement. A new procedure is being written to specifically address accomplishment of this diesel generator action statement. It will allow meeting the Technical Specification requirements in a timely manner.

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

In accordance with Regulatory Guide 1.108, both diesel generator trips are classified as non-valid failures. Both trips were reverse power trips while operating in parallel with the offsite grid with unstable grid voltage due to the electrical storm. The diesel generators are not normally ran in parallel with the grid, and the reverse power trip is automatically bypassed in the emergency operating mode. At the time of the event there were two valid failures in the last 100 valid tests and the surveillance test interval was not longer than 14 days. After the trips, the Division III diesel generator was returned to service immediately. The Division II diesel generator was returned to service in approximately 80 hours. This is a final report.

MISSISSIPPI POWER & LIGHT COMPANY
Helping Build Mississippi
P. O. BOX 1640, JACKSON, MISSISSIPPI 39205

June 6, 1984

NUCLEAR PRODUCTION 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-13
File: 0260/L-835.0
Effects of Storm
LER 84-028-0
AECM-84/0301

Attached is Licensee Event Report (LER) 84-028-0 which is a final report.

Yours truly,

L. F. Dale
Director of Nuclear Licensing & Safety

EBS/SHH:rg
Attachment

cc: Mr. J. B. Richard (w/a)
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Mr. N. S. Reynolds (w/o)
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