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 1 6	1 OF 0 3

TITLE (4)
Reactor Scram Due to Turbine Control Valve Fast Closure

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 8	0 6	8 7	8 7	0 1 2	0 0	0 9	0 3	8 7	N/A	0 5 0 0 0
										0 5 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)	1 0 0	20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
		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)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	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
Jewel Summers / Compliance Coordinator	AREA CODE 6 0 1 1 4 3 7 - 2 1 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)

On August 6, 1987 at approximately 0625, the reactor scrammed on a turbine control valve fast closure signal. The event was initiated by a backup protection scheme relay located in the switchyard control house. The relay is designed to open the generator output breakers only when the generator is off-line. An investigation revealed that moisture had collected in the terminal cabinets and apparently shorted an interlock switch which caused the relay to actuate and trip the two main generator output circuit breakers. This resulted in a turbine control valve fast closure scram initiation.

The Safety Relief Valve Low-Low set logic functioned properly to control reactor pressure, lifting valves B21-F051D, F051B, F047G, F051A, F047D, and F051F. Reactor pressure reached a maximum of 1107 psig.

Since the backup protection scheme relay is used only when the generator is off-line, it was removed from service and will remain out of service until the next refueling outage. At that time it will be thoroughly checked and any problems will be corrected as required. Plant restart was delayed due to unrelated problems described in LER 87-013-0. The plant reached criticality on August 9, 1987, at approximately 1324. Synchronization occurred on August 10, 1987, at approximately 1225.

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* U.S.GPO:1984-0-454-481/18750

NRC Form 366A (9-83)

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

A. REPORTABLE OCCURRENCE

On August 6, 1987 at approximately 0625, the reactor scrammed on a turbine control valve fast closure signal as a result of a main generator load rejection. This incident is reportable pursuant to 10CFR50.73(a)(2)(iv).

B. INITIAL CONDITION

At the time of the scram, the plant was operating at 100 percent power.

C. DESCRIPTION OF OCCURRENCE

On August 6, 1987 at approximately 0625, the reactor scrammed on a turbine control valve fast closure signal. The event was initiated by a backup protection scheme relay located in the switchyard control house. The relay is designed to actuate only when the generator is off-line. Heavy condensation inside the termination cabinet caused a current path from terminal to ground, shorting an interlock switch. The relay actuated and tripped the main generator output circuit breakers J5228 and J5232. This resulted in a turbine control valve fast closure scram initiation. Operators carried out the actions of the scram and turbine trip Off Normal Event Procedures and recovered the plant to stable conditions without the use of Emergency Core Cooling Systems (ECCS).

The Safety Relief Valve Low-Low set logic functioned properly to control reactor pressure, lifting valves B21-F051D, F051B, F047G, F051A, F047D and F051F. Reactor pressure reached a maximum of 1107 psig.

The termination cabinets located in the switchyard control house were inspected for moisture and dried, as required. In addition the doors to the cabinets were left open to allow for better temperature equalization to reduce condensation. Since the backup scheme protection relay is used only when the generator is off-line, it was removed from service and will remain out of service until the next refueling outage. At that time it will be thoroughly checked and problems will be corrected as required.

D. APPARENT CAUSE

The reactor scram was caused by an automatic initiation due to the fast closure of the main turbine control valves.

The main generator trip was initiated due to an actuation of a backup scheme protection relay located in the switchyard control house. Investigation revealed that moisture had collected in the terminal cabinets and apparently shorted an interlock switch which caused the relay actuation.

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

Other reactor scrams due to generator "load rejects" are described in LERs 86-003-01 and 86-038-00. However, the root causes of those reported events were not of the same nature.

E. SUPPLEMENT CORRECTIVE ACTIONS

On August 14, 1987 a meeting was held between Mississippi Power and Light (MP&L) and Systems Energy Resources, Inc. (SERI) representatives to discuss the performance and reliability of off-site power supplies.

It was mutually agreed upon that MP&L will take actions to improve switchyard equipment reliability. Immediate actions include modifying or removing termination cabinet doors to allow for better temperature equalization, thus reducing condensation and revising inspection rounds to include termination cabinets. Other actions scheduled to be completed during the second refueling outage include resealing cable penetrations in the base of termination cabinets and redirecting gutter drains away from cable troughs adjacent to the relay house.

F. SAFETY ASSESSMENT

All scram trip channels which should have tripped both before and after the scram did trip. Reactor pressure reached a maximum of 1107 psig with water levels at a minimum of 168 inches above top of active fuel. The plant did not have to rely on any of the ECCS to maintain reactor water level. Plant Operations were not affected when the backup scheme lockout relays were removed from service. Conditions which required automatic actuation during the event were per design; therefore, no safety consequences existed.

SYSTEM ENERGY RESOURCES, INC.

OLIVER D. KINGSLEY, JR.
Vice President
Nuclear Operations

September 3, 1987

U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Document Control Desk

Gentlemen:

SUBJECT: Grand Gulf Nuclear Station
Unit 1
Docket No. 50-416
License No. NPF-29
Reactor Scram Due to
Turbine Control Valve
Fast Closure
LER 87-012-00
AECM-87/0173

Attached is Licensee Event Report (LER) 87-012-00 which is a final report.

Yours truly,

ODK:baa
Attachment

cc: Mr. T. H. Cloninger (w/a)
Mr. R. B. McGehee (w/a)
Mr. N. S. Reynolds (w/a)
Mr. H. L. Thomas (w/o)
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