

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)
Grand Gulf Nuclear Station - Unit 1

DUCKET NUMBER (2)
0 5 0 0 0 4 1 6

PAGE (3)
1 OF 04

TITLE (4)
Inadvertent RHR Pump Start Due to Personnel Error

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)
03	17	88	88	011	00	04	15	88	NA		05000
											05000

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)

OPERATING MODE (9)	20.402(b)	20.405(c)	<input checked="" type="checkbox"/>	60.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10)	20.405(a)(1)(i)	60.30(e)(1)		60.73(a)(2)(v)	73.71(c)
	20.405(v)(1)(B)	60.34(e)(2)		60.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 365A)
	20.405(a)(1)(iii)	60.73(a)(2)(i)		60.73(a)(2)(viii)(A)	
	20.405(a)(1)(iv)	60.73(a)(2)(ii)		60.73(a)(2)(viii)(B)	
	20.405(a)(1)(v)	60.73(a)(2)(iii)		60.73(a)(2)(ix)	

LICENSEE CONTACT FOR THIS LER (12)

NAME: Ronald Byrd/Licensing Engineer

TELEPHONE NUMBER: 601 437-2149

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE) NO

EXPECTED SUBMISSION DATE (15)

MONTH	DAY	YEAR

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

On March 17, 1988 electricians were conducting the monthly functional test of the Residual Heat Removal (RHR) pump B start time delay relay. The surveillance procedure requires the electrician to energize the time delay relay to verify that the relay is functioning properly. Energizing the time delay relay starts the RHR pump. The procedure prevents the pump from starting by requiring the electrician to manually trip the pump breaker lockout relay before energizing the time delay relay. The electrician performing this step tripped the lockout relay for RHR Pump C rather than for RHR Pump B. When the time delay relay for RHR B was energized during the subsequent procedure steps, RHR pump B started because its lock-out relay had not been tripped.

The breaker cubicles for RHR B and RHR C are located close together since both are on the division 2 bus. The electrician had mentally transposed the breaker numbers listed in the procedure instructions and did not recognize this error at the breaker panel because the labels for RHR pump C002B-B and RHR pump C002C-B were extremely similar. Corrective actions include procedural enhancements, improved labeling, and retraining of appropriate personnel.

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TEXT (if more space is required, use additional NRC Form 365A's) (17)

A. REPORTABLE OCCURRENCE

On March 17, 1988 at 1355 Residual Heat Removal (RHR) pump B started during the monthly functional test of the pump start time delay relay. The pump start is reported as an ESF actuation pursuant to 10CFR50.73(a)(2)(iv).

B. INITIAL CONDITIONS

The plant was operating at 71 percent power.

C. DESCRIPTION OF OCCURRENCE

On March 17, 1988 electricians were conducting the monthly functional test of the RHR pump B start time delay relay (EIS code: GG-1B0-2-K70B). This relay provides a time delay, for diesel generator loading concerns, of 5 seconds from automatic or manual actuation until the RHR pump breaker closes. The surveillance procedure requires the electrician to energize the time delay relay to verify that the relay is functioning properly. Energizing the time delay relay starts the RHR Pump. However, the procedure prevents the pump from starting by requiring the electrician to manually trip the pump breaker lockout relay before energizing the time delay relay.

The procedure, which is written to be used for both RHR A and RHR B, instructed the electrician as follows:

"To inhibit auto start of RHR pump 1E12-C002A (1E12-C002B) during performance of this functional test, momentarily jumper from terminals 9 to 10 of Ground Overcurrent Relay at Pump Breaker 152-1509 (152-1606) at Bus 15AA (16AB) and observe that the lockout relay at Breaker 152-1509 (152-1606) trips."

The electrician studied these instructions and proceeded to Bus 16AB with breakers 152-1509 and 152-1606 in mind. The electrician arrived at the bus panel and, mentally transposing the breaker numbers, observed breaker 152-1609 which he believed to be the correct breaker. He then read the breaker cubicle label "RHR pump 1E12C002C-B", which was for RHR pump C. The electrician believed he was at the correct breaker for pump B and proceeded to jumper terminals 9 to 10 of breaker 152-1609. When the time delay relay for RHR pump B was energized during the subsequent procedure steps, RHR pump B started and discharged flow back to the suppression pool. RHR B and RHR C subsystems were returned to standby by 1400 on March 17.

NRC Form 368A (9-83)		LICENSEE EVENT REPORT (LER) TEXT CONTINUATION			U.S. NUCLEAR REGULATORY COMMISSION		
					APPROVED OMB NO. 3150-0104 EXPIRES: 9/31/88		
FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
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TEXT (If more space is required, use additional NRC Form 368A's) (17)							
<p>D. APPARENT CAUSE</p> <p>The event was reviewed by the plant management incident review board and received an evaluation using the Human Performance Evaluation System (HPES). The following contributing factors were identified:</p> <ul style="list-style-type: none"> o The procedure did not require independent verification of the lockout relay trip. o The instructions for testing RHR pumps A and B are contained in one procedure. The numeric designators for the breakers for RHR pumps A and B are given sequentially in the procedure instructions. This contributed to the mental transposition the electrician made when he went to breaker 152-1609. o The electrician worked from the instruction section of the procedure and did not take the data sheets to the breaker. The data sheets are separated by RHR train and provide information which is clearer and more easily understood. o The similarity in the RHR B and C pump designators contributed to the subsequent tripping of the wrong lockout relay. RHR trains B and C are powered from the same divisional bus. The associated pump breakers are located close together and the Division 2 coded labeling for the breakers is similar (i.e. E12-C002B-B and E12-C002C-B). <p>E. SUPPLEMENTAL CORRECTIVE ACTIONS</p> <p>The following corrective actions were or are being taken:</p> <ul style="list-style-type: none"> o The monthly functional test procedure will be changed by April 29, 1988 to require independent verification of the breaker lockout relay trip. The surveillance program already requires independent verification to ensure that safety related equipment is properly returned to service if functional testing cannot be performed. The need and extent of verification for all surveillance steps that block or de-activate safety equipment is also being evaluated. This evaluation will be completed by June 30, 1988. o The monthly functional test procedure instructions will also be changed to clearly separate the instruction steps to be performed for RHR A and those to be performed for RHR B. This change will be implemented by April 29, 1988. The feasibility and benefits of separating similar surveillance instructions are being evaluated. This evaluation will be completed by June 30, 1988. 							

NRC Form 365A
(9-83)

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

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TEXT (If more space is required, use additional NRC Form 365A's) (17)

- o Large labels were placed on the breaker cubicles clearly identifying the pump breakers as "RHR A", "RHR B" and "RHR C". A review of 4160 volt ESF switchgear cubicles determined that other similar components were adequately labeled and easily discernable.
- o Maintenance electricians, Instrument and Control technicians, and Operations personnel were briefed on the incident by their respective superintendents. The briefings were completed prior to the subsequent surveillance on RHR B which was successfully performed on April 13, 1988. This LER will be included in retraining for appropriate Maintenance and Operations personnel.
- o The electrician was reprimanded.

An appropriate schedule will be developed to implement any further corrective actions deemed to be beneficial and feasible.

F. SAFETY ASSESSMENT

If a valid ECCS initiation signal had been received during this incident, all ECCS systems would have performed as designed except for RHR C. The RHR C pump lockout relay was tripped for approximately 15 minutes rather than the intended RHR B breaker. Because of system redundancy, no adverse consequences would have resulted from RHR C being locked out. No technical specification action statement was exceeded.

This incident resulted in the automatic start of the RHR B pump and associated SSW B subsystem, but did not actuate the RHR B system initiation logic, which would have operated valves necessary for vessel injection.



OLIVER D. KINGSLEY, JR.
Vice President
Nuclear Operations

April 15, 1988

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
Inadvertent RHR Pump Start Due
to Personnel Error
LER 88-011-00
AECM-88/0084

Attached is Licensee Event Report (LER) 88-011-00 which is a final report.

The determination of reportability of this event is complex in nature. The Residual Heat Removal (RHR) pump start was not caused by an actuation of ESF protection logic. NUREG-1022 does not provide specific guidance concerning this type of event or a definition of ESF protection logic which can be used to consistently make a determination of reportability.

System Energy Resources, Inc. (SERI) has made a conservative determination that this event is reportable. Because the criteria for determining reportability in events of this type are subject to interpretation, SERI requests that the NRC provide clarification for reportability of events where ESF equipment is actuated by means other than ESF actuation logic.

This clarification will prove helpful when determining the reportability of future events of this type.

Yours truly,

ODK:bms
Attachment

cc: (See Next Page)

JE22
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