



Entergy Operations, Inc.
River Bend Station
PO Box 220
St. Francisville, LA 70775

July 5, 1994

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

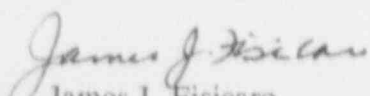
Subject: River Bend Station - Unit 1
Docket No. 50-458
License No. NPF-47
Licensee Event Report 50-458/94-013-00
File Nos.: G9.5, G9.25.1.3

RBG-40696

Gentlemen:

In accordance with 10CFR50.73, enclosed is a Licensee Event Report.

Very truly yours,


James J. Fisicaro
Director - Nuclear Safety

JJF/mkb
enclosure

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Licensee Event Report 94-013-00

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cc: U.S. Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 400
Arlington, TX 76011

NRC Sr. Resident Inspector
P.O. Box 1051
St. Francisville, LA 70775

INPO Records Center
700 Galleria Parkway
Atlanta, GA 30339-3064

Mr. C.R. Oberg
Public Utility Commission of Texas
7800 Shoal Creek Blvd., Suite 400 North
Austin, TX 78757

Louisiana Department of Environmental Quality
Radiation Protection Division
P.O. Box 82135
Baton Rouge, LA 70884-2135
ATTN: Administrator

NRC FORM 366 (5-92)		U.S. NUCLEAR REGULATORY COMMISSION			APPROVED BY OMB NO. 3150-0104 EXPIRES 6/31/95		
LICENSEE EVENT REPORT (LER)					ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.		
FACILITY NAME (1) River Bend Station					DOCKET NUMBER (2) 05000-458		PAGE (3) 1 of 5
TITLE (4) DIVISION III DIESEL GENERATOR START MOST LIKELY 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
06	02	94	94	013	00	07	05
							FACILITY NAME N/A
							DOCKET NUMBER 05000
							FACILITY NAME N/A
							DOCKET NUMBER 05000
OPERATING MODE (9)		5	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5 (Check one or more (11))				
POWER LEVEL (10)		0	20.402(b)		20.405(c)		50.73(a)(2)(iv)
			20.405(a)(1)(i)		50.36(c)(1)		50.73(a)(2)(v)
			20.405(a)(1)(ii)		50.36(c)(2)		50.73(a)(2)(vii)
			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)(ix)
LICENSEE CONTACT FOR THIS LER (12)							
NAME T.W. Gates, Supervisor - Nuclear Licensing					TELEPHONE NUMBER (Include Area Code) 504-381-4866		
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)							
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT
SUPPLEMENTAL REPORT EXPECTED (14)					EXPECTED SUBMISSION DATE (15)		
YES (If yes, complete EXPECTED SUBMISSION DATE)		X		NO			
ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single spaced typewritten lines) (16) At 0820 on June 2, 1994 with the unit in Operational Condition 5 (Refueling), a Division III Emergency Core Cooling System (ECCS) surveillance was being performed. Shortly after a continuity check had been performed across two LOCA relay contacts in the ECCS circuitry, the normal power supply breaker to the High Pressure Core Spray (HPCS) 4160 volt bus tripped. This condition led to an automatic start and load of the Division III diesel generator. The cause of the normal supply breaker trip and the resulting start of the Division III diesel generator cannot be positively determined. However, given that no physical condition could be identified which could have caused the event and that the event could be replicated by shorting adjacent contacts, personnel error during the performance of the surveillance is the most probable root cause of this ESF actuation. Corrective action for this event include the formation of a multi-discipline team to evaluate maintenance practices and processes with a goal of reducing inadvertent ESF actuations during maintenance. Since the diesel generator responded properly to the unplanned start signal, this event was of no safety significance. Similar LERs include 93-017 and 93-018.							

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		FACILITY NAME (1) River Bend Station	DOCKET NUMBER (2) 05000-458

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

REPORTED CONDITION

At 0820 on June 2, 1994 with the unit in Operational Condition 5 (Refueling), a Division III ECCS surveillance was being performed. During the performance of the surveillance, the normal power supply breaker (*BKR*) to the HPCS (*BJ*) 4160 volt bus (*BU*) tripped. This condition resulted in an automatic start and load of the Division III diesel generator (*DG*). This event is reportable pursuant to 10CFR50.73(a)(2)(iv) since it represents an actuation of an ESF.

INVESTIGATION

On June 2, 1994, STP 309-0603, "Division III 18 Month ECCS Test," was in progress. As directed in the procedure, two I&C technicians were dispatched to the Diesel Generator Building to verify that no continuity existed across two LOCA relay (*2*) contacts in the ECCS circuitry. After the I&C technicians had verified the absence of continuity and were closing the access door to the electrical panel, they heard the Division III diesel generator start. They reported this condition to the control room and estimated that the diesel start occurred a few seconds after they tested the terminals.

An investigation revealed that the normal supply breaker to the Division III 4160 volt switchgear (*SWGR*) had tripped causing the Division III diesel generator to start as expected. Following the trip of the supply breaker, plant equipment functioned as designed.

Possible plant conditions or procedural deficiencies that could have caused this trip were investigated as follows:

- 1) The test sequence and terminal points specified in the STP were investigated and compared to both the elementary diagrams and the panel wiring diagrams to ensure procedural deficiencies did not exist. No discrepancies were noted.
- 2) The potential for a valid degraded voltage condition on the bus was investigated. The Emergency Response Information System data indicated that bus voltage was stable before the breaker tripped. Potential transformer voltages and system fuses were also checked and found to be satisfactory.
- 3) The voltages at the terminal board were checked to ensure proper polarities and to provide assurance that the actual field wiring matched the design documents. No discrepancies were noted.

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- 4) An attempt was made to recreate the event. The Division III diesel generator and related equipment were restored to the original test configuration, and the two contacts identified in the STP were checked again. The contacts were successfully checked with no unexpected results.

A detailed review of the design drawings indicated that if the wrong terminal points had been verified (i.e., the two terminal points located adjacent to the terminal points identified in the STP) there would have been a path from positive to negative through the multimeter being used to perform the continuity check. A discussion about this possibility was held with the I&C technicians involved and both indicated that they were on the correct terminal points.

The design review did not resolve two pertinent questions. First, it was not conclusive from the drawing review if sufficient current could be passed by the multimeter to pick up the 27NY relay (*27*) which would have caused the trip of the normal supply breaker if the adjacent (i.e., wrong) terminal points were shorted. Second, it was not clear what the technicians would have seen if they had checked the wrong terminals, e.g., arcing at the meter probes, deflection of the meter indication upon passing current, etc. No sparks or damage to the meter was noted at the time this event occurred. In any case, a maintenance work order was initiated in an attempt to recreate the event.

With the diesel in maintenance mode and a lead lifted at the switchgear to prevent tripping of the normal supply breaker, the terminals adjacent to those specified in the STP were jumpered using the same multimeter. The 27NY relay picked up solidly which would have caused a trip of the normal supply breaker if not for the lifted lead. Additionally, there was no sparking at the meter leads and only a slight deflection of the meter indication. The results of this test generally replicated what had happened the day before during the performance of STP 309-0603. Based on these test results, it is reasonable to assume that the wrong terminals were mistakenly checked or that the wrong terminals were inadvertently shorted during the performance of the STP.

ROOT CAUSE

The cause of the normal supply breaker trip and the resulting start of the Division III diesel generator cannot be positively determined. However, given that no physical condition could be identified which could have caused the event and that the event could be replicated by shorting the adjacent terminals, personnel error is the most probable root cause of this ESF actuation.

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Recent LERs were reviewed to identify similar events that involved personnel errors during the performance of surveillances. LER 93-017 documents a reactor scram when a technician caused a short while disconnecting test equipment. LER 93-018 documents a Reactor Core Isolation Cooling (RCIC) isolation due to a technician connecting test equipment to the wrong terminals. The corrective actions for LER 93-017 included re-emphasizing management policies and expectations. The corrective actions for LER 93-018 included a specific STP revision and a proposed modification to the RCIC system. While these corrective actions have targeted specific areas, they have not satisfied the human performance expectations of plant management.

CORRECTIVE ACTION

The efforts to address ESF actuations at RBS contain the following elements:

- Before refueling outage 5 (RF-5), RBS performed a risk evaluation to study ESFs involving losses of shutdown cooling. This effort has contributed to limiting the challenges to shutdown cooling during RF-5.
- During the course of RF-5, RBS initiated a limited study to review other types of outage-related ESF actuations that occurred during previous refueling outages. This study compared ESF actuations occurring in previous outages with those that had occurred in RF-5 through June 2, 1994. Engineered safety feature actuations for RF-5 included in this study are documented in LERs 94-007, 94-011, 94-013 and 94-014. The objective of this review was to identify commonalities between RF-5 events and previous events. Recommendations to reduce the potential for future outage-related ESF actuations were developed.
- The scope of this review will be expanded to include ESF actuations occurring during operating conditions as well as outage-related ESF actuations. This evaluation will be completed by October 31, 1994.
- Plant maintenance is establishing a multi-discipline team to evaluate practices and processes which will apply to all surveillances and maintenance work. The goal of this team will be to identify improvements to reduce testing errors and thus, ESF actuations. Improvements in the area of work practices, testing methods, and plant testability will be considered. In addition, this team will establish an improved process for providing test jacks on terminals to facilitate periodic testing.

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SAFETY ASSESSMENT

The unit was in a refueling outage at the time of this event with vessel water level greater than 23 feet above the reactor vessel flange, thus no ECCS systems were required to be operable per Technical Specifications. The HPCS system and the Division III diesel generator had been declared inoperable before this event for the scheduled testing. The diesel generator responded properly to the start signal and was manually secured by the operator.

NOTE: Energy Industry Identification System Codes are identified in the text as (*XX*).