



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

June 14, 1994

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

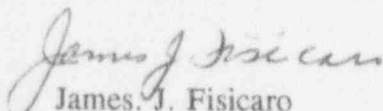
SUBJECT: River Bend Station - Unit 1
Docket No. 50-458
License No. NPF-47
Licensee Event Report 50-458/94-011-00
File Nos.: G9.5, G9.25.1.3

RBG - 40653

Gentlemen:

In accordance with 10CFR50.73(a)(2)(i)(B), enclosed is the subject report.

Very truly yours,


James J. Fisicaro
Director-Nuclear Safety

JJF/DH/jr
enclosure

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cc: U.S. Nuclear Regulatory Commission
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Louisiana Department of Environmental Quality
Radiation Protection Division
P.O. Box 82135
Baton Rouge, LA 70884-2135
ATTN: Administrator

<h2 style="margin:0;">LICENSEE EVENT REPORT (LER)</h2>	ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 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.
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TITLE (4)
Inadvertent Initiation of the Standby Service Water System Due to Procedural Ambiguity

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 NAME	DOCKET NUMBER
05	15	94	94	011	00	06	14	94	N/A	05000
									N/A	05000

OPERATING MODE (9)	5	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more (11))								
		20.402(b)	20.405(c)	<input checked="" type="checkbox"/>	50.73(a)(2)(iv)	73.71(b)				
POWER LEVEL (10)	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)	OTHER				
		20.405(a)(1)(iii)	50.73(a)(2)(i)		50.73(a)(2)(viii)(A)	(Specify in abstract below and in text, NRC Form 366A)				
		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 T.W. Gates, Supervisor - Nuclear Licensing	TELEPHONE NUMBER (Include Area Code) (504) 381-4866
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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)

<input type="checkbox"/> YES <small>(If yes, complete EXPECTED SUBMISSION DATE)</small>	<input checked="" type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
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ABSTRACT [Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines] (16)

On May 15, 1994, at approximately 0140, with the plant in Operational Condition 5 (Refueling), an inadvertent initiation of the division I standby service water (SSW) system occurred during division II SSW in-service testing. Operations personnel restored the plant and notified the NRC pursuant to 10CFR50.72(b)(2)(ii) of the actuation of this ESF. The division II SSW system was inoperable for the performance of in-service testing. Therefore, the realignment of the system did not result in the loss of a required safety related system. The division I SSW system functioned as designed.

The root cause of this event was an ambiguous procedure. Based on a note and the direction provided in one of the steps, the test crew interpreted the procedure to mean that a division II SSW pump did not need to be running until after the division II supply header manual isolation valve was closed. When the valve was closed, a low pressure condition was created which initiated the division I SSW system. As corrective action, the procedure has been revised to improve the sequence of operator actions and eliminate ambiguity.

NRC FORM 366A (5-92)	U.S. NUCLEAR REGULATORY COMMISSION	APPROVED BY OMB NO. 3150-0104 EXPIRES 5/31/95		
LICENSEE EVENT REPORT (LER) TEXT CONTINUATION		<small>ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 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</small>		
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TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

Reported Condition

On May 15, 1994, at approximately 0140, with the plant in Operational Condition 5 (Refueling), an inadvertent initiation of the division I standby service water (SSW) (*BS*) system occurred during surveillance testing. The initiation occurred in response to a low pressure signal. The division I standby service water (SSW) system isolated from the normal (non-safety related) service water system (*KE*) and standby service water pumps (*P*) 2A and 2C started. This event is reportable pursuant to 10CFR50.73(a)(2)(iv) as an actuation of an engineered safety feature (ESF).

Investigation

The surveillance test to be performed was the division II SSW valve operability test, a part of the in-service testing (IST) for the SSW system. This test is used to verify the operability of the division II SSW motor operated valves, and several safety related check valves. The portion of the test to be performed was for the inlet isolation section between division II SSW and the normal service water system. This test had been previously performed during the day shift.

In preparation for the test, the lead test performer discussed the test with the control room supervisor. The review of the procedure included review of the piping and instrumentation drawings. Both the lead test performer and the control room supervisor verified that the system configuration had not changed since the last test attempt on the day shift was completed. The division II SSW pumps were in lockout and the SSW test switches were in the normal position.

In accordance with the test procedure, the manual isolation valve for the division II SSW supply header was closed. At approximately 0149, while the manual isolation valve was being closed, a low pressure signal was received by standby service water division II. As a result the division II SSW supply and return isolation valves (*20*) (1SWP*MOV96B and 1SWP*MOV57B, respectively) stroked closed and the division II SSW standby cooling tower return valve (*20*) (1SWP*MOV55B) stroked open. These valve realignments created a flow path between the normal service water system and the standby cooling tower (*CTW*). This resulted in draining of the normal service water surge tank (*TK*) (1SWP-TK3) to the standby cooling tower. The normal service water pump that was running then tripped due to low surge tank level. The trip of the normal service water pump provided a low pressure initiation signal to the division I SSW system, which resulted in the start of SSW pumps 2A and 2C. In addition, the division I control building ventilation system tripped in response to the low service water flow condition. The operating crew implemented the appropriate procedures to restore the affected systems.

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An operations accountability review revealed that both the day and night shift test crews interpreted the surveillance test procedure (STP-256-3302) to mean that the SSW pumps do not need to be running prior to closing the manual isolation valve. The interpretation was based on the following:

- A note in the STP, located before step 7.18.1 stated, "If STP-309-0602 (*the division II ECCS test STP - not performed during this evolution*) will not be performed, both divisions of standby service water system shall be lined up for manual operation per SOP-0042." The procedure, SOP-0042, is the system operating procedure for the SSW system. The operators concluded that SOP-0042 established the appropriate valve lineup for the performance of the test prior to the start of the test and hence, prior to the start of the pumps required later in the STP at step 7.18.12.
- Step 7.18.1 in the STP requires closing of the manual isolation valve.
- Step 7.18.12 in the STP stated, "Start a division II standby service water pump (if not already running)." The operators concluded that this statement required them to start the pump at this point in the procedure, which was after the step directing closure of the manual isolation valve.

The intent of the STP was to start a SSW pump prior to closing the manual isolation valve. Procedure SOP-0042 should have been used to start a pump and properly align the system valves to separate division II SSW from the normal service water system. This would be followed by closing the manual isolation valve. Step 7.18.12 should have required the operators to verify that a division II SSW pump was running, not start one. If the SSW pump had been running, the division II low pressure signal would not have been initiated, and the actuation of the ESF would have been avoided.

Both test crews thoroughly reviewed the test procedure and discussed it in detail with the control room supervisors and other control room personnel. The day shift crew placed the division II SSW pumps in lockout and the division II SSW test switches in the test position as precautions against an inadvertent ESF actuation. During shift turnover, placing the division II SSW pumps in lockout was discussed and this configuration was maintained; however, the information concerning placing the test switches in the test position was not effectively communicated. Placing the test switches in the test position is in the procedure at step 7.18.11; however, for the event to have been prevented, this step would have to be taken prior to closure of the manual isolation valve (step 7.18.1).

The note in this procedure requiring that the SSW system be lined up for manual operation per SOP-0042 is not consistent with recent guidance for procedure development at River Bend Station. The Procedure Writer's Guide, issued on April 28, 1994, explicitly states that notes shall not contain action statements.

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Root Cause

The root cause of this event was an ambiguous procedure. The test crew interpreted the procedure to mean that an SSW pump did not need to be running until after the manual isolation valve was closed.

A review of previous LERs for the period of 1992 to May 15, 1994 revealed that LERs 93-007, 93-010, 93-016, and 94-007 reported ESF actuations with procedural deficiencies indicated among the causal factors in the events. None of these events involved either the SSW system or the STP described in LER 94-011.

Previous LERs involving SSW initiations due to low pressure are LER 87-031 and LER 89-045. Procedures were revised as a result of these events; however, during the fourth refueling outage in 1992, the SSW system was modified from an open system to a closed loop system. The system design was extensively modified and is not as sensitive to transients in the normal service water system. Therefore, the similarity of the previous events to LER 94-011 is limited.

Corrective Action

- The surveillance procedure, STP-256-3302, has been revised, as follows:
 - The note has been changed to a step that requires placing the SSW system in manual operation per SOP-0042.
 - The step requiring the SSW test switch in the test position has been relocated prior to the step requiring closure of the manual isolation valve.
 - Step 7.18.12 has been changed to require operations to verify that a division II SSW pump is running. The direction to start a pump has been deleted.
- Briefings concerning this event and lessons learned are being provided for all operating crews. These briefings will be completed by June 30, 1994.

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Entergy Operations, Inc. is initiating an interim action plan for procedures. This plan includes an assessment to determine which procedures and procedure groups require near-term improvement using reportable events, among other things, as inputs. Following identification, these high priority procedures will be revised on an expedited schedule using improved processes.

Finally, a comprehensive procedure improvement initiative is included in the Long-Term Performance Improvement Plan, submitted to the NRC on March 28, 1994 (RBG-40428). This initiative includes improving procedure quality and usability, improving administrative controls, streamlining and enhancing the procedure maintenance and change process, and establishing effective information management systems.

Safety Assessment

The division II SSW system was inoperable for the performance of in-service testing. Therefore, the realignment of the system did not result in the loss of a required safety related system. The division I SSW system functioned as designed in response to the loss of the normal service water system.