



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

July 22, 1994

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

Subject: River Bend Station - Unit 1
Docket No. 50-458
License No. NPF-47
Licensee Event Report 50-458/94-019-00
File Nos.: G9.5, G9.25.1.3

RBG-40745

Gentlemen:

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

Very truly yours,

James J. Fisicaro
Director - Nuclear Safety

JJF/jcm
enclosure

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PDR ADDCK 05000458
S PDR

Licensee Event Report 94-019-00

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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
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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 5/31/95				
LICENSEE EVENT REPORT (LER)						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.				
FACILITY NAME (1) River Bend Station						DOCKET NUMBER (2) 05000-458		PAGE (3) 1 of 5		
TITLE (4) Initiation of the Standby Service Water System Due to Procedural Deficiency										
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	019	00	07	22	94	N/A	05000
									FACILITY NAME	DOCKET NUMBER
									N/A	05000
OPERATING MODE (9)		4	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more (11))							
POWER LEVEL (10)		0	20.402(b)		20.405(c)		<input checked="" type="checkbox"/>		50.73(a)(2)(iv)	
			20.405(a)(1)(i)		50.36(c)(1)		<input type="checkbox"/>		50.73(a)(2)(v)	
			20.405(a)(1)(ii)		50.36(c)(2)		<input type="checkbox"/>		50.73(a)(2)(vii)	
			20.405(a)(1)(iii)		50.73(a)(2)(i)		<input type="checkbox"/>		50.73(a)(2)(viii)(A)	
			20.405(a)(1)(iv)		50.73(a)(2)(ii)		<input type="checkbox"/>		50.73(a)(2)(viii)(B)	
			20.405(a)(1)(v)		50.73(a)(2)(iii)		<input type="checkbox"/>		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				
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)		NO		<input checked="" type="checkbox"/>		DATE (15)				
ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)										
<p>On June 24, 1994 at 0453 with the reactor in Operational Condition 4 (cold shutdown), the standby service water pumps automatically started during surveillance testing of the division II remote shutdown control circuitry. A part of the test was to operate the standby service water (SSW) supply and return valves to the reactor plant component cooling water (RPCCW) system. This step results in cross-connecting the two systems and creates the potential for ESF actuations. After the RPCCW supply valve was closed, a low pressure condition occurred which caused the SSW system initiation.</p> <p>The root cause of the event was procedural deficiency in that pertinent information required to prevent the ESF actuation was not included in the text of the procedure. The corrective actions include revising the procedure prior to the next performance. In addition, a multi-disciplinary team will be formed to review the operating history and performance of the SSW system to determine if additional operator training, system modification or procedure improvements are required to prevent ESF actuations.</p> <p>The operating crew confirmed that the SSW initiation occurred as designed. The SSW system was subsequently restored to a standby lineup.</p>										

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

Reported Condition

On June 24, 1994 at 0453 with the reactor in Operational Condition 4 (cold shutdown), the standby service water pumps (*BI-P*), 1SWP*P2B and 1SWP*P2D, automatically started during surveillance testing of the division II remote shutdown control circuitry. Therefore, this event is reported pursuant to 10CFR50.73(a)(2)(iv) as an engineered safety feature (ESF) actuation.

Investigation

The operating crew was performing Surveillance Test Procedure, STP-200-0602, "Division II Remote Shutdown Control Circuit Operability Test." This STP involved manipulating components in the reactor plant component cooling water (RPCCW) (*CC*) system and the standby service water (SSW) (*BI*) system. A part of this test was to operate the standby service water (SSW) supply and return valves to the RPCCW system. This step results in cross-connecting the two systems and creates the potential for ESF actuations. The RPCCW portion of this procedure was discussed with test personnel but no problems were identified with the procedure at that time.

The caution statement preceding step 7.7.26 on page 35 of the procedure recommends "installing a Makeup Water System (MWS) jumper to the CRD pump per SOP-0016, Reactor Plant Component Cooling Water System, closing 1CCP*MOV16B [an RPCCW supply valve (*CC-20*)] and 1CCP*MOV336 [the corresponding RPCCW return valve (*CC-20*)], and placing the RPCCW DIV 2 TEST switch to test." The MWS jumper to the CRD pump had been installed to provide temporary cooling and the RPCCW test switches had been placed in the test position. The control room operator attempted to close the RPCCW valves in the sequence stated in the caution by closing the RPCCW supply valve (1CCP*MOV16B) first, followed by the RPCCW return valve (1CCP*MOV336). When the operator closed the supply valve (1CCP*MOV16B), a siphoning action occurred because the outlet piping was still open. The pressure of the RPCCW header was lowered almost immediately to 54 psig and the division II SSW initiation occurred as designed. The operating crew entered Abnormal Operating Procedure, AOP-0053, "Standby Service Water Initiation." The supply valve (1CCP*MOV16B) was reopened and the SSW system was subsequently returned to a standby lineup.

Precautions were taken to prevent additional SSW initiations and the surveillance was successfully completed. After the SSW valves had been stroked, the SSW and RPCCW lineups were returned to normal.

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Root Cause

The root cause of the event was procedural deficiency in that pertinent information required to prevent the ESF actuation was not included in the text of the procedure. If the procedure had locked out the division II SSW pumps and placed the division II SSW test switches in the test position, the ESF actuation would have been prevented with no impact on plant safety or on components cooled by RPCCW.

Licensee Event Report 94-011 documented a SSW initiation which occurred due to an ambiguous caution statement in STP-256-3302, an 18 month surveillance test for in-service testing. Corrective actions included revision of the affected procedure to include actions to prevent the ESF actuation, briefings for the operating crews concerning the event and lessons learned, and interim and long-term initiatives to address procedure adequacy at River Bend Station. Descriptions of these ongoing interim and long-term initiatives are provided below in the corrective action section.

A review of other LERs since 1992 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 the SSW system.

Corrective Action

Specific corrective actions resulting from this event are as follows:

1. Surveillance test procedure STP-200-0602 will be revised to include provisions for locking out the division II SSW pumps and placing the division II SSW test switch in the test position prior to taking any actions which could cause an ESF actuation to occur. In addition the "recommended actions" should be rewritten and included as procedural steps in accordance with the River Bend Station Procedure Writer's Guide. These revisions will be incorporated by October 31, 1994. This date is prior to the next performance of the procedure, which will occur during the next refueling outage, in approximately 18 months.
2. Surveillances on an 18 month frequency which operate SSW valves or components will be reviewed to determine if similar procedural deficiencies exist by October 31, 1994.

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3. A team consisting of operations, engineering, and training personnel will be formed by August 31, 1994 to review the operating history and performance of the SSW system to determine if additional operator training, system modification or additional procedure improvements are required to prevent additional ESF actuations. Corrective actions with implementation schedules will be developed. Corrective actions which impact procedures will be coordinated with the procedure upgrade project.

Existing corrective actions to address procedure adequacy and ESF actuations are identified below:

1. Entergy Operations, Inc. has initiated interim actions as a part of the procedure upgrade project (PUP) as described in a July 6, 1994 letter to the NRC (RBG-40630). This plan includes the formation of an interim procedures group and an assessment to determine which procedures 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, beginning on August 1, 1994.
2. 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.
3. 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 previous 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.

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- 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-disciplinary team to evaluate practices and processes which will apply to all surveillances and maintenance work. The goal of the 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.

Safety Assessment

The division II SSW initiation occurred as designed. The operating crew entered Abnormal Operating Procedure, AOP-0053, "Standby Service Water Initiation," to verify proper equipment function during the event. RPCCW supply Valve 1CCP*MOV16B was reopened and the SSW system was subsequently returned to a standby lineup.