



Entergy Operations, Inc.
River Bend Station
5485 U.S. Highway 61N
St. Francisville, LA 70775

RBG-47564

May 5, 2015

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

Subject: Licensee Event Report 50-458 / 2015-002-00
River Bend Station – Unit 1
Docket No. 50-458
License No. NPF-47

RBF1-15-0063

Dear Sir or Madam:

In accordance with 10 CFR 50.73, enclosed is the subject Licensee Event Report. This document contains no commitments. If you have any questions, please contact Mr. Joseph Clark at 225-381-4177.

Sincerely,

A handwritten signature in black ink, appearing to read "N. Todd Brumfield".

N. Todd Brumfield
Director – Regulatory & Performance Improvement

NTB/dhw

Enclosure

cc: U. S. Nuclear Regulatory Commission
Region IV
1600 East Lamar Blvd.
Arlington, TX 76011-4511

NRC Sr. Resident Inspector
P. O. Box 1050
St. Francisville, LA 70775

Lead
LRR

Licensee Event Report 50-458 / 2015-002-00

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INPO

(via ICES reporting)

Central Records Clerk
Public Utility Commission of Texas
1701 N. Congress Ave.
Austin, TX 78711-3326

Department of Environmental Quality
Office of Environmental Compliance
Radiological Emergency Planning and Response Section
Ji Young Wiley
P.O. Box 4312
Baton Rouge, LA 70821-4312



LICENSEE EVENT REPORT (LER)
(See Page 2 for required number of digits/characters for each block)

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the FOIA, Privacy and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to Infocollects.Resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

1. FACILITY NAME

River Bend Station - Unit 1

2. DOCKET NUMBER

05000 458

3. PAGE

1 OF 3

4. TITLE

Emergency Diesel Generator Start Circuit Actuation Due to Loss of Power from Reserve Station Service No. 2

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
3	7	2015	2015	002	00	05	05	2015	FACILITY NAME	05000
									FACILITY NAME	DOCKET NUMBER
										05000

9. OPERATING MODE	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)			
5	<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> 50.73(a)(2)(vii)
	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)
	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)
	<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)
10. POWER LEVEL	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)
	<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)
	<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)
	<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> OTHER
	<input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

LICENSEE CONTACT Joseph A. Clark, Manager - Regulatory Assurance	TELEPHONE NUMBER (Include Area Code) (225) 381-4177
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13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX
n/a									

14. SUPPLEMENTAL REPORT EXPECTED	15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR
<input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO				

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

On March 7, 2015, at 9:40 p.m., while the plant was in cold shutdown, power from the reserve station service line no. 2 to the Division 2 onsite electrical distribution system was lost. The Division 2 diesel generator (EDG) received an automatic start signal due the under-voltage condition on the 4160v bus, but did not start since it was out of service for scheduled maintenance. The Division 2 standby service water pumps were operating at the time for scheduled testing, and subsequently shut down when power was lost. The investigation team concluded that electricians must have made contact with the sudden-pressure trip circuitry wires while working in the cabinet on the reserve station service transformer "D". The apparent cause of this event was inadequate work practices on the part of the electricians, in that they did not take all available precautions prior to performing the voltage check. The workers recognized the adverse conditions, but did not recognize the need to put into place any robust barriers. The electricians' successful past performance of this type of task likely led to overconfidence. Reviewers of the work package didn't challenge the potential risks or identify a most error-likely task. The EDG start logic responded as designed to the loss of power on the Division 2 electrical systems. This event did not involve any interruption of the shutdown cooling function. This event was, thus, of minimal safety significance with respect to the health and safety of the public. This event is being reported in accordance with 10 CFR 50.73(a)(2)(iv)(A) as a valid actuation of the EDG starting logic.



**LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET**

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1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
River Bend Station - Unit 1	05000 458	YEAR	SEQUENTIAL NUMBER	REV NO.	2 OF 3
		2015	- 002	- 00	

NARRATIVE

REPORTED CONDITION

On March 7, 2015, at 9:40 p.m., while the plant was in cold shutdown, power from the reserve station service (RSS) line no. 2 to the Division 2 onsite electrical distribution system was lost. The Division 2 diesel generator (EDG) received an automatic start signal due the under-voltage condition on the 4160v bus, but did not start since it was out of service for scheduled maintenance. The Division 2 standby service water (SSW) pumps were operating at the time for scheduled testing, and subsequently shut down when power was lost.

Operators implemented the appropriate response procedures and restored affected systems to service. Re-alignment of Division 1 SSW to carry the affected heat loads was completed by 10:34 p.m. The Division 2 standby switchgear was re-energized from the alternate source at 3:40 a.m. the next morning.

This event is being reported in accordance with 10 CFR 50.73(a)(2)(iv) as valid actuation of the EDG starting logic.

INVESTIGATION

At the time of the event, work was in progress to install a new modification on reserve station service transformer "D" to comply with the industry initiative on open-phase conditions as described in NRC Bulletin 12-01, Design Vulnerability in Electric Power Systems. All the work prior to the point at which the RSS tripped had been performed with the transformers de-energized under a clearance order.

On the day prior to the event, the clearance was released and the transformers were energized to start the post-modification test plan. Before beginning the subsequent steps, the electricians conducted a pre-job brief that included a review of the schematic drawings of the circuitry being tested, as well as a review of roles and responsibilities of all those involved with the work.

Upon arrival at the transformer yard, the electricians performed a job site review to identify any changes in work conditions and other potential hazards. The following conditions were noted:

- All stationary lighting plants had been removed after previous modification work was completed, so the workers were wearing head lamps
- A conduit near the control panel blocked the full opening of the control cabinet door, thereby limiting access
- In close proximity to the electrical terminal being tested, there were abandoned trip circuitry wires where a 2009 modification had removed a sudden-pressure trip relay. The wiring for that relay had been retired in place.

An investigation team was assigned to determine the cause of the event. There were no other work activities in progress, other than verifying the trip circuitry in the control panel on "D" transformer. The team tried to re-create the alarm by resetting the RSS trip relay. The team went through various progressions that included shaking the terminal box, cabinet door, and other structures. Only when the team placed jumpers in contact with the top lugs between adjacent terminal points, where the abandoned trip circuit were near the adjacent terminal, did the RSS trip logic activate. Based on this demonstration, the team concluded that electricians must have made contact with the sudden-pressure trip circuitry wires while working in the cabinet.

**LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET**

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
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NARRATIVE

CAUSAL ANALYSIS

The apparent cause of this event was inadequate work practices on the part of the electricians, in that they did not take all available precautions prior to performing the voltage check. The workers recognized the adverse conditions, but did not recognize the need to put into place any robust barriers. The electricians' successful past performance of this type of task likely led to overconfidence. Reviewers of the work package didn't challenge the potential risks or identify a most error-likely task.

CORRECTIVE ACTION TO PREVENT RECURRENCE

A human performance error review was conducted with the contract electricians involved in this event and their supervisors. The contractor held an all-hands stand-down to reinforce human performance expectations.

PREVIOUS OCCURRENCE EVALUATION

No similar events have been reported by River Bend Station in the last 3 years.

SAFETY SIGNIFICANCE

The EDG start logic responded as designed to the loss of power on the Division 2 electrical systems. This event did not involve any interruption of the shutdown cooling function. This event was, thus, of minimal safety significance with respect to the health and safety of the public.