Entergy Operations, Inc.
River Bend Station
5485 U. S. Highway 61N
St. Francisville, LA 70775
Tel 225 381 4149
Fax 225 635 5068
jrober3@entergy.com

Jerry C. Roberts
Director, Nuclear Safety Assurance

RBG-47314

November 29, 2012

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

Subject: Licensee Event Report 50-458 / 2012-004-00
River Bend Station – Unit 1
Docket No. 50-458
License No. NPF-47

RBF1-12-0181

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,

JCR/dhw

Enclosure

IE22
NRR

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

INPO Records Center
E-Mail (MS Word format)

Ms. Tracie Lowery
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
JiYoung Wiley
P.O. Box 4312
Baton Rouge, LA 70821-4312

NRC FORM 366 (10-2010) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 10/31/2013

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 Section (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.

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
River Bend Station – Unit 1	05000 - 458	1 OF 3

4. TITLE

Operations Prohibited by Technical Specifications Due to Wiring Error in Safety-Related Circuit Breaker

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
									n/a	05000
10	06	2012	2012	2012-004-00		11	29	2012	FACILITY NAME n/a	DOCKET NUMBER 05000

9. OPERATING MODE

1

10. POWER LEVEL

100

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: *(Check all that apply)*

☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.73(a)(2)(i)(C)	☐ 50.73(a)(2)(vii)
☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)
☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)
☐ 20.2203(a)(2)(i)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)
☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(4)
☐ 20.2203(a)(2)(iv)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(5)
☐ 20.2203(a)(2)(v)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(C)	☐ OTHER
☐ 20.2203(a)(2)(vi)	☒ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME	TELEPHONE NUMBER *(Include Area Code)*
Joseph A. Clark, Manager – Licensing	225-381-4177

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

14. SUPPLEMENTAL REPORT EXPECTED

☐ YES *(If yes, complete 15. EXPECTED SUBMISSION DATE)* ☒ NO

15. EXPECTED SUBMISSION DATE

MONTH	DAY	YEAR

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

On October 6, 2012, while the plant was operating at 100 percent power, it was discovered that one of the safety-related fans in the standby service water cooling tower would not start from the remote shutdown panel. The initial investigation determined that the failure was due to incorrect maintenance that had been performed on May 3, 2011, when a relay in the fan motor breaker was miswired during re-installation after bench testing. This condition caused the fan to have been inoperable since that time with respect to the function of the Remote Shutdown System, as governed by Technical Specification 3.3.3.2. The investigation of this event found that control of lifted leads and application of post-maintenance testing requirements were ineffective. Revisions to the applicable maintenance procedures have been planned / completed to address the causes of this event. This event is being reported in accordance with 10 CFR 50.73(a)(2)(i)(B) as operations prohibited by technical specifications.

REPORTED CONDITION

On October 6, 2012, while the plant was operating at 100 percent power, it was discovered that one of the safety-related fans (**FAN**) in the standby service water cooling tower (BS) would not start from the remote shutdown panel. The initial investigation determined that the failure was due to incorrect maintenance that had been performed on May 3, 2011. This condition caused the fan to have been inoperable with respect to the function of the Remote Shutdown System, as governed by Technical Specification (TS) 3.3.3.2. This event is being reported in accordance with 10 CFR 50.73(a)(2)(i)(B) as operations prohibited by technical specifications.

BACKGROUND

The standby cooling tower is a 200 percent capacity cooling tower with a 100 percent capacity water storage basin. The basin is the source of water for the four standby service water (SSW) pumps. Twenty 40-horsepower vaneaxial fans are mounted in the tower in an induced draft arrangement, with ten fans dedicated to each of the two divisions of SSW. The fans are powered by the respective emergency diesel generators (DG), and are normally started by the operator in the main control room. The circuit breakers (**52**) supplying the individual fans have relays (**2**) that start the fans in a timed sequence to control the loading of the respective DG.

The ten fans in each division are divided into two cells of five fans. TS 3.7.1, "Standby Service Water System and Ultimate Heat Sink," does not address the operability of individual fans. However, the Bases for that TS specifies that an operable fan cell comprises five operable fans. Thus, the inoperable fan caused the affected cell to be inoperable.

The test being conducted at the time of discovery was for verification of the ability to start the fans with the system configured for operation from outside the main control room (i.e., the remote shutdown function). During the initial troubleshooting, it was confirmed that the fans started as designed with the control switches configured for operation from inside the main control room. The remote shutdown function for the one affected fan was the only inoperable function.

INVESTIGATION and CAUSAL ANALYSIS

The maintenance performed in May 2011 was a scheduled task to calibrate the timing relays in the individual circuit breakers for each fan. The post-maintenance test for this work required only the successful operation of the relay during bench testing. No functional check of the fans was specified by the work package.

In October 2012, the fans were removed from service for replacement of other components in the breakers to address obsolescence issues. The post-maintenance test for this work required operation of the fans in the remote shutdown configuration. At this point, it was discovered that the subject fan would not start. The initial troubleshooting determined that two wires were not connected to the correct points on the timing relay. The last time these wires were removed was in May 2011 during the calibration procedure.

The investigation of this event found that verification and marking of the lifted leads during removal of the timing relay for bench testing was ineffective. This led to the wires being attached to incorrect terminals upon re-installation of the relay. The erroneous wiring configuration prevented the start function of one fan in the remote shutdown alignment.

This investigation also determined that the post-maintenance test specified by the timing relay calibration work package was not effective, in that a functional test of the fans should have been required.

CORRECTIVE ACTION TO PREVENT RECURRENCE

The general maintenance procedure that controls lifted leads and jumpers will be revised to strengthen the verification requirements for this type of activity. This action is being tracked in the station's corrective action program.

Since the May 2011 relay calibration, the work management procedure that defines post-maintenance tests was revised to provide improved guidance on determining effective test requirements.

PREVIOUS OCCURRENCE EVALUATION

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

SAFETY SIGNIFICANCE

The mis-wired relay affected only the ability to start one fan in the remote shutdown configuration. The design safety function of Division 1 SSW was maintained since the fan was at all times capable of being started from the main control room. Thus, this event was of minimal safety significance with respect to the health and safety of the public.

(NOTE: Energy Industry Component Identification codes are annotated as (**XX**).)