Entergy

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

RBG-47667

March 17, 2016

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

Subject: Licensee Event Report 50-458 / 2016-003-00
River Bend Station – Unit 1
Docket No. 50-458
License No. NPF-47

RBF1-16-0033

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,

WFMaguire

William F. Maguire
Site Vice President

Enclosure

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

IE22
NRR

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

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

NRC FORM 366 (02-2014) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 01/31/2017

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.

LICENSEE EVENT REPORT (LER)

(See Page 2 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 2

4. TITLE

Operations Prohibited by Technical Specifications Due to Reactor Control Rod Drift During Core Alterations

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
1	19	2016	2016	003	00	03	17	2016		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	☐ 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)
10. POWER LEVEL	☐ 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)
0	☐ 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

LICENSEE CONTACT	TELEPHONE NUMBER *(Include Area Code)*
Joseph A. Clark, Manager - Regulatory Assurance	(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
(see text)									

14. SUPPLEMENTAL REPORT EXPECTED	15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR
☑ YES *(If yes, complete 15. EXPECTED SUBMISSION DATE)* ☐ NO		04	01	2017

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

On January 19, 2016, at 5:28 a.m. CST, while conducting core alterations, an alarm was actuated in the main control room alarm indicating that a reactor control rod had drifted out of the fully inserted position. At the time, a fuel bundle was being raised out of the core, and the control rod in the same cell drifted out one notch with no "withdraw" command present. This condition actuated a corresponding alarm on the refueling platform, and system interlocks stopped the platform hoist with the fuel bundle partially withdrawn. When the control rod moved from the fully inserted position, the Technical Specification applicability for the intermediate range neutron monitoring system was inadvertently entered, while a certain function of those instruments was not operable. This event constituted operations prohibited by Technical Specifications, and is being reported in accordance with 10 CFR 50.73(a)(2)(i)(B). After a detailed assessment of the situation, the fuel bundle and the control rod were returned to their original positions. The drive mechanism for the control rod has been disabled, and the control rod will remain fully inserted for the remainder of the current fuel cycle. The causal analysis for this event will be completed when the control rod can be removed for inspection during the next refueling outage. The results of that investigation will be provided in a supplement to this report.

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NARRATIVE

REPORTED CONDITION

On January 19, 2016, at 5:28 a.m. CST, while conducting core alterations, an alarm was actuated in the main control room alarm indicating that a reactor control rod had drifted out of the fully inserted position. At the time, a fuel bundle was being raised out of the core, and the control rod in the same cell drifted out one notch with no "withdraw" command present. This condition actuated a corresponding alarm on the refueling platform, and system interlocks stopped the platform hoist with the fuel bundle partially withdrawn.

One subset of instrumentation in the core neutron monitoring system is the intermediate range monitors (IRM). The function of the IRMs, as required by Technical Specifications, is to actuate a trip of the reactor protection system upon a "high flux" signal, as might occur during a reactor startup. This function required to be operable only in MODE 5 (refueling) if all reactor control rods are not fully inserted, and in MODE 2 (reactor startup). Since it was not anticipated that the plant would enter the applicability for that IRM function until near the scheduled time of reactor startup, the surveillance requirement for that function had not been performed to verify operability at the time of this event. When the control rod drifted out of the fully inserted position, the applicability of the "high flux" trip function was inadvertently entered. As the function was not operable at the time, this event constituted operations prohibited by Technical Specifications.

INVESTIGATION and IMMEDIATE CORRECTIVE ACTIONS

After a detailed assessment of the situation, the fuel bundle was manually lowered back to into the core. The system interlock preventing any intentional control rod motion was temporarily bypassed, and the control rod was fully re-inserted with a normal "insert" command at 11:58 a.m. The bypass on the control rod motion interlocks was then removed.

Later on the same day, the surveillance test procedures for six IRM channels were successfully performed, re-establishing operability of the "high flux" function. The drive mechanism for the control rod has been disabled, and the control rod will remain fully inserted for the remainder of the current fuel cycle.

The causal analysis for this event will be completed when the control rod can be removed for inspection during the next refueling outage. The results of that investigation will be provided in a supplement to this report.

SAFETY SIGNIFICANCE

River Bend Technical Specifications require that adequate shutdown margin exists at all times. It is required that the reactor core is subcritical (or at any time can be made so) by a specified margin of a percentage of the total reactivity in the core. One of the base assumptions of the shutdown margin calculation is that the control rod with the highest reactivity is fully withdrawn. In this event, one control rod moved out of the fully inserted position by only one notch. Therefore, the assumption of the shutdown margin calculation was not violated, and the calculation remained fully bounding.

No other control rods were affected. The fuel bundle and the control rod were both returned to their original positions. This event was, thus, of minimal safety significance to the health and safety of the public.