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RBG-47495

August 11, 2014

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

Subject: Licensee Event Report 50-458 / 2014-003-00
River Bend Station – Unit 1
Docket No. 50-458
License No. NPF-47

RBF1-14-0122

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,

Eric W. Olson

EWO/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
(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
JiYoung 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)

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4. TITLE

Operations Prohibited by Technical Specifications Due to Concurrent Inoperability of Reactor Protection System Channels

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
										05000
06	10	2014	2014	003	00	08	11	2014	FACILITY NAME	DOCKET NUMBER
										05000

9. OPERATING MODE	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: *(Check all that apply)*			
1	☐ 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)
100	☐ 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
n/a									

14. SUPPLEMENTAL REPORT EXPECTED	15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR
☑ YES *(If yes, complete 15. EXPECTED SUBMISSION DATE)* ☐ NO		04	15	2015

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

On June 10, 2014, with the plant operating at 100 percent power, technicians performing a scheduled surveillance test found that one instrument channel in the reactor protection system failed its time response acceptance criterion. This was the second of two such tests that failed in similar fashion. Since it is conceivable that the second tested channel was out of specifications at the time the first channel was tested, this condition caused independent redundant channels in the same trip system to be inoperable at the same time. The actions required by the applicable Limiting Condition for Operation were not taken since the operators were not aware of the latent condition at the time of the first surveillance test failure. An engineering evaluation of this condition was performed, and the RPS system was declared operable with compensatory measures. Until this issue is resolved, the frequency of the calibration tests in the channels with Agastat relays has been increased to once per year. This condition is reportable in accordance with 10CFR50.73(a)(2)(i)(b) as operations prohibited by Technical Specifications, as well as 10CFR50.73(a)(2)(vii), a potential common-cause inoperability of independent trip channels. Due to the design redundancy of the independent channels of the RPS system, this condition would likely have not prevented the system from performing its safety function. Had an actual full MSIV isolation occurred with the channel response times in their as-found condition, the reactor scram signal would likely have still occurred within the specified instrument response time.

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NARRATIVE

REPORTED CONDITION

On June 10, 2014, with the plant operating at 100 percent power, technicians performing a scheduled surveillance test found that one instrument channel in the reactor protection system (JC) failed its time response acceptance criterion. This was the second of two such tests that failed in similar fashion. Since it is conceivable that the second tested channel was out of specifications at the time the first channel was tested, this condition caused independent redundant channels in the same trip system to be inoperable at the same time. The actions required by the applicable Limiting Condition for Operation were not taken since the operators were not aware of the latent condition at the time of the first surveillance test failure. This condition is reportable in accordance with 10CFR50.73(a)(2)(i)(b) as operations prohibited by Technical Specifications, as well as 10CFR50.73(a)(2)(vii), a potential common-cause inoperability of independent trip channels.

BACKGROUND

One of the functions in the reactor protection system is the initiation of a reactor scram in the event of a closure of the main steam isolation valves (MSIVs). Limit switches on each of the eight MSIV actuators provide input to the individual, redundant RPS trip channels if the valve moves to a nominal 12 percent of stroke length in the "close" direction. The design of the RPS system requires that a channel respond to an input from its MSIV limit switch and generate a trip signal. The maximum response time specified by the Technical Requirements Manual is 90 milliseconds. The calibration frequency is four years (24 months on a staggered test basis).

The arrangement of the instrumentation includes 16 individual channels. Inboard and outboard MSIVs in each of the four main steam line are instrumented with redundant limit switches monitored by independent trip channels of the RPS system.

IMMEDIATE ACTIONS

In the calibrations performed in 2010, a degrading trend in the response times was noted in the four channels containing the Agastat relays (**94**). In the 2010 tests, the response time of each of the four channels was 89 milliseconds. The as-found response times found in the recent tests ranged from 90 to 102 milliseconds. In each case, the Agastat relay was replaced and the response time was then verified to be within specifications. The response times for the channels with no Agastat relays ranged from 41 to 51 milliseconds.

An engineering evaluation of this condition was performed, and the RPS system was declared operable with compensatory measures. Until this issue is resolved, the frequency of the calibration tests in the channels with Agastat relays has been increased to once per year. This action is being tracked in the station's corrective action program.

CAUSAL ANALYSIS

The cause of this event remains under investigation. Corrective actions to prevent recurrence will be developed following the evaluation of future test results. These will be reported in a future supplement to this LER.

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NARRATIVE

SAFETY SIGNIFICANCE

Due to the design redundancy of the independent channels of the RPS system, it is unlikely that this condition would not have prevented the system from performing its safety function. Had an actual full MSIV isolation occurred with the channel response times in their as-found condition, the reactor scram signal would have likely have still occurred within the specified instrument response time. This will be confirmed in the completion of the event investigation.

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