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RBG-47621

October 13, 2015

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

Subject: Licensee Event Report 50-458 / 2014-003-01
River Bend Station – Unit 1
Docket No. 50-458
License No. NPF-47

RBF1-15-0166

Dear Sir or Madam:

In accordance with 10 CFR 50.73, enclosed is the subject Licensee Event Report. This is a supplement to the original report dated August 11, 2014. 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".

NTB / dhw

Enclosure

IEZZ
NRR

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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
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: 60 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 Collection Branch (7-5 F63), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollections.Resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NE02-10202, (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
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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
6	10	2014	2014	003	01	10	13	2015	FACILITY NAME	DOCKET NUMBER
										05000

9. OPERATING MODE 1

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

<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input checked="" 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 100	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(iv)(A)
	<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"/> 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"/> 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"/> 20.2203(a)(2)(vi)	<input checked="" 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

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX
n/a									

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 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. 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 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 still occurred within the specified instrument response time. The investigation of this event determined that the response time test failures were not caused by failed or degraded relays outside of the current design. Due to the design release time of the Agastat relays, the MSIV closure / RPS trip circuits could exceed the TRM acceptance criterion even if all relays in the circuit operated within design specifications. It was confirmed that this condition affected only the four channels containing Agastat relays. An analysis of the affected scram function determined that a change in the acceptance criterion 0.09 seconds to 0.15 seconds is justified. That change is being implemented in accordance with station procedures.



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

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.

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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). Two 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 0.09 seconds. 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 lines 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 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 0.090 to 0.102 seconds. 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 0.041 to 0.051 seconds.

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.

CAUSAL ANALYSIS

The investigation of this event determined that the response time test failures were not caused by failed or degraded relays outside of the current design. Due to the design "release time" of the Agastat relays, the MSIV closure / RPS trip circuits could exceed the TRM acceptance criterion even if all relays in the circuit operated within design specifications. It was confirmed that this condition affected only the four channels containing Agastat relays.

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NARRATIVE

The nuclear steam supply system vendor performed an analysis supporting a change in the total scram delay time from 0.09 seconds to 0.15 seconds. The analysis concluded that the main steam isolation valve closure event with a scram initiated by the MSIV limit switches remains bounded by other pressurization events described in the Updated Safety Analysis Report. Reactor pressure will remain under the design limit of 1375 psig. Radiation dose is not affected because the conservative assumptions utilized in the analysis documented in the USAR remain unchanged and bounding for the event.

A design change is being implemented to revise the TRM acceptance criterion from 0.09 to 0.15 seconds. An administrative limit of 0.125 seconds will be enforced by the test procedure.

SAFETY SIGNIFICANCE

Due to the design redundancy of the independent channels of the RPS system, 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 still occurred within the specified instrument response time.

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