Entergy

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

RBG-47660

March 7, 2016

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

Subject: Licensee Event Report 50-458 / 2016-001-00
River Bend Station – Unit 1
Docket No. 50-458
License No. NPF-47

RBF1-16-0027

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,

Sergio Vazquez
Director – Engineering

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
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4. TITLE

Potential Loss of Secondary Containment Safety Function Due to Failure of Auxiliary Building Ventilation System

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
1	5	2016	2016	- 001	- 00	03	07	2016	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
(see text)									

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

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

On January 5, 2016, at 10:58 p.m. CST, with the plant operating at 100 percent power, the main control room alarm indicating high pressure in the auxiliary building actuated. Operators confirmed that the building pressure was out of specification. Secondary containment was declared inoperable, and the Division 2 standby gas treatment system was started. This action restored building pressure to the acceptable range, and secondary containment was declared operable at 12:27 a.m. on January 6. An inspection of the auxiliary building normal ventilation system found that discharge dampers on the exhaust fans were degraded, and the flow control damper on the supply fans was not operating correctly. In order to restore the normal ventilation system to service, the troubleshooting plan for this condition temporarily altered the operating configuration of the system to close the suction damper on the idle exhaust fan. This prevents backflow through the idle fan, allowing the system to control building pressure within the required operating range. Corrective maintenance is being planned to restore the material condition of the normal ventilation system. This condition is being reported in accordance with 10 CFR 50.73(a)(2)(v)(C) as an event that caused the secondary containment to be potentially incapable of performing its safety function.

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NARRATIVE

REPORTED CONDITION

On January 5, 2016, at 10:58 p.m. CST, with the plant operating at 100 percent power, the main control room alarm indicating high pressure in the auxiliary building [NF] actuated. Operators confirmed that the building pressure was out of specification. Secondary containment was declared inoperable, and the Division 2 standby gas treatment system [BH] was started. This action restored building pressure to the acceptable range, and secondary containment was declared operable at 12:27 a.m. on January 6. This condition is being reported in accordance with 10 CFR 50.73(a)(2)(iv)(A) as an event that caused the secondary containment to be potentially incapable of performing its safety function.

BACKGROUND

The normal auxiliary building ventilation system [VF] is non-safety related, and comprises two 100 percent capacity supply fans, two 100 percent capacity exhaust fans, and the associated ductwork, dampers, and controls. A supply fan operates continuously, drawing air from outside and distributing it throughout the building. The supply fan discharge dampers modulate automatically to maintain air flow at a nominal 10,000 standard cubic feet per minute. An exhaust fan continuously draws air from the building and expels it outside. The arrangement of the flow path through the building general equipment areas and pump rooms is balanced such that the system acts to maintain the building at a negative pressure.

During design-basis accident conditions, the auxiliary building is maintained at negative pressure by the standby gas treatment system. That is a safety-related system that actuates automatically in response to certain plant parameters.

INVESTIGATION and IMMEDIATE ACTIONS

The normal ventilation system was inspected, and it was determined that a combination of degraded components caused the condition:

• Seals on the exhaust fan (**FAN**) discharge damper (**BDMP**) vanes were degraded. This allowed air to flow backwards through the idle exhaust fan, causing the total exhaust outflow to decrease and building pressure to increase.

• The flow controller for the supply fan modulating dampers (**CDMP**) had failed, allowing excessive air flow that caused building pressure to increase.

In order to restore the normal ventilation system to service, the troubleshooting plan for this condition temporarily altered the operating configuration of the system to close the suction damper on the idle exhaust fan. This prevents backflow through the idle fan, allowing the system to control building pressure within the required operating range.

CORRECTIVE ACTION TO PREVENT RECURRENCE

Corrective maintenance is being planned to (1) replace the seals in the exhaust fan discharge dampers to eliminate the backflow path, and (2) calibrate the supply fan modulating damper control circuit.

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NARRATIVE

PREVIOUS OCCURRENCE EVALUATION

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

SAFETY SIGNIFICANCE

The River Bend Updated Safety Analysis Report describes the sequence of events postulated to occur following a loss of coolant accident (LOCA). Part of that analysis is a projection of the maximum radiation dose received by a person at the site boundary. The LOCA dose calculation assumes that the standby gas treatment system is initiated 20 minutes into the event, and that secondary containment is at the required negative pressure within 30 minutes, such that filtration may be credited. As such, the safety function of secondary containment is maintained as long as the auxiliary building pressure is capable of being established within 30 minutes of the onset of the event. Since the ability of the standby gas treatment system to control building pressure within specifications under accident conditions was demonstrated in the recovery from this condition, no loss of the safety function of secondary containment actually occurred. This event was, thus, of minimal significance to the health and safety of the public.

(NOTE: Energy Industry Identification System component function identifier and system name of each component or system referred to in the LER are annotated as (**XX**) and [XX], respectively.)