



Entergy[®]

Entergy Operations, Inc.
River Bend Station
5485 U.S. Highway 61N
St. Francisville, LA 70775
Tel 225-381-4157

William F. Maguire
Site Vice President

RBG-47772

July 13, 2017

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

Subject: Licensee Event Report 50-458 / 2017-006-00
River Bend Station – Unit 1
Docket No. 50-458
License No. NPF-47

RBF1-17-0082

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. Tim Schenk at 225-381-4177.

Sincerely,

WFM / dhw

Enclosure

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)

1E22
NR2

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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)

(See NUREG-1022, R.3 for instruction and guidance for completing this form
<http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/>)

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 Information Services Branch (T-2 F43), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by 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.

1. FACILITY NAME River Bend Station – Unit 1	2. DOCKET NUMBER 05000-458	3. PAGE 1 OF 3
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4. TITLE
Potential Loss of Safety Function of Onsite Power Sources due to Inadvertent Inoperability of Control Building Chiller

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
05	15	2017	2017	006	00	07	13	2017		05000
									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)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)						
	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)						
	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<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)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)						
	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)						
	<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)						
	<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> 73.77(a)(1)						
	<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input checked="" type="checkbox"/> 50.73(a)(2)(v)(D)	<input type="checkbox"/> 73.77(a)(2)(i)						
	<input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input type="checkbox"/> 73.77(a)(2)(ii)						
		<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> OTHER	Specify in Abstract below or in NRC Form 366A						

12. LICENSEE CONTACT FOR THIS LER

LICENSEE CONTACT Tim Schenk, Manager – Regulatory Assurance	TELEPHONE NUMBER (Include Area Code) 225-381-4177
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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
none									

14. SUPPLEMENTAL REPORT EXPECTED <input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO	15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR

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

On May 15, 2017, an engineering investigation determined that a modification installed in 2014 on two of the four safety-related main control building chillers had a design error. The nature of that error was such that the performance of a regularly scheduled preventative maintenance (PM) task to draw an oil sample from the chiller gearbox inadvertently caused the chiller to be incapable of responding to an automatic start signal. A review of the history of the PM found that, on three occasions since the modification was installed, the task was performed on the operable chiller that was in the standby condition. The inadvertent inoperability of the standby division of the main control building chillers causes the loss of safety function of the supported electrical distribution systems in the building. The control building chilled water system provides cooling to the equipment rooms housing the battery chargers and inverters for the safety-related onsite electrical distribution systems. The loss of cooling to the various equipment rooms in the control building requires that the supported equipment in those areas be declared inoperable. The Technical Specifications for the Division 3 DC distribution system requires that the high pressure core spray (HPCS) system be immediately declared inoperable. This condition potentially causes the HPCS system to be incapable of performing its safety function, and is, thus, reportable in accordance with 10 CFR 50.73(a)(2)(v)(D). The error in the subject modification is considered a legacy issue since its design was completed and approved in July 2012. The PM task will be revised to preclude its performance on chillers in the standby configuration. At no time during the three performances of the PM on the operable standby chiller was there an actual demand for its automatic start. This condition was, thus, of minimal significance with respect to the health and safety of the public.



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

(See NUREG-1022, R.3 for instruction and guidance for completing this form
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NARRATIVE
REPORTED CONDITION

On May 15, 2017, an engineering investigation determined that a modification installed in 2014 on two of the four safety-related main control building chillers (**CHU**) had a design error. The nature of that error was such that the performance of a regularly scheduled preventative maintenance (PM) task to draw an oil sample from the chiller gearbox inadvertently caused the chiller to be incapable of responding to an automatic start signal. A review of the history of the PM found that, on three occasions since the modification was installed, the task was performed on the operable chiller that was in the standby condition. The inadvertent inoperability of the standby division of the main control building chillers causes the loss of safety function of the supported electrical distribution systems in the building.

The control building chilled water system [VI] provides cooling to the equipment rooms housing the battery chargers and inverters for the safety-related onsite electrical distribution systems. The loss of cooling to the various equipment rooms in the control building requires that the supported equipment in those areas be declared inoperable. The Technical Specifications for the Division 3 DC distribution system requires that the high pressure core spray (HPCS) system be immediately declared inoperable. This condition potentially causes the HPCS system to be incapable of performing its safety function, and is, thus, reportable in accordance with 10 CFR 50.73(a)(2)(v)(D).

INVESTIGATION

The subject modification was installed on the Division 1 "C" chiller in August 2014, and on the Division 2 "D" chiller in April 2014. (Each division has a redundant chiller that has yet to be modified.) The purpose of the modification was to upgrade the chiller controls to a digital system. An error occurred in the development of the modification design that involved the controls for the motor-driven chiller oil pump. The switch for the oil pump is on the main control room panel, and is normally in the "AUTOMATIC" position. The work instructions in the PM require that the control switch be placed in the "RUN" position to start the pump. The effect of the design error is that the automatic start feature of the chiller is disabled when the switch is in the "RUN" position.

The review of the PM history found that the "C" chiller was sampled on February 2nd and August 3rd in 2015. The "D" chiller was sampled on March 21, 2017. In each case, the subject chiller was operable and configured for an automatic start should the operating chiller in the opposite division unexpectedly trip. The execution of the PM step to place the oil pump control switch in "RUN" rendered the chiller inoperable.

IMMEDIATE CORRECTIVE ACTIONS

When this condition was discovered, the oil pump control switches on the "C" and "D" chillers were "CAUTION" tagged to prohibit taking the switch to the "RUN" position if the chiller is in the standby configuration.

CORRECTIVE ACTIONS TO PREVENT RECURRENCE

The error in the subject modification is considered a legacy issue since its design was completed and approved in July 2012. Since that time, a comprehensive root cause analysis on the issue of quality in engineering products was conducted in 2015, which resulted in numerous programmatic changes. Therefore, no new causal analysis was



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performed for this event.

The PM task will be revised to preclude its performance on chillers in the standby configuration. This action is being tracked in the corrective action program.

PREVIOUS OCCURRENCE EVALUATION

River Bend Station has reported no similar events in the last three years.

SAFETY SIGNIFICANCE

At no time during the three performances of the PM on the operable standby chiller was there an actual demand for its automatic start. This condition was, thus, of minimal significance with respect 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.)