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David N. Lorfing
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RBG-47063

August 19, 2010

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

Subject: Licensee Event Report 50-458 / 10-003-00
River Bend Station – Unit 1
Docket No. 50-458
License No. NPF-47

File No. G9.5

RBF1-10-0130

Dear Sir or Madam:

In accordance with 10CFR50.73, enclosed is the subject Licensee Event Report. This document contains no commitments. If you have any questions, please contact me 225-381-4157.

Sincerely,

David N. Lorfing
Manager – Licensing

Enclosure

IE22
NRR

cc: U. S. Nuclear Regulatory Commission
Region IV
612 East Lamar Blvd., Suite 400
Arlington, TX 76011-4125

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

INPO Records Center
E-Mail (MS Word format)

Mr. Jim Calloway
Public Utility Commission of Texas
1701 N. Congress Ave.
Austin, TX 78711-3326

Mr. Jeffrey P. Meyers
Louisiana Department of Environmental Quality
Attn: OEC-ERSD
P.O. Box 4312
Baton Rouge, LA 70821-4312

NRC FORM 366 (9-2007) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 08/31/2010

Estimated burden per response to comply with this mandatory collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@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 reverse 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 3

4. TITLE

High Pressure Core Spray System Declared Inoperable Due to Failure of Pump Room Cooler

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	25	2010	2010	- 003 -	00	08	19	2010	FACILITY NAME	DOCKET NUMBER 05000

9. OPERATING MODE

1

10. POWER LEVEL

100

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

- ☐ 20.2201(b)
- ☐ 20.2201(d)
- ☐ 20.2203(a)(1)
- ☐ 20.2203(a)(2)(i)
- ☐ 20.2203(a)(2)(ii)
- ☐ 20.2203(a)(2)(iii)
- ☐ 20.2203(a)(2)(iv)
- ☐ 20.2203(a)(2)(v)
- ☐ 20.2203(a)(2)(vi)
- ☐ 20.2203(a)(3)(i)
- ☐ 20.2203(a)(3)(ii)
- ☐ 20.2203(a)(4)
- ☐ 50.36(c)(1)(i)(A)
- ☐ 50.36(c)(1)(ii)(A)
- ☐ 50.36(c)(2)
- ☐ 50.46(a)(3)(ii)
- ☐ 50.73(a)(2)(i)(A)
- ☐ 50.73(a)(2)(i)(B)
- ☐ 50.73(a)(2)(i)(C)
- ☐ 50.73(a)(2)(ii)(A)
- ☐ 50.73(a)(2)(ii)(B)
- ☐ 50.73(a)(2)(iii)
- ☐ 50.73(a)(2)(iv)(A)
- ☐ 50.73(a)(2)(v)(A)
- ☐ 50.73(a)(2)(v)(B)
- ☐ 50.73(a)(2)(v)(C)
- ☒ 50.73(a)(2)(v)(D)
- ☐ 50.73(a)(2)(vii)
- ☐ 50.73(a)(2)(viii)(A)
- ☐ 50.73(a)(2)(viii)(B)
- ☐ 50.73(a)(2)(ix)(A)
- ☐ 50.73(a)(2)(x)
- ☐ 73.71(a)(4)
- ☐ 73.71(a)(5)
- ☐ OTHER

Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME	TELEPHONE NUMBER (Include Area Code)
David N. Lorfing, Manager – Licensing	225-381-4157

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
E	VF	CLR	(see text)	YES					

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 25, 2010, at 8:24 p.m. CDT, with the plant operating at 100 percent power, the unit cooler for the high pressure core spray (HPCS) pump room was shut down by the operators following the report of noise and light smoke coming from the fan motor. This action required that the HPCS system be declared inoperable, as the unit cooler is necessary to support continued operation of the HPCS pump. This condition is being reported in accordance with 10CFR50.73(a)(2)(v)(D) as the loss of a system needed to mitigate the consequences of an accident.

The cause of this event was the failure of lubrication in the fan motor bearings resulting from inadequate implementation of vendor recommendations for preventive maintenance. Contributing factors were the inaccurate data collected during vibration monitoring, and improper installation of the original bearings in the motor.

The unit cooler was repaired, and the HPCS system was returned to service within the time limit of the Required Action in the plant's Technical Specifications. This event was of minimal safety significance with respect to the health and safety of the public.

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
River Bend Station – Unit 1	05000-458	2010	- 003 -	00	2 OF 3

REPORTED CONDITION

On June 25, 2010, at 8:24 p.m. CDT, with the plant operating at 100 percent power, the unit cooler (**CLR**) for the high pressure core spray (HPCS) pump room was shut down by the operators following the report of noise and light smoke coming from the fan motor. This action required that the HPCS (BG) system be declared inoperable, as the unit cooler (VF) is necessary to support continued operation of the HPCS pump. This condition is being reported in accordance with 10CFR50.73(a)(2)(v)(D) as the loss of a system needed to mitigate the consequences of an accident.

The HPCS pump room unit cooler is designed to maintain area temperature within the design criteria to ensure equipment operability and safety of plant personnel. The unit consists of a fan and cooling coils. The 50 horsepower fan motor is manufactured by Reliance Electric Co. (Model No. 326TCZ).

The HPCS system was restored to its standby condition at 10:30 a.m. CDT on June 29.

CAUSAL ANALYSIS

On August 6, 2009, the unit cooler began to emit an abnormal high-pitched noise. Motor (**MO**) vibration levels were measured, and no notable increase above baseline levels were detected. It was concluded that the unit cooler remained capable of performing its design function.

On June 19, 2010, the vibration test engineer was requested to assist Operations in evaluating a report of increased noise from the unit cooler. Multiple sets of vibration data were collected. Based on the analysis of the data, it was determined that the increase in noise coming from the fan was not resulting in a subsequent related increase in fan vibration levels.

It was determined during the investigation of the motor failure that the method of collecting vibration data for this component may have not been adequate to accurately assess potential bearing degradation. To obtain the data, a hand-held magnet mount vibration sensor was used on the outside of the fan shroud enclosure, which may have been adversely influenced by signals from other contributors to the overall vibration signature.

Disassembly of the fan motor revealed that the inboard bearing had failed, while the outboard bearing remained intact. The motor bearings were sent to an independent laboratory for failure analysis. The findings concluded that the bearings exhibited signs of lubrication failure. There were also wear patterns in the outboard bearing indicating that it had not been installed correctly.

The unit cooler fan motor had been in service since 1995. The motor's installation at that time constituted a design change, since the motor being replaced was a 40 HP model made by a different manufacturer. When this change was made, the preventive maintenance program was not updated with recommendations from Reliance. The task for periodic lubrication of the motor bearings should have been changed from 3 years to 9 months, and the task for bearing replacement should have been changed from 26 years to 10 years.

In summary, the cause of this event was the failure of lubrication in the fan motor bearings resulting from inadequate implementation of vendor recommendations for preventive maintenance.

Contributing factors were the inaccurate data collected during vibration monitoring, and improper installation of the original bearings in the motor.

IMMEDIATE CORRECTIVE ACTIONS

The unit cooler motor was fitted with new bearings and returned to service.

CORRECTIVE ACTIONS TO PREVENT RECURRENCE

Revisions to the preventive maintenance program are being processed to incorporate the recommendations from Reliance for the lubrication and periodic replacement of the motor bearings. The method of collecting vibration data from this fan is being evaluated for potential improvements. These actions are being tracked in the station's corrective action process.

PREVIOUS OCCURRENCE EVALUATION

There have been no similar events reported by RBS since January 1, 2005.

SAFETY SIGNIFICANCE

Two of three divisions of emergency core cooling systems (ECCS) are required for the RBS loss of coolant accident analyses. While HPCS was out of service, Division 1 and Division 2 ECCS systems and the automatic depressurization system were available, and would have met the ECCS performance criteria of 10CFR50.46.

Evaluation of the postulated rise in pump room temperature with the unit cooler out of service indicates that the HPCS pump could likely have performed its safety function for at least an hour from the start of the design basis accident had it been necessary.

The HPCS system was returned to service within the time limit of the Required Action in the plant's Technical Specifications. This event was of minimal safety significance with respect to the health and safety of the public.

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