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Rick J. King

Director
Nuclear Safety Assurance

October 13, 2000

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

Subject: River Bend Station
Docket No. 50-458
License No. NPF-47
Licensee Event Report 50-458 / 00-013-00

File Nos. G9.5, G9.25.1.3

RBG-45513
RBF1-00-0213

Ladies and Gentlemen:

In accordance with 10CFR50.73, enclosed is the subject Licensee Event Report. The subject event is being reviewed through the corrective action review process.

Sincerely,

A handwritten signature in cursive script that reads "Rick J. King".

RJK/dlm
enclosure

IE22

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cc: U. S. Nuclear Regulatory Commission
Region IV
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NRC Sr. Resident Inspector
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St. Francisville, LA 70775

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Estimated burden per response to comply with this mandatory information collection request: 50 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Forward comments regarding burden estimate to the Records Management Branch (T-6 F33), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and to the Paperwork Reduction Project (3150-0104), Office of Management and Budget, Washington, DC 20503. If an information collection does not display a currently valid OMB control number, the NRC may

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

FACILITY NAME (1)

River Bend Station

DOCKET NUMBER (2)

05000-458

PAGE (3)

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TITLE (4)

Standby Liquid Control System Inoperable Due to Foreign Material in the Storage Tank

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MON	DA	YEAR	YEAR	SEQUEN	REVISI	MON	DA	YEAR	FACILITY NAME	DOCKET NUMBER
09	14	2000	2000	013	00	10	13	2000	FACILITY NAME	DOCKET NUMBER

OPERATI MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more) (11)			
		20.2201(b)	20.2203(a)(2)(v)	50.73(a)(2)(i)	50.73(a)(2)(viii)
POWER	100%	20.2203(a)(1)	20.2203(a)(3)(i)	50.73(a)(2)(ii)	50.73(a)(2)(x)
		20.2203(a)(2)(i)	20.2203(a)(3)(ii)	50.73(a)(2)(iii)	73.71
		20.2203(a)(2)(ii)	20.2203(a)(4)	50.73(a)(2)(iv)	OTHER
		20.2203(a)(2)(iii)	50.36(c)(1)	X 50.73(a)(2)(v)	Specify in Abstract below or in NRC
		20.2203(a)(2)(iv)	50.36(c)(2)	50.73(a)(2)(vii)	

LICENSEE CONTACT FOR THIS LER (12)

NAME
J. W. Leavines, Manager – Licensing

TELEPHONE NUMBER (Include Area Code)
225-381-4642

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

CAUSE	SYSTEM	COMPONEN T	MANUFACTUR ER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONEN T	MANUFACTUR ER	REPORTABL E TO EPIX

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE.) X NO

EXPECTED

MONT DAY YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On September 14, 2000, at 0936 with the plant in Mode 1 (Power Operation) at 100 percent power, a chemistry technician sampling the Standby Liquid Control (SLC) system (**BR**) storage tank (**TK**) found plastic material on the sampling apparatus when the apparatus was removed from the tank. A thorough inspection of the SLC storage tank internals was performed using an underwater camera. No material was found in the pump suction line. This event is being reported in accordance with 10CFR50.73(a)(2)(v)(A) as a condition that alone could have prevented the fulfillment of a safety function needed to shutdown the reactor and maintain it in a safe shutdown condition.

While obtaining the monthly sample of the Standby Liquid Control (SLC) solution, part of a plastic bag approximately 10 inches square was retrieved with the chemistry sampling apparatus. Subsequent inspection of the SLC storage tank revealed approximately 20 pieces of plastic floating on the surface that ranged in size from two square feet to 1/2 inch square and appeared to be part of a trash bag. Three pieces were attached to components in the lower portion of the tank. Due to the foreign material attached to the tank components, both SLC subsystems were declared inoperable on 9/14/00 at 1422 in accordance with Technical Specification 3.1.7. Since inoperability of both SLC pumps results in a loss of safety function, this event was reported to the NRC on 9/14/00 at 1652. Based on the removal of the foreign material, the subsequent SLC tank inspections, and an engineering evaluation of potential trace amounts of plastic remaining in the tank; both SLC subsystems were declared operable on 9/14/00 at 2059.

A risk assessment that assumed the inoperability of SLC system for a period of one year determined that the condition was non-risk significant. Based on this information, the safety significance of this event is minimal.

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REPORTED CONDITION

On September 14, 2000, at 0936 with the plant in Mode 1 (Power Operation) at 100 percent power, a chemistry technician sampling the Standby Liquid Control (SLC) system (**BR**) storage tank (**TK**) found plastic material on the sampling apparatus when the apparatus was removed from the tank. An inspection of the tank and pump (**P**) suction lines was performed and more plastic material was retrieved from the tank. A thorough inspection of the SLC storage tank internals was performed using an underwater camera. No material was found in the pump suction line. Cleaning continued until an inspection could not detect any remaining material. A conservative decision was made that the material in the tank could have been drawn into the pump suction lines thereby preventing their function. Therefore, this event is being reported in accordance with 10CFR50.73(a)(2)(v)(A) as a condition that alone could have prevented the fulfillment of a safety function needed to shutdown the reactor and maintain it in a safe shutdown condition.

BACKGROUND

The SLC system is an alternative reactivity control system. In the unlikely event that the control rods (**ROD**) did not fully insert, SLC could be used to inject a neutron-absorbing chemical (sodium pentaborate) to ensure the reactor reached and maintained a cold shutdown condition. The SLC storage tank contains the chemical solution for injection and is kept in standby during reactor operation. Plant technical specifications require periodic sampling and testing of the system to ensure its availability if needed.

The SLC pump suction pipe is not directly on the bottom of the tank. The suction pipe is connected to the tank on the side such that material that may fall into the bottom of the tank would not easily be entrained in the pump suction flow. The SLC storage tank is normally isolated from the pumps and there is no flow in the pump suction lines. Routine testing of the pumps and valves use a test tank vice the storage tank, so during normal plant operation, the SLC pumps do not take suction on the storage tank.

INVESTIGATION

While obtaining the monthly sample of the Standby Liquid Control (SLC) solution, part of a plastic bag approximately 10 inches square was retrieved with the chemistry sampling apparatus. Subsequent inspection of the SLC storage tank revealed pieces of plastic floating on the surface that ranged in size from two square feet to 1/2 inch square that appeared to be part of a trash bag. Three pieces, two on sparger (**AGT**) supports and one on the mixing heater (**EHTR**), were attached to components in the lower portion of the tank. Due to the foreign material attached to the tank components, both SLC subsystems were conservatively declared inoperable on 9/14/00 at 1422 in accordance with Technical Specification 3.1.7. Since inoperability of both SLC pumps results in a loss of safety function, this event was reported to the NRC on 9/14/00 at 1652.

A fine-mesh dip net was used to retrieve the objects floating on the surface of the SLC storage tank. The plastic pieces observed near the bottom of the tank were detached and were also removed with the fine-mesh net.

A thorough inspection of the SLC storage tank internals was performed using an underwater camera. The surface of the solution was examined from above the tank using the camera light. A boroscopic inspection was performed of the horizontal suction piping from the tank outlet to the downward elbow. No additional plastic fragments were observed in the SLC storage tank nor were any found at any time in the pump suction piping during any of these inspections.

To account for the possibility that trace amounts of plastic went undetected during the inspections, an evaluation on the effect of residual material assumed to be one square inch in size was performed. This evaluation determined that this material did not reduce the ability of the standby liquid control system to provide sodium pentaborate to the reactor within the design injection time range.

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Based on the removal of the foreign material, the subsequent SLC tank inspections, and an engineering evaluation of possible trace amounts of plastic remaining in the tank; both SLC subsystems were declared operable on 9/14/00 at 2059.

A Significant Event Response Team (SERT) was formed to investigate the event and recommend corrective actions to prevent recurrence of this event.

CAUSE ANALYSIS AND IMMEDIATE CORRECTIVE ACTIONS

Analysis of the foreign material determined that it consisted of one black trash bag that would have been approximately 18 inches by 24 inches in size when in its original state. This conclusion was based on the physical appearance of the material, the amount of material present, and the presence of one complete trash bag bottom seam measuring 8.5 inches in length. The SERT concluded that the trash bag most likely entered the SLC storage tank between 7/29/85 and 11/21/87.

The SERT determined that the root cause of this event was due to improper personnel work practices related to foreign material (FME) control during the above referenced time frame.

The following immediate corrective actions were implemented:

- A thorough tank inspection was performed and all observed plastic material was removed.
- A technical evaluation was performed to ensure SLC operability with the presence of trace amounts of plastic potentially left in the SLC tank after cleanup.
- A Significant Event Response Team (SERT) was formed to investigate the circumstances surrounding this event.

Additional actions to prevent recurrence are being determined through the corrective action process.

PREVIOUS OCCURRENCE EVALUATION

This event precedes the present FME program at River Bend. The Condition Report database was reviewed to identify other instances of FME control issues associated with a closed tank at River Bend Station. In addition, the CR database was reviewed for SLC problems that could be attributed to foreign materials discovered in the system. No prior conditions were identified in these two searches.

SAFETY SIGNIFICANCE

The SLC system was initially declared inoperable due to the potential for clogging by the plastic material of the pump suction lines during pump operation. After cleaning and inspection of the tank and suction lines, an Engineering evaluation indicated that the SLC system could perform its safety function. A risk assessment that assumed the inoperability of SLC system for a period of one year determined that the condition was non-risk significant. Further evaluation by the SERT determined that the potential for the condition to cause a loss of the SLC system was low. Based on this information, the safety significance of this event is minimal.

(Note: Energy industry component identification codes are annotated in the text as (**XXX**).)