ENTERGY

Entergy Operations, Inc.
River Bend Station
5485 U.S. Highway 61
P.O. Box 220
St. Francisville, LA 70775
Tel 504 336 6225
Fax 504 635 5068

James J. Fisicaro
Director
Nuclear Safety

April 25, 1995

U.S. Nuclear Regulatory Commission
Document Control Desk
Mail Stop P1-37
Washington, D.C. 20555

SUBJECT: River Bend Station - Unit 1
Docket No. 50-458
License No. NPF-47
Licensee Event Report 50-458/93-002-03
File Nos. G9.5, G9.25.1.3

RBG-41448
RBF1-95-0107

Gentlemen:

In accordance with 10CFR50.73, enclosed is the subject supplemental report. This final supplement documents the results of the corrective actions as previously established in Supplement 2.

Sincerely,

James J. Fisicaro

JJF/RMM
Enclosure

IE22

cc: U.S. Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 400
Arlington, TX 76011

NRC Sr. Resident Inspector
P.O. Box 1051
St. Francisville, LA 70775

INPO Records Center
700 Galleria Parkway
Atlanta, GA 30339-3064

Mr. C.R. Oberg
Public Utility Commission of Texas
7800 Shoal Creek Blvd., Suite 400 North
Austin, TX 78757

Louisiana Department of Environmental Quality
Radiation Protection Division
P.O. Box 82135
Baton Rouge, LA 70884-2135
ATTN: Administrator

NRC FORM 366 (5-92) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 5/31/95

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
River Bend Station	05000-458	1 of 7

TITLE (4)
Technical Specification Surveillance Requirements Not Properly Implemented in Logic System Functional Tests

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
									N/A	05000
02	12	93	93	002	03	04	25	95	FACILITY NAME: N/A	DOCKET NUMBER: 05000

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)									
POWER LEVEL (10)	100		20.402(b)		20.405(c)		50.73(a)(2)(iv)		73.71(b)		
			20.405(a)(1)(i)		50.36(c)(1)		50.73(a)(2)(v)		73.71(c)		
			20.405(a)(1)(ii)		50.36(c)(2)		50.73(a)(2)(vii)		OTHER		
			20.405(a)(1)(iii)	X	50.73(a)(2)(i)		50.73(a)(2)(viii)(A)		(Specify in abstract below and in text, NRC Form 366A)		
			20.405(a)(1)(iv)		50.73(a)(2)(ii)		50.73(a)(2)(viii)(B)				
			20.405(a)(1)(v)		50.73(a)(2)(iii)		50.73(a)(2)(x)				

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
T. W. Gates, Supervisor - Nuclear Licensing	504-381-4866

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)				EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
	YES (If yes, complete EXPECTED SUBMISSION DATE)	X	NO				

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

On February 12, 1993 with the plant at 100 percent power (Operational Condition 1), a deficiency in plant surveillance test procedures (STPs) was identified. During a safety system functional assessment (SSFA) performed by Quality Assurance, it was discovered that the logic system functional test (LSFT) that verifies the isolation of reactor core isolation cooling system (RCIC) valve E51-F045 on a reactor water level 8 signal was not being completely satisfied.

Technical Specifications (TS) require that an LSFT and simulated automatic operation of all channels be performed at least once per 18 months. A combination of three surveillance test procedures was intended to meet the TS surveillance requirements; however, the SSFA revealed that these procedures did not provide adequate overlap.

As a result of this initial finding, a comprehensive LSFT program was implemented to review River Bend LSFT's and develop a cross-reference matrix indicating the procedure overlap for TS required surveillances. This report documents the results of the competed review of STPs and the final root cause analysis. For each deficiency identified, the circuitry and/or components were tested and found to be operable.

REPORTED CONDITION

On February 12, 1993 with the plant at 100 percent power (Operational Condition 1), a deficiency in plant surveillance test procedures (STPs) was identified. During a safety system functional assessment (SSFA) performed by Quality Assurance, it was discovered that the Technical Specification (TS) requirements for the logic system functional test (LSFT) that verifies the isolation of reactor core isolation cooling system (RCIC) (*BN*) valve (*V*) E51-F045 on a reactor water level 8 signal were not completely satisfied by the surveillances used to implement the LSFT.

Technical Specification Table 4.3.5.1-1.b and TS 4.3.5.2 require that an LSFT and simulated automatic operation of all channels be performed at least once per 18 months. The combinations of STP-209-0601, STP-051-4226, and STP-051-4227 were intended to meet the TS surveillance requirements; however, the SSFA revealed that these procedures did not provide proper overlap.

As a result of this initial finding, a comprehensive LSFT program was implemented to review River Bend LSFT's and develop a cross-reference matrix indicating the procedure over lap for TS required surveillances. This report documents the process used in the review effort and provides the results of a more extensive root cause analysis than previously provided. A summary of this review is described in the next section and tabulates the identified conditions, the corresponding TS and the affected STPs. This report is submitted pursuant to 10CFR50.73(a)(2)(i)(b) as operation prohibited by the Technical Specifications.

INVESTIGATION

Prior to the identification of the initial finding on February 12 1993, RBS maintenance personnel had identified the need for documentation that would provide a detailed description of the testing requirements for each STP included in the LSFT program. The development of this documentation was originally scheduled to begin in May 1993. However, following the discovery of two additional deficiencies, as described in LER 93-002-01 (dated April 2, 1993), the schedule was accelerated, and the LSFT review process began in April 1993. This review was completed in December 1993.

The scope of this review consisted of STPs involved in the LSFT program and included:

- Definition of components required to be included in LSFTs
- Review of STPs and the corresponding TS LSFT requirements
- Identification of untested circuitry and components
- Testing of affected circuitry and components
- Verification of review results
- Documentation and development of an overlap matrix

Some of the STP inadequacies described below involved procedural changes that eliminated existing requirements to adequately perform the LSFT. In other cases, deficiencies had existed since initial plant startup. For each deficiency identified, the affected circuitry and/or components were tested. In each of these cases, the affected circuitry and/or components were found to be operable. A summary of the findings is provided as follows:

Affected Surveillance(s)	Technical Specification	Untested Circuitry
STP-051-4226 STP-051-4227	Table 4.3.5.1-1.b 4.3.5.2	Portions of the steam isolation valve to RCIC Turbine circuitry.
STP-051-4247 STP-051-4249	Table 4.3.3.1-1, A.1.d 4.3.3.2	Required relays in the LPCS/LPCI injection valve permissive circuitry were deleted during prior revisions of the STPs.
STP-508-4202	4.3.1.2 4.3.2.2.	Relay contacts in the DIV 2 BOP isolation valve circuit. Circuitry was tested previously but was omitted during a procedure revision.
STP-051-4247 STP-051-4248 STP-051-4249 STP-051-4250	4.4.2.2.1.b	Seal-in feature of SRV low-low set logic.
STP-209-5201 STP-209-5202 STP-207-4202 STP-207-5250 STP-207-5251 STP-207-4238 STP-207-4239	4.3.2.2.	A portion of wire which connects the RCIC isolation logic relay contacts to the valve operation relays.
STP-309-0601 STP-309-0602	Table 4.3.3.1-, 1.D.1.b 4.3.3.?	Contacts associated with the load shed function of switchgear 1ENS*SWG1A & 1B.
STP-309-0603	4.3.3.2	A portion of the sustained undervoltage trip circuitry of service water pump 1SWP*P2C.

STP-309-0603	Table 4.3.3.1-1.D.2.b 4.3.3.2	Standby diesel generator start and load shed contacts associated with a LOCA signal in series with a degraded voltage signal.
STP-309-0603	4.3.3.2	Two contacts which prevent manual or automatic opening (due to other HPCS initiation signals) of the HPCS injection valve (1E22A-MOVF004) prior to a level 2 signal or manual reset of the logic. A portion of the circuitry that closes the test return valves 1E22*MOVF0010 and 1E22*MOVF011 on a HPCS initiation signal. The HPCS backup battery charger supply breaker trip circuitry. Opening contact for 1E22*MOVF001 on HPCS initiation.
STP-501-4201 STP-501-4202 STP-501-4203 STP-509-4801	4.3.9.2.	A portion of the reactor vessel high level 8 trip circuitry for the main turbine trip system. A portion of the turbine stop valve closure alarm circuitry. A portion of the reactor vessel high level 8 trip circuitry for the reactor feed pumps. A wire connecting two high level 8 circuitry panels.
STP-051-4236 STP-051-4269 STP-051-4271 STP-051-5204	4.3.4.1.2	ATWS trip of reactor recirculation pump breakers 5A and 5B.
STP-051-4224 STP-051-4225 STP-051-4265 STP-051-4266 STP-051-4267 STP-051-4268 STP-204-4222 STP-204-4226	4.3.3.2	Contacts associated with the high drywell pressure seal-in circuitry. Portions of the high drywell pressure initiation circuitry. Contacts associated with LPCS/LPCI/RHR running permissive circuitry.

STP-505-4501 STP-505-4502 STP-505-4503 STP-505-4504 STP-505-4505 STP-505-4506 STP-505-4507 STP-505-4508	4.3.1.2	A portion of the APRM neutron trip setpoint setdown logic relays which are required to operate when reactor mode switch is taken out of RUN.
STP-051-4279 STP-051-4280 STP-051-4281 STP-051-4282 STP-051-4283 STP-051-4284	4.3.9.2	Several relays and wiring in the containment to annulus high differential pressure isolation logic.
STP-051-4250	4.3.3.2	Several interconnecting wires in the RHR low pressure permissive logic.
STP-058-4201 STP-508-4201 STP-508-4202	4.3.2.2	Portions of associated circuitry for reactor sample valves B33-MOVF019 and B33-MOVF020. Portions of circuitry associated with the Main Steam Line Drain Valve logic. Portions of the circuitry associated with containment/drywell isolation logic.
STP-207-4201 STP-207-4202	4.3.2.2 Table 4.3.2.1-1.5.d, e, and f	Interconnecting wiring in the RCIC equipment room differential and area temperature circuits and the RCIC turbine exhaust diaphragm high pressure circuitry.
STP-403-0601	4.6.5.5.b.1	Annulus Mixing System auto-start initiation for the alternate division loop low flow function.
STP-309-0601 STP-309-0602	4.6.5.5.b.1.a	Contact used to close Containment Unit Cooler Chilled Water supply on LOCA signal. Contacts associated with post LOCA re-alignment of the Annulus Mixing System to the Standby Gas System.

STP-309-0602	4.6.1.4.d.2	Portions of circuitry associated with solenoid isolation valves used to isolate instrument air from containment air locks subsequent to a LOCA.

ROOT CAUSE

The root cause was determined to be less than adequate technical reviews during the procedure development stage and less than adequate verification of overlap during the subsequent procedure revisions to ensure that the overlaps were maintained.

A TS "Overlap Matrix" was partially developed during initial procedure development; however, it was not maintained and therefore not available for use by the procedure writers and reviewers. As a result, the procedure revision review process at that time did not require the level of review that would identify omissions of components or wiring such as those identified. The initial level of detail reviewed for overlap identification was at the General Electric (GE) Elementary Drawing (ESK diagram) level; however, these drawings were being changed/updated throughout the procedure development process. Based on the re-verifications, the construction connection diagrams would have been better suited for the initial LSFT procedure development.

Other STP deficiencies, unrelated to LSFTs, were identified during the LSFT review, as documented in LERs 93-005, 93-012, 94-020, 94-021, and 94-026. In each of these cases, existing surveillance tests did not adequately implement the TS requirements. These deficiencies have been addressed by the TS review as discussed below.

CORRECTIVE ACTION

As of August 31, 1992, procedural requirements were established requiring persons performing an independent review of revisions to STPs to have completed training on the proper method of 10CFR50.59 review. The required training includes the process to verify TS and USAR requirements. Also, a detailed checklist is now required which includes items for verifying that TS requirements are met. These actions were in response to inadequacies in the procedure revision process and were completed prior to the discovery of the LSFT inadequacies reported in this LER.

The LSFT review program was completed in December, 1993 to ensure that proper overlap exists between STPs that perform LSFT's. An LSFT database and matrix were developed as a result of this effort and has been issued to departments responsible for STPs included in the LSFT program. This matrix is controlled in accordance with ADM-0015, "Station Surveillance Test Program," which requires a review of the matrix during STP revisions. Utilization of this matrix and the increased stringency of procedure revision process provides assurance that TS requirements are met.

To bound the issue of STP adequacy with respect to TS, a review was initiated of River Bend STPs and the corresponding TS requirements. This review was completed in January 1995.

SAFETY ASSESSMENT

The Technical Specification surveillance requirements for LSFT overlap were not satisfied for the STPs listed in the attachment. The portions of circuitry that were not tested have since been verified to be operable. This provides confidence that the portions of circuitry that had not been appropriately tested were in fact operable.

Note: Energy Industry Identification Codes are indicated in the text as (*XX*).