GULF STATES UTILITIES COMPANY
RIVER BEND STATION POST OFFICE BOX 220 ST. FRANCISVILLE, LOUISIANA 70775
AREA CODE 504 635-6094 346-8651

May 15, 1991
RBG-35,015
File Nos. G9.5, G9.25.1.3

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Gentlemen:

River Bend Station - Unit 1
Docket No. 50-458

Please find enclosed Licensee Event Report No. 91-008 for River Bend Station - Unit 1. This report is submitted pursuant to 10CFR50.73.

Sincerely,

W. H. Odell
Manager - Oversight
River Bend Nuclear Group

WHO/POB/JGC/HMM/MRC
LAE/PDG/GAB/DCH/MRC/pj
End

cc: U.S. Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 1000
Arlington, TX 76011

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

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Mr. C. R. Oberg
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Austin, TX 78757

IE22
1/1

NRC FORM 366 (6-89)

U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

APPROVED OMB NO. 3150-0104
EXPIRES: 4/30/92
ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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TITLE (4): LACK OF FIRE WRAP/INADEQUATE FIRE BARRIER CAUSED BY INCONSISTENCY IN DESIGN BASES DOCUMENTATION

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 NAMES	DOCKET NUMBER(S)
												0 5 0 0 0
0 4	1 5	9 1	9 1	–	0 0 8	–	0 0	0 5	1 5	9 1		0 5 0 0 0

OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)					
1		20.402(b)		20.405(c)		50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10)		20.405(a)(1)(i)		50.36(c)(1)		50.73(a)(2)(v)	73.71(c)
1 0 0		20.405(a)(1)(ii)		50.36(c)(2)		50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	X	50.73(a)(2)(i)		50.73(a)(2)(viii)(A)	
		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
	AREA CODE
L. A. England, Director - Nuclear Licensing	5 0 4 3 8 1 – 4 1 4 5

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 fifteen single-space typewritten lines) (16)

At 1345 hours on 4/15/91, with the reactor at full power in Operational Condition 1, it was discovered that electrical cables located in fire area ET-2, which may cause spurious operation of valves 1E51*MOVF063 (RCIC inboard steam isolation valve) and 1E51*MOVF078 (RCIC vacuum breaker valve), did not have fire wrap contrary to Fire Hazards Analysis (FHA) requirements. At 1300 on 4/23/91, additional cables, which could cause the same problem were found in fire areas AB-2, C-2 and C-6. RCIC is required by the FHA for safe shutdown in these fire areas. Since these valves are required not to change position for operation of RCIC and fire damage to these cables may cause loss of RCIC, the cables would require wrapping in these fire areas.

Upon discovery of this condition, the affected cables were treated as having missing fire barriers and the action statement prescribed in Technical Specification 3/4.7.7, "Fire Rated Assemblies", was implemented for areas containing these cables. Errors made during the original development of the FHA were the cause for the identified cables not being wrapped in the identified fire areas. Corrective action will include the use of an alternate system for RCIC and/or providing the required wrap. Safe shutdown in these fire areas, with loss of RCIC, can be achieved by depressurizing with SRVs and low pressure injection and cooling using RHR-A; therefore, the health and safety of the public were not adversely affected.

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

REPORTED CONDITION

At 1345 hours on 4/15/91, with the reactor at full power in Operational Condition 1, it was reported to the shift supervisor that certain electrical cables associated with valves 1E51*MOVF063 (*ISV*) (RCIC inboard steam isolation valve) and 1E51*MOVF078 (*VTV*) (RCIC vacuum breaker valve) located in fire area ET-2 (Electrical Tunnel "B" West), did not have fire wrap. This discovered condition is contrary to requirements contained in the FHA. While working on resolution of this issue, additional cables which could cause the same problem were found in fire areas AB-2, C-2 and C-6. At 1300 hours on 4/23/91, these additional areas of concern were reported to the shift supervisor. The FHA lists Method 1 as the analyzed method of shutdown for fire areas AB-2, C-2, C-6 and ET-2. Method 1 shutdown is identified as using 3 safety relief valves (SRVs) (*RV*) for reactor pressure vessel (RPV) (*JE*) pressure control, RCIC for RPV level control, and RHR-A for suppression pool cooling and shutdown cooling. The FHA lists these valves as "Passive Valves" required for Method 1 shutdown which means the valves must not change position due to spurious signals on their associated circuits. The identified cables are associated circuits for these valves and the FHA states these circuits should be wrapped in these fire areas.

The affected cables did not have the required fire wrap (fire barrier) since plant startup; therefore, the fire barrier is considered inoperable per Technical Specification 3/4.7.7 and this report is submitted pursuant to 10CFR50.73(a)(2)(i)(B) as operation prohibited by the Technical Specification.

INVESTIGATION

The River Bend Station - Unit 1 Appendix R Data Management System lists equipment, raceways, and cables by fire area. A review of this data base found inconsistencies between the data base and the FHA for the identified cables which may cause spurious operation of valves 1E51*MOVF063 and 1E51*MOVF078. The FHA indicates the cables should be wrapped in these fire areas but the data base indicates the cables do not require wrap.

FHA Section V "Fire Hazards Evaluation Conclusions" states that for fire areas AB-2, C-2, C-6 and ET-2 shutdown can be achieved by Method 1. FHA Section I and Tables 1, 2 and 6 identify Method 1 shutdown equipment. Reactor core isolation cooling (RCIC) (*BN*) is used for reactor pressure vessel (RPV) level control in Method 1 shutdown. The RCIC inboard steam isolation valve 1E51*MOVF063 and the RCIC vacuum breaker valve 1E51*MOVF078 are passive valves for Method 1 shutdown which means they must not change position due to spurious signals on associated circuits. FHA Table 2 states that associated circuits for these two valves, which may result in spurious signals, are wrapped in these fire areas.

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Circuit analysis on cables 1ICSABC001 and 1ICSABC004 (*CBL2*) found that fire damage can cause spurious closure of valve 1E51*MOVF063 which would prevent steam from reaching the RCIC turbine (*TBR*). Circuit analysis on cables 1ICSEBC001 and 1ICSEBC003 found that fire damage can cause spurious opening of valve 1E51*MOVF078 which would adversely affect RCIC vacuum breaker capabilities.

Since these valves are required not to change position for operation of RCIC and RCIC is required for safe shutdown in the affected fire areas, the valves are correctly classified in the FHA as "Passive - Method 1 Components". Therefore, to comply with the USAR, FHA, and 10CFR50 Appendix R Section III.G, the cables would require wrapping in fire areas AB-2, C-2, C-6 and ET-2. With the exception of FHA Table 8 with regards to fire area AB-2, the FHA correctly indicates these cables require wrapping in these fire areas. The Appendix R data base is incorrect as it indicates the cables are not required to be wrapped.

CORRECTIVE ACTIONS

A detailed review and verification of the FHA by an independent contractor was initiated as a result of NRC Inspection Report No. 50-458/90-02. The condition as described in this report was identified by the independent contractor during resolution of questions identified in the review and verification process. Resolution of all questions arising from the independent review and verification of the FHA is continuing and is scheduled to be completed by the end of January, 1992.

Upon discovery of this condition, the affected cables were treated as having missing fire barriers and the action statement prescribed in Technical Specification 3/4.7.7, "Fire Rated Assemblies", was implemented for areas containing these cables. With the exception of the Division II electrical room located in the northeast corner of "D" tunnel on elevation 70', fire watches had been previously in place for the affected areas due to operability questions associated with penetration seals. However, there is no assurance that fire watches had been in place for the entire time period since startup.

For the affected fire areas, an analysis will be performed to determine if an alternate system for RCIC, such as high pressure core spray (HPCS) (*BJ*), is available (free of fire damage) in each fire area for incorporation into the FHA. Development of design bases documentation for using HPCS in Appendix R, Safe Shutdown Analysis was identified in resolving questions resulting from the independent review of the FHA and is scheduled to be completed by the end of January, 1992. Determination of the acceptability of using HPCS as an alternate for RCIC in these fire areas is included in development of this design bases documentation.

If an acceptable alternative for loss of RCIC in these fire areas is not identified, the following actions will be taken: 1) A one hour fire wrap will be provided for the affected circuits in fire areas C-2, C-6, and ET-2, since suppression and detection systems are installed in these fire areas, and 2) A three hour fire wrap will be provided for the affected circuits in fire area AB-2, since this area has a detection system, but no suppression.

Errors made during the original development of the FHA were the cause of inconsistencies found within the FHA and between the FHA and the Appendix R data base. These inconsistencies resulted in the identified circuits not being protected in accordance with 10CFR50, Appendix R, Section III.G. A contributing factor involving these errors appears to be the fact that the affected components are Division II and are required for Method 1 shutdown, which primarily uses Division I and III components. The present schedule for resolution of all identified questions resulting from the independent review of the FHA is January, 1992. Completing this review/verification of the FHA and resolution of identified questions will assure: 1) Compliance with USAR, FHA, and regulatory requirements, 2) Similar deficiencies, if any exist, will be identified and resolved and 3) Completion of design bases documentation, which should prevent recurrence of similar incidences.

A similarity review of earlier LERs revealed one similar event in that deficient fire barriers were rendered inoperable in accordance with River Bend Station Technical Specification 3.7.7.a. The earlier event reported in LER 87-005 involved existing but inadequate barriers; this event involved lack of or missing barriers.

SAFETY ASSESSMENT

The FHA states safe shutdown can be achieved in fire areas AB-2, C-2, C-6 and ET-2 using Method 1 shutdown. Method 1 is identified as using 3 SRVs for RPV pressure control, RCIC for RPV level control, and RHR-A for suppression pool cooling and shutdown cooling. Since the affected cables were not wrapped in these fire areas, fire damage could cause loss of RCIC. With loss of RCIC, a review was made to determine if an alternate method of RPV level control was available in these fire areas. Review of cable routing for the 3 Appendix R Method 1 safety relief valves and the additional 13 SRVs (not presently credited in the FHA) has shown that all 16 SRVs, utilizing the "A" solenoid, would not be affected by a fire in these fire areas and could be operated via their main control room switches. Review of cable routing for the Method 1 alternate shutdown cooling with RHR-A and the suppression pool cooling with RHR-A has shown they are not adversely affected by fire damage in these fire areas. Therefore, safe shutdown could be achieved with loss of RCIC in these fire areas by depressurizing with the SRVs and low

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pressure injection and cooling using RHR-A. This demonstrates that a fire in any of the affected fire areas would leave at least one method of safe shutdown unaffected. The health and safety of the public were not adversely affected as a result of this event.

NOTE: Energy Industry Identification System Codes are identified in the text as (*XX*).