



**GULF STATES UTILITIES COMPANY**

IVER BEND STATION    POST OFFICE BOX 220    ST FRANCISVILLE, LOUISIANA 70775

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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. 91-020 for River Bend Station - Unit 1. This report is submitted pursuant 10CFR50.73.

Sincerely,

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

*Handwritten initials: JPS, AB, etc.*  
LAE/PDG/GAB/DCH/CRM/kvm  
*Handwritten initials: DCH*

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

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

INPO Records Center  
1100 Circle Parkway  
Atlanta, GA 30339-3064

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

*Handwritten: JE27*

LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 300 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-330), U.S. NUCLEAR REGULATORY COMMISSION WASHINGTON, DC 20545, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET WASHINGTON, DC 20503.

FACILITY NAME (1) <b>RIVER BEND STATION</b>	DOCKET NUMBER (2) <b>05000458</b>	PAGE (3) <b>1 OF 08</b>
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TITLE (4)  
**HYDROGEN IGNITERS DECLARED INOPERABLE DUE TO DISCREPANCIES BETWEEN THE SURVEILLANCE PROCEDURE AND THE TECHNICAL SPECIFICATIONS**

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)
10	24	91	91	020	00	11	24	91				05000
THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5. (Check one or more of the following) (11)												

OPERATING MODE (9) <b>1</b>	POWER LEVEL (10) <b>100</b>	20.402(b)	20.406(a)	50.73(a)(2)(v)	73.71(b)
		20.406(a)(1)(ii)	50.73(a)(1)	50.73(a)(2)(v)	73.71(a)
		20.406(a)(1)(iii)	50.73(a)(2)	50.73(a)(2)(v)(A)	OTHER (Specify in Abstract Below and in Text, NRC Form 308A)
		20.406(a)(1)(iv)	X 50.73(a)(2)(ii)	50.73(a)(2)(v)(B)	
		20.406(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(v)(C)	
		20.406(a)(1)(vi)	50.73(a)(2)(iv)	50.73(a)(2)(v)(D)	

LICENSEE CONTACT FOR THIS LER (12)

NAME <b>L.A. ENGLAND, DIRECTOR - NUCLEAR LICENSING</b>	TELEPHONE NUMBER
	AREA CODE <b>504381</b> - <b>4145</b>

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

CAUSE	SYSTEM	COMPONENT	MANUFAC TURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFAC TURER	REPORTABLE TO NRC

SUPPLEMENTAL REPORT EXPECTED (14)

<input checked="" type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input type="checkbox"/> NO
EXPECTED SUBMISSION DATE (15)	
MONTH DAY YEAR <b>0 4 0 1 9 2</b>	

ABSTRACT (Limit to 1400 words, i.e., approximately fifteen single space typewritten lines) (16)

At 0800 hours on October 24, 1991, with the reactor in Operational Condition 1 (Power Operation), while performing a review of Technical Specification (TS) Section 3/4.6.6.3 "Primary Containment/Drywell Hydrogen Ignition System", a discrepancy was found between the TS and the applicable surveillance test procedure (STP). The STP has been non-conservative with respect to the TS. Sixty-Two hydrogen igniters were declared inoperable and the reactor was shutdown pursuant to TS Section 3.0.3. Therefore, this report is submitted pursuant to 10CFR50.73(a)(2)(i)(A) (plant shutdown required by the TS) and 10CFR50.73(a)(2)(i)(B) (operation prohibited by the TS).

Corrective actions include revision of the STP to restore consistency with the TS, additional training, and a review of a sample of STP revisions and temporary change notice for 10CFR50.59 applicability, and a verification of a sample of STPs against the TS.

The reactor was shutdown in accordance with TS 3.0.3. Subsequently, hydrogen igniter system operability was verified pursuant to TS 4.6.6.3.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-330), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20545 AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503

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TEXT (if more space is required, use additional NRC Form 388A's) (17)

REPORTED CONDITION

At 0800 hours on October 24, 1991, with the reactor in Operational Condition 1 (Power Operation), while performing a review of Technical Specification Section 3/4.6.6.3 "Primary Containment/Drywell Hydrogen Ignition System", a discrepancy was found between the Technical Specifications (TS) and surveillance test procedure (STP)-254-1600 Revision 5, "Hydrogen Igniter 18 Month Current/Voltage and Temperature Check." The TS Bases provides a unique definition of "inaccessible areas." This definition is based on "areas that have high radiation levels during the entire refueling outage period." The STP has been non-conservative with respect to this definition since July 25, 1985. In addition, igniters that were properly classified as "inaccessible" in the STP were not being tested properly per the TS surveillance requirements. Sixty-Two hydrogen igniters were declared inoperable and the reactor was shutdown pursuant to TS Section 3.0.3. Therefore, this report is submitted pursuant to 10CFR50.73(a)(2)(i)(A) (plant shutdown required by the TS) and 10CFR50.73(a)(2)(i)(B) (operation prohibited by the TS).

INVESTIGATION

On 10/24/91 at 0800 hours, Design Engineering discovered that STP-254-1600 Revision 5 "Hydrogen Igniter 18 Month Current/Voltage and Temperature Check" did not conform with the definition of "inaccessible" as defined in the Bases of the Technical Specifications. A plant shutdown was commenced on 10/24/91 at 1449 hours as required by Technical Specification 3.0.3.

On 11/23/90, Temporary Change Notice (TCN) 90-1270 was initiated against STP-254-1600 Rev 5. The purpose of this TCN was to change the classification of igniters 1A through 10B from "accessible" to "inaccessible." These igniters are located on the containment dome which makes it potentially hazardous to personnel and extremely difficult to conduct testing due to their location. The TCN was written based on the physical location of these igniters, went through the review process and was permanently approved on 12/6/90. No one in the review process realized that a unique definition for "inaccessible" existed in the TS. Administrative procedure (ADM)-0003, "Development, Control and Use of Procedures specifically prohibits the use of the TCN process when a change to the TS is required.

Further review of STP-254-1600 revealed that the procedure had not conformed to the TS since the issuance of Rev 4 dated 08/03/85. GSU's investigation has revealed three failures that led to the violation of the Technical Specifications, as follows:

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ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST 300 HRS FORWARD 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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TEXT (if more space is required, use additional NRC Form 385A's) (17)

- Revision 4 to STP-254-1600 was issued without incorporation of changes to TS Section 3/4.6.6.3 and the associated Bases. The draft for Technical Specification table 3.6.6.3-1 showed the igniter locations and accessibility classifications. This table was removed and a definition of "inaccessible" was placed in the TS bases during initial TS development. In addition, for those igniters that were classified as "inaccessible", the TS were changed to require current/voltage measurements for each igniter assembly.

While the changes to the TS were appropriate, the revision (Rev 4) to the STP was issued on 8/3/85 without incorporating these changes.

- Reviews during the revision and TCN processes for STP-254-1600 were not adequate. Errors and/or inconsistencies with TS were not detected. Note that when Rev 3 of the STP was issued, igniter 11B was dropped from the data sheet. This igniter was not tested for 6 years and 56 days. This error, as well as the failure to incorporate the TS changes into the STP, went undetected during revisions to the STP and during the preparation of TCNs to the STP.
- The 10CFR50.59 review for TCN 90-1270 was inadequate. The review did not detect the failure to incorporate the previous TS changes into the STP and review by the Facility Review Committee (FRC) was not recognized as required.

ROOT CAUSE

Three root causes have been identified for this event. Each root cause corresponds to the three failures identified in the investigation section, as follows:

- The engineer responsible for the TS review did not realize that the definition of "inaccessible", added to the TS bases, constituted a change in the intent of the TS. Section 3/4.6.6.3 of the TS was changed to remove the hydrogen igniter location/classification table from the body of the TS and add the definition of "inaccessible" to the bases. This change was made in the month preceding the issuance of the low power operating license on 8/29/85. The engineer responsible for GSU Technical Staff reviews of the TS was also responsible for disseminating TS changes to contractors. A contractor was responsible for the development of plant procedures during this time. The Technical Staff engineer would determine if a TS change was a change of intent. If there was no change of



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ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQ. EST. 100 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (RPM-330) 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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TEXT IF MORE SPACE IS REQUIRED, USE ADDITIONAL NRC Form 3854 (1/77)

intent, he would make a subjective decision whether or not to notify applicable groups of the change. Interviews with this engineer revealed that he remembers there were many discussions with the NRC Staff concerning accessible/inaccessible igniters, the industry position, and how to determine operability. To eliminate future revisions to TS as plant conditions changed, a determination was made between GSU and the NRC Staff to remove the location/classification tables from TS, provide a definition for inaccessibility, and include the location/classification tables in the procedure. As far as the Engineer recalls, he felt that this change to TS did not change the intent of the specification and did not warrant the issuance of a change notice. He did not realize that the restrictive definition for "inaccessible", added to the bases, did not match the accessibility classifications that were removed from the TS body which still remained in the STP. Based on this determination, the contractor responsible for plant procedure development was not notified of the change to Specification 3/4.6.6.3 and therefore, did not evaluate applicability of the changes to STP-254-1600.

- 2) The procedural review and TCN processes did not assure an adequate technical review. This was due to a lack of procedural guidance for reviewers and insufficient training. Errors and inconsistencies went undetected in the following:

Revision 5 issued on 10/28/87  
Revision 5 biannual review performed on 8/22/89  
TCN 90-1270 issued on 11/23/90

Typically, the content of previous revisions of procedures are considered to be technically correct and the review focuses on the changes being made between the last revision and the proposed revision. STP-254-1600 was able to be performed as written. The problem was that igniters were tested based on the accessibility classification of the particular igniter, which was in error. In addition, the absence of igniter 11E from the data sheet was not discovered until the investigation resulting from this event. Furthermore, TCN 90-1270 introduced an additional error into the procedure by reclassifying igniters 1A through 10B as inaccessible based on physical accessibility rather than the TS definition.

- 3) The 10CFR50.59 review was inadequate for TCN 90-1270. Changing the classification of igniters 1A through 10B from "Accessible" to "Inaccessible" constituted a change to TS. The

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ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST 500 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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STP revision process should have been used in this instance as well as a required review by the Facility Review Committee (FRC) to determine 50.59 applicability.

Administrative procedure (ADM)-0003 "Development, Control and Use of Procedures", requires that a series of eight questions be answered during the review/TCN process. These questions are used to flag those procedures that require a 10CFR50.59 review and safety evaluation by the FRC. The TCN process cannot be used if the answer to any of these questions is "yes." TCN 90-1270, which changed the classification of igniters 1A through 10B, was a change to Technical Specifications based on the definition of "inaccessible" given in the bases section of the TS. The question, "Change to the Tech Specs or Operating License?" was marked "NO" by the TCN initiator and reviewed and approved by three maintenance and one operations reviewers.

The maintenance foreman that prepared TCN 90-1270 had not received any training on the content or use of TS and was not aware that there was a Bases Section in the TS. There has been great reliance on the Shift Supervisor/Control Operating Foreman (SS/COF) during their review of TCNs to assure accuracy with regards to impact of the change on TS, the USAR and other licensing documents. A secondary contributor is that unique TS definitions are not normally placed in the bases of TS. The operators interviewed during this investigation stated that they only review the Bases of TS when there is a question of interpretation. The condition of the location/accessibility tables in STP-254-1600, Rev 5 reinforced the perceived definition of inaccessible as one dealing with physical inaccessibility. Based on the condition of the STP, the information provided in the body of the TS, and the request for the change of accessibility classification (TCN 90-1270), there was no question of interpretation and therefore, the Bases were not reviewed.

A review of previous LERs has revealed five similar events, as follows:

- 1) LER 86-013: As a result of an STP deficiency, concerning the main steam line area temperature detector, personnel did not enter the appropriate TS Action Statement. The STP was revised and reviewed for similar errors.
- 2) LER 86-059: The STP to verify that low pressure coolant injection (LPCI) system piping was full of water was found to be in error. The STP was

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ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 300 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (F-51), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (31500104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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TEXT (if more space is required, use additional NRC Form 3054 (2) (17))

not properly revised following plant modifications and thus did not reflect TS requirements regarding the location of the high point vents.

- 3) LER 88-010: The secondary containment STP did not adequately reflect TS 3.6.5 for all required doors and equipment hatch covers. GSU revised the applicable STPs and conducted a procedure history sampling review to address the lack of administrative controls during the period of time that STPs were being turned over.
- 4) LER 89-003: The TS surveillance for AC circuits inside containment had not been properly performed for all required AC circuits due to inadequate original procedure development. As corrective action GSU began reviewing all STPs against the TS during the STP biennial reviews. This process is continuing, and will proceed until all STPs have had this review.
- 5) LER 91-010: Containment isolation valves 1CPP\*MOV104,105 and 1CPP\*SOV140 were not being verified as closed and secured every 31 days per TS 4.6.1.1.b. This was caused by an omission in the original STP development. GSU revised the STP accordingly and performed a review of design verification commitments to identify those associated with actions requiring procedural control.

CORRECTIVE ACTION

A summary of immediate corrective actions follows:

- 1) The plant was shut down in accordance with TS 3.0.3.
- 2) An Engineering review was performed to determine where to take current/voltage readings for each "inaccessible" igniter in accordance with the TS.
- 3) TCN 91-0938 was written against STP-254-1600 Rev 5 to change the classification of igniters 1A through 10B from "inaccessible" back to "accessible" and igniter testing commenced.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (R-120), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555 AND TO THE PAPERWORK REDUCTION PROJECT (150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503

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- 4) TCN 91-0940 was written against STP-254-1600, Rev 5 to change the igniter location/accessibility tables to agree with the definition of "inaccessible" in the TS Bases. In addition, igniter 11B was restored to the data sheet.
- 5) All igniters in question were tested and the surveillance requirements of TS 4.6.6.3.b were met prior to plant startup. Note that one hydrogen igniter was inoperable prior to discovery of this event. One additional igniter was found to be inoperable as a result of the performance of the surveillance requirements after plant shutdown; however, the hydrogen igniter system operability requirements were satisfied.

The following corrective actions are in the process of being implemented:

- 1) GSU is revising STP-254-1600 (Rev 6). This revision will place the TS definition of "inaccessible" in the STP, and provide a reference to the condition report documenting this event and evaluation. This will act as the first barrier in preventing someone from preparing a TCN to change accessibility classifications on igniters based on physical location.
- 2) Administrative procedure (ADM)-0003, "Development, Use and Control of Procedures," will be revised to provide the following:
  - a) Guidance on what areas to review in the USAR, TS, Operating License, Environmental Protection Plan, Security or Safeguards Contingency Plans and the Emergency Plan when responding to the safety evaluation applicability questions during procedure revisions or changes.  
  
Example: The person reviewing the TS should review TS interpretations, Actions, Surveillance Requirements, and the Bases.
  - b) An area to justify (similar to ENG-3-004, "Safety and Environmental Evaluations") the answer to each applicability question.
- 3) GSU will provide training to all plant staff personnel involved in the procedure preparation and review processes for STPs. This includes training on the role of the independent reviewer. This training will be based on next revision of ADM-0003 and the detail provided within the procedure on how to perform the 10CFR50.59 applicability review and independent



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APPROVED OMB NO 3150-0104  
EXPIRES 4/30/92

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT WASHINGTON DC 20555 AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104) OFFICE OF MANAGEMENT AND BUDGET WASHINGTON DC 20503

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review processes. GSU will evaluate the need for additional training as it relates to other procedures.

- 4) During licensed operator requalification training, training will be provided on the importance of reviewing the TS Bases when the TS are used.
- 5) A sample of STP revisions and TCNs will be selected for a review of 10CFR50.59 applicability. The purpose of this review is to determine if those procedures requiring 10CFR50.59 reviews have been correctly identified by the procedure review process.
- 6) A sample of STPs will be verified against the TS to assure that they adequately implement the TS requirements.
- 7) Evaluate the personnel safety issues concerning hydrogen igniter testing and if appropriate, request TS relief for those hydrogen igniters located in the containment dome.
- 8) Evaluate the need for developing additional procedural guidance concerning the section procedure review and revision process.

A supplement report will be provided by April 1, 1992 to provide the results of the training evaluation and the 50.59 applicability review.

**SAFETY ASSESSMENT**

The reactor was shutdown in accordance with TS 3.0.3. Subsequently, the hydrogen igniter system operability was verified pursuant to TS 4.6.6.3.