

APPENDIX B

U. S. NUCLEAR REGULATORY COMMISSION  
REGION IV

NRC Inspection Report: 50-458/84-31

Permit: CPPR-145

DOCKET: 50-458

Category: A2

Licensee: Gulf States Utilities (GSU)  
P. O. Box 2951  
Beaumont, TX 77704

Facility Name: River Bend Station (RBS)

Inspection At: River Bend Station, St. Francisville, LA

Inspection Conducted: September 16 through October 31, 1984

Inspector: J. Barnes 12-5-84  
for D. Chamberlain, Senior Resident Inspector Date

Accompanying NRC Personnel: P. A. Prendergast,  
Engineering Aide

Approved: J. Barnes 12-5-84  
for J. P. Jaudon, Chief, Project Section A, Date  
Reactor Project Branch 1

Inspection Summary

Inspection Conducted September 16 through October 31, 1984  
(Report 50-458/84-31)

Areas inspected: Routine, unannounced inspection or site tours, status of diesel generator testing, witness of preoperational testing, overall preoperational test program review, and preoperational test procedure review. The inspection involved 153 inspector-hours onsite by one NRC inspector and one NRC engineering aide.

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Results: Within the areas inspected, two violations were identified in the area of preoperational test procedure review (inadequate preoperational test procedure and inadequate Class-1E circuit separation).

DETAILS

1. Persons Contacted

Principal Licensee Employees

- Banks, Joint Test Group Records and Procedures Supervisor
- \*B. Bemis, Quality Assurance Engineer
- \*J. L. Burton, General Maintenance Supervisor
- \*T. C. Crouse, Manager, Quality Assurance
- \*P. J. Dautel, Licensing Staff Assistant
- \*J. C. Deddens, Vice President, River Bend Nuclear Group
- P. E. Freehill, Superintendent, Startup and Test
- P. D. Graham, Supervisor, Startup and Test
- \*T. O. Gray, Director, Operations Quality Assurance
- J. R. Hamilton, Supervisor, Site Engineering Group
- \*L. P. Handy, Quality Assurance Engineer
- \*R. W. Helmick, Project Engineer
- R. G. Jones, Senior Planner and Scheduler Specialist
- \*I. M. Malik, Senior Quality Assurance Engineer
- J. Mead, Senior Electrical Engineer
- \*T. F. Plunkett, Plant Manager
- \*S. R. Radebaugh, Assistant Superintendent, Startup and Test
- S. Sawa, Control Supervisor
- \*K. E. Suhrke, Manager, Executive Staff
- B. Sutor, Engineer, Startup and Test
- J. Venable, Mechanical Maintenance Supervisor
- \*M. E. Walton, Technical Assistant to Project Engineer

Stone and Webster

- \*D. P. Barry, Superintendent of Engineering
- S. R. Beaver, Nuclear Steam System Supplier Principal Engineer
- \*W. I. Clifford, Resident Project Manager
- \*R. J. Fay, Chief Inspection Supervisor
- \*F. W. Finger, III, Project Manager, Preliminary Test Organization
- R. W. Frayer, Project Engineering
- \*B. R. Hall Assistant Superintendent, Field Quality Control
- \*P. D. Hanks, Construction Superintendent
- R. Otis, Senior Inspector, Field Quality Control
- T. M. Shea, Senior Electrical Engineer
- \*R. L. Spence, Superintendent, Field Quality Control

General Electric Company

- \*T. L. Garg, Principal Engineer
- \*G. McGee, Manager, Site Engineering
- \*W. A. Segraves, Manager, Control and Instrumentation Site Engineering
- E. Sigg, Construction Engineer
- \*W. E. Smith, Site Manager

The NRC senior resident inspector (SRI) also interviewed additional licensee, Stone and Webster (S&W), and other contractor personnel during this inspection period.

\*Denotes those persons that attended the exit interview. The NRC engineering aide, P. A. Prendergast, also attended the exit interview.

2. Site Tours

The SRI toured areas of the site during the inspection period to gain knowledge of the plant and to observe general job practices. The site tours conducted included a system walkdown of the high pressure core spray system and the control rod drive system with the responsible test personnel. The SRI also discussed testing status and identified problems with the test personnel.

No violations or deviations were identified in this area of inspection.

3. Status of Diesel Generator Testing

During this inspection period, the 24-hour run of the "A" Transamerica Delaval diesel engine was completed and the diesel was turned over to GSU startup and test for preoperational testing. The majority of preoperational test procedure 1-PT-309-1, "Diesel Generator 1A," has been completed. Diesel generator "B" has been reassembled and preliminary testing is well underway. The SRI will continue to monitor the diesel testing program and report on status and problem resolutions during future NRC inspections.

No violations or deviations were identified in this area of inspection.

4. Witness of Preoperational Testing

The SRI witnessed the high pressure core spray (HPCS) system vessel injection test performed on October 10, 1984. The test witness revealed a good symmetrical spray pattern over the core area. The system rated flow rate of approximately 5450 gallons per minute was obtained without full opening of the HPCS injection valve. When the HPCS injection valve was fully opened, the run out flow was approximately 5450 gallons per minute which is well within the maximum allowed run out flow of 5620 gallons per minute. This verifies proper sizing of the HPCS system discharge flow orifice.

No violations or deviations were identified in this area of inspection.

5. Overall Preoperational Test Program Review

This area of inspection was conducted to review the established programs for the incorporation of design changes into the test program, temporary modifications, jumpers and bypasses, training, document control, and

maintenance during preoperational testing. The results of the review for the aforementioned functional areas are as follows:

a. Incorporation of Design Changes into the Test Program:

The purpose of this review was to verify that a formal method had been established to bring proposed or implemented design changes to the attention of the test group for incorporation into the test program. The focus of the review was those changes that occur after system turnover to Gulf States Utilities (GSU) for preoperational testing. GSU has several methods of reviewing design changes that occur after the preoperational test procedure is written. For example, all engineering and design coordination reports (E&DCRs) and nonconformance and disposition reports (N&Ds) are reviewed by the startup and test group for test procedure impact. Also, prior to and after the performance of a preoperational test, the latest revision and reference documents and any outstanding design changes must be reviewed for impact on the test performance. In addition to the above, any design changes that require physical rework must be implemented via a construction work request or a startup trouble ticket and these documents require a review for retest requirements.

It was noted by the SRI that GSU continues to rely on the S&W program for formal tracking and work closeout of E&DCRs during the preoperational test phase. The S&W program requires final work closeout of E&DCRs by field quality control and the backlog of open E&DCRs has gone from approximately 5727 in July 1984 to 8308 in October 1984. The SRI emphasized to GSU management that all design changes would require final work closure or reconciliation for potential test program impact.

No violations or deviations were identified in this area of inspection.

b. Temporary Modifications, Jumpers, and Bypasses:

The purpose of this review was to verify that written administrative controls have been established for controlling temporary modifications, jumpers, and bypasses during the preoperational test phase. The SRI reviewed Test Instruction (T.) 17, "Test Controls," Revision 5. TI 17 establishes administrative control by requiring a formal log of temporary modifications, by assigning the shift supervisor responsibility for maintaining the log, and by requiring physical tagging of temporary modifications so that they are readily identifiable. TI-17 does not require independent verification for placing or removal of temporary modifications as required by Regulatory Guide 1.33. GSU has issued a Final Safety Analysis Report (FSAR) change request (14.2-21) which states that Regulatory Guide 1.33 will be fully implemented with initial startup and has only limited application during preoperational testing. However, TI-17 states that it is applicable during all phases of testing including

startup testing. Since initial startup testing has not begun and will not begin until fuel load, this issue will remain unresolved pending NRC licensing review of the proposed FSAR change and the resolution of the apparent conflict regarding test phase applicability of TI-17 (8431-01).

No violations or deviations were identified in this area of inspection.

c. Training:

The purpose of this review was to verify that training requirements have been established in writing for all personnel involved in preoperational testing conduct. The SRI reviewed TI-10, "Training and Qualification of the Test Personnel," Revision 3. TI 10 required training includes administrative controls for testing, quality assurance requirements, and technical objectives. This is accomplished by initial certification that is documented on a certificate of qualification form, which includes an indoctrination checklist. Startup and test personnel receive the GSU training department quality assurance indoctrination training and the checklist provides a required reading list. This required indoctrination training is supplemented with individual training as deemed appropriate.

No violations or deviations were identified in this area of inspection.

d. Document Control:

The purpose of this review was to verify that formal administrative measures have been established for test procedure issuance and test record control. The SRI reviewed TI-9, "Records Management," Revision 7. TI 9 establishes control requirements for documents used by the startup and test department. A startup resource center has been established under the control of the superintendent startup and test to maintain selected documents and records. Records and procedures are clearly stamped in red ink to identify the status of the document such as "INFORMATION ONLY," "OFFICIAL FIELD COPY," "ORIGINAL," etc. Test records and documents are stored in locked file cabinets or areas and access to these files are limited. The SRI discussed document control responsibilities with startup resource center personnel, and they appeared to be knowledgeable of these requirements.

No violations or deviations were identified in this area of inspection.

e. Maintenance:

The purpose of this review was to verify that administrative controls have been established for maintenance activities required during the preoperational test phase. The SRI reviewed TI-12, "Interim Instructions," Revision 5, which provides the means for the startup and test group to establish preventive maintenance requirements in conjunction with the plant maintenance organization. Once the maintenance requirements are established, the plant maintenance organization is responsible for implementation. Approved maintenance procedures, if available, are used for maintenance performed. If approved maintenance procedures are not available for a specific activity, interim instructions are provided. Specific maintenance requirements beyond preventive maintenance are requested by the startup and test group on a startup trouble ticket issued to the plant maintenance organization. The SRI discussed control and tracking of maintenance requirements with responsible personnel, and they appeared to be knowledgeable of the requirements.

No violations or deviations were identified in this area of inspection.

6. Preoperational Test Procedure Review

The NRC SRI selected preoperational test procedure 1-PT-200, "Remote Shutdown System," Revision 1, for a detailed review. The review included a system walk through with the assigned startup and test engineer and an administrative and technical review of the procedure. During the procedure review, it was noted that the River Bend FSAR stated that the remote shutdown system preoperational test shall demonstrate in conjunction with the nuclear boiler preoperational test that the three designated safety relief valves can be operated from the remote shutdown panel. However, 1-PT-200 stated that the automatic depressurization system (ADS) valve (designated safety relief valves) portion of the remote shutdown system would be tested via 1-PT-202, "Automatic Despressurization System." This was to include all interlocks and component operation from remote shutdown panels. The SRI reviewed 1-PT-202 and found that the remote shutdown panel operation of the designated safety relief valves was not included.

Also, there was no evidence that any other preoperational test verified that the three designated safety relief valves would be operated from the remote shutdown panel. This was discussed with the assigned test engineer, and apparently the safety relief valve portion of the remote shutdown system preoperational test was removed in revision 1, with the intent to include it in the ADS preoperational test. However, this was not accomplished, and it was not being formally tracked in any manner. Therefore, this inadequacy of the preoperational test procedures was identified by the SRI as a violation (8431-02). Upon notification of this violation, GSU took immediate action to identify a punch list item for tracking the required procedure corrections, withdrew approval of

1-PT-202, and initiated a change to the test instruction (TI-3) to assure that appropriate actions are taken when requirements are removed from one procedure with the intent of placing them in another.

During the system walk-through, the SRI conducted a spot check of internal electrical wiring physical separation in the remote shutdown panel 1C61\*PNLP001, supplied by General Electric Company (GE). It was noted that certain redundant Class 1E wiring internal to the panel did not meet the minimum separation distance of 6 inches as required by Regulatory Guide 1.75. Division I (red) wiring on terminal block 3C01 is approximately 4 1/4 inches from bundled Division II (blue) wiring, and no analysis was performed of the reduced separation distance, nor were any barriers installed as required. This failure to provide adequate Class 1E circuit separation was identified by the SRI as a violation (8431-03). Upon notification of this violation, GSU took immediate action to request Stone and Webster field quality control to perform and document inspections of GE supplied panels which have more than one division wiring installed and a deficiency report was initiated for evaluation of 10 CFR Part 50.55(e) reportability. GE also issued a field deviation disposition request to correct the circuit separation problem in panel 1C61\*PNLP001.

Except for the one procedural violation noted, the remote shutdown system preoperational test procedure appeared to address applicable commitments and requirement.

#### 7. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, violations, or deviations. The following unresolved item is discussed in this report.

<u>Paragraph</u>	<u>Number</u>	<u>Subject</u>
5.b	8431-01	Independent Verification of Temporary Modifications

#### 8. Exit Interview

An exit interview was conducted November 6, 1984, with licensee representatives (identified in paragraph 1). During this interview, the SRI reviewed the scope and findings of the inspection.