APPENDIX

U. S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-458/84-10 Permit: CPPR-145

Docket: 50-458 Category: 42

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: May 1, 1984, through May 31, 1984

Inspector: for D. D. Chamberlain, Senior Resident Inspector — Date 7/5/84

Approved: J. P. Jaudon, Chief, Project Section A, Reactor Project Branch 1 — Date 7/5/84

Inspection Summary

Inspection Conducted May 1, 1984, through May 31, 1984 (Report 50-458/84-10)

Areas Inspected: Review of licensee action on previous inspection findings; site tours; review of licensee action on an allegation item with Ebasco spare part activities; review of reactor pressure vessel system hydro activities; review of the system punch list program; IE Bulletin followup; and status of diesel generator testing. The inspection involved 123 inspector-hours onsite by one NRC inspector.

Results: Within the areas inspected, no violations or deviations were identified.

DETAILS

1. Persons Contacted

Principal Licensee Employees

R. Backen, Operations Quality Assurance (QA) Engineer
*C. L. Ballard, Supervisor, Quality Engineering
*T. C. Crouse, Manager, QA
*P. J. Dautel, Licensing Staff Assistant
*P. E. Freehill, Superintendent, Startup and Test
P. D. Graham, Assistant Plant Manager Services
*T. O. Gray, Director, Operations QA
G. V. King, Technical Materials and Plant Services Supervisor
H. Matthews, Instrument Technician
*J. H. McQuirter, QA Auditor
D. L. Smith, Instrumentation and Control Foreman
*D. Suggs, Instrumentation and Control Foreman
L. Sutton, Systems QA Engineer
*C. Redding, Audit/Corrective Action Coordinator
L. R. Thompson, Supervisor, Instrumentation and Control
P. F. Tomlinson, Supervisor, Operations QA

Stone and Webster (S&W)

*D. P. Barry, Superintendent of Engineering
V. L. Barton, Supervisor, Field Quality Control(FQC)
S. R. Beaver, Test Engineer
*W. A. Crumpler, Lead Engineer
M. Field, Inspector, FQC
F. W. Finger, III, Project Manager Preliminary Test Organization (PTO)
*B. R. Hall, Assistant Superintendent, FQC
Q. E. Harper, Test Engineer
G. F. Hendl, Inspector, FQC
L. H. Janney, Assistant Construction Superintendent
L. Long, Turnover and Punchlist Coordinator
J. A. Pepperman, Lead Hydro Test Engineer
*R. L. Spence, Superintendent, FQC
*W. L. Spielmann, Assistant Construction Superintendent
*J. J. Zullo, QA Administrator

EBASCO

R. L. Rosier, Ebasco Site Manager
S. R. Smith, Site QA Supervisor

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

*Denotes those persons that attended the exit interview.

2. Licensee Action on Previous Inspection Findings

a. (Closed) Violation (458/8322-01): Failure of followup action to assure that responses to adverse audit findings were received in a timely manner, that a scheduled date for corrective action was specified, and that corrective action was accomplished as scheduled.

The licensee reviewed all open audit findings and took action to obtain timely responses and to assure that corrective action dates were specified. Administrative Procedure ADM-0012, "Corrective Action Systems," was issued on March 29, 1984, to establish responsibilities and methods for plant staff to assure that timely corrective action is taken for identified deficiencies. This procedure established a corrective action coordinator responsible for tracking, updating the status of, and reviewing corrective action responses. The coordinator also issues a summary report at least monthly to identify the corrective action status. The SRI reviewed selected audit responses, the QA department activity report dated May 10, 1984, and the plant staff inspection report status dated May 19, 1984. It was apparent from this review that aggressive followup action is being taken to effect timely and effective corrective action. This item is closed.

b. (Closed) Violation (458/8322-03): Failure of the measuring and test equipment (M&TE) document control program. Approximately 25% of the records maintained for 1983 to document M&TE out of tolerance evaluations were not identifiable and retrievable for the SRI during the inspection.

A subsequent review of the files by the licensee provided retrieval and identification for all but 2 of 98 "Out of Tolerance Notification" (OTN) forms. The missing documents, 83-OCN-047 and 83-OCN-054, were reinitiated, reissued, and cleared with no impact to completed work or plant testing. Administrative Procedure ADM-0029, "Control of Measuring and Test Equipment (M&TE)," was issued to replace previous procedures and provides clarification for the use and control of the OTN forms and log. The OTN forms have been consolidated in a separate file by notification number for ease of retrievability. The SRI reviewed the OTN log and selected OTN forms and no deficienies were identified. This item is closed.

c. (Closed) Unresolved Item (458/8322-04): SRI identified concerns with existing procedures for control and evaluation of out-of-tolerance M&TE.

Procedure ADM-0029, "Control of Measuring and Test Equipment (M&TE)," Revision 1, was issued on April 23, 1984, which consolidated and clarified the requirements of three separate procedures. A review of this procedure and selected OTN files by the SRI revealed that the previously identified concerns were addressed with present controls. There are now formalized procedural requirements for logging and

numbering OTN forms; OTN forms are included in the procedure; documented followup of late responses to OTN forms is now required; and responses to OTN forms along with the use of tracking cards now provide a more detailed description of action taken. This item is closed.

d. (Open) Open Item (458/8322-01): Review of the licensee audit planning and scheduling activities.

This review was conducted by the SRI to evaluate the licensee's program for assuring that applicable elements of the QA program are scheduled for audit as required. A recent reorganization of the licensee QA department has resulted in a consolidation of all audit activities within the Quality Systems section. These activities include audits of vendor, construction, startup and test, and operational activities. A review of the latest audit schedule revealed that the audit planning appears to be geared toward assuring that all major activities are scheduled for audit. The licensee is presently developing a matrix of operational phase activities to reference procedures to applicable QA requirements to provide assurance that all QA program requirements are audited as required. The SRI will continue to follow the development of the audit planning and scheduling for operational phase activities as the licensee's program developes. This item remains open.

3. 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. During the observation of the reinstallation of a level control valve that had been removed for a PTO flush of the residual heat removal system, the SRI identified concerns with the cleanliness level in the immediate area due to the potential for contamination of the cleaned system. A review of rework documentation revealed that cleanliness was addressed on the inspection checklist, but there was no specific information on area cleanliness. The SRI discussed the requirements for reentry control into clean systems to prevent contamination with licensee and PTO management and although existing procedures provided general control, the decision was made to strengthen the procedures with more specific information. The SRI reviewed draft revisions to procedures CSI 1.0.13 and PTPD 5.2, and it appears that the revised procedures will provide the necessary control. The SRI will verify the issue of the revised procedures and will monitor rework affecting previously cleaned systems during future inspections (Open Item 8410-01).

The SRI also observed an instrument technician preparing for loop check and calibration of a pressure transmitter. A check of the calibration instrumentation and calibration procedures revealed that current procedures and calibrated instrumentation were available for use by the instrument technician. The SRI discussed the calibration procedures and methods with the instrument technician and found that he was knowledgeable of the instrumentation and procedures.

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

4. Ebasco Spare Part Activities

This area of inspection resulted from allegations made by a former Ebasco employee in a letter to Ebasco management. A copy of the letter was forwarded to the SRI. It stated that all the work was not necessarily being done according to established written procedures. This allegation was referred to GSU for followup under their quality concern program. A review of GSU action on this concern was conducted by the SRI with the following results. It was noted that Ebasco was contracted for spare parts evaluation and purchase requisition data package preparation and they began work at RBS on November 11, 1983. The former employee was hired by Ebasco on December 5, 1983, as an "Evaluation Group Technician," to evaluate and to recommend spare part requirements. The Ebasco procedure for spare parts evaluation was finalized on December 30, 1983, and the employee was trained in the procedure on December 30, 1983. The employee was terminated by Ebasco on January 16, 1984. He was interviewed by the GSU operations QA supervisor prior to leaving RBS. At that time the employee signed a statement stating that he had no comments concerning quality or safety problems. The letter to Ebasco management, although undated, was apparently forwarded after the employee's termination. GSU subsequently performed an audit of Ebasco Services Incorporated Spare/Parts Material Program from March 19 through March 28, 1984. The audit report identified areas in which procedures were not being completely followed, but the GSU audit concluded that the overall Ebasco program controls provide assurance that quality is not compromised. The SRI reviewed the audit report and discussed the findings and planned corrective action with Ebasco management and GSU personnel. It appears that Ebasco was responsive to the audit concerns. The planned corrective action by Ebasco should provide added assurance that the Ebasco program is controlled and that quality is not compromised. The SRI believes that the action taken by GSU on this quality concern has been adequate and this allegation item is considered closed. However, the SRI will monitor the Ebasco corrective action completion and effectiveness during future inspections (Open Item 8410-02).

5. Reactor Pressure Vessel System Hydro

The reactor pressure vessel (RPV) system hydro was conducted by the Preliminary Test Organization (PTO) during this inspection period. The SRI reviewed the RPV System Hydrostatic Test Procedure, 1-G-ME-15, Revision 0, with hydro and QA personnel prior to test conduct. A major change request (MCR) was issued to the procedure prior to test conduct to clarify certain requirements and to address certain QA concerns. The procedure as revised by MCR 1, appeared to provide the required control of test conduct and test documentation requirements. It was noted during the test procedure review that the minimum temperature required before pressurizing the RPV was 110^{o}F. This was in conflict with the

RBS Final Safety Analysis Report (FSAR) minimum of 138°F. The minimum temperature of 138°F was determined based on 10 CFR Part 50, Appendix G, "Fracture Toughness Requirements," which were in effect at the time the RBS FSAR was first written. New Appendix G requirements became effective on July 26, 1983, which would allow a minimum temperature of 100°F according to General Electric (GE) letter GES-2235/83 dated August 10, 1983. S&W issued a change notice (CN 5.3-2) to the FSAR on February 17, 1984, to reflect the new Appendix G requirements.

The SRI also noted during the procedure review that pumps and valves were not to be examined at the full test pressure as required by the ASME code. This was discussed with hydro personnel and they stated that the required hydro inspection of pumps and valves would have been performed by the supplier and only the pump and valve mechanical joints would be examined during the RPV hydro. The SRI will review selected pump and valve hydro data during the final hydro test results evaluation.

The SRI was onsite May 13, 1984, for the RPV hydro pretest briefing and to observe test performance. Special test equipment required by the procedure was calibrated and in service including pressure gauges and relief valves. The construction SRI was onsite through May 14, 1984, to observe accomplishment of full system test pressure and to accompany one of seven test groups composed of a test engineer, a QC inspector, and an authorized nuclear inspector for visual examination of certain piping systems. This effort is documented in NRC inspection report 458/84-09. The overall crew performance during the test was well coordinated, and the test conduct was basically performed in accordance with the latest approved procedure with only apparently minor test exceptions identified. It appeared that the overall test acceptance criteria had been met. The types of test exceptions noted ranged from correction of typing errors to minor realignment of test boundaries. All of the test exceptions must be dispositioned and approved by the joint test group. The disposition of all test exceptions will be reviewed by the SRI during the final RPV hydro test results evaluation. The SRI later reviewed the preliminary test results and one concern was identified from that review. The concern was that temporary jumpers were installed in place of certain "flexible piping sections" that were not installed for the hydro. These temporary jumpers were not included on the temporary modification log nor were they listed as test exceptions. They were identified on the pressure test diagrams by excluding that section of pipe from the test boundary. Since the test documentation has not been approved by the joint test group, the SRI will review this concern during the final RPV hydro test results evaluation. The final RPV hydro test evaluation by the SRI is a required element of the preoperational test phase NRC inspection program.

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

6. System Punch List Program

The SRI conducted a review of the system punch list (SPL) program including discussions with the PTO turnover and punch list coordinator. Project Test Program Directive (PTPD) 5.6, "Punch Lists and Work Item Tracking During Equipment Release and Testing," provides the procedural control of SPL activities. The SPL is a construction generated document which is used for recording and tracking work items, outstanding approved design modifications, temporary modifications, etc., which exist within the bounds of a system prior to turnover to GSU. Outstanding SPL items at the time of system turnover to GSU become part of the system master punch list (MPL) which is maintained by GSU startup and test department.

At the time of equipment release to PTO, SPL items are assigned a priority for completion including identifying items that must be completed prior to the release. After equipment release to PTO, adding or removing items from the SPL must be accomplished with the use of a construction deficiency report (CDR). The SRI did not review any SPL items during this inspection period, but it appears that the procedural controls are in place to track and document completion of SPL items.

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

7. IE Bulletin Followup

This area of inspection was conducted to continue the review of licensee action on IE Bulletin information. Certain IE Bulletin files were requested from GSU licensing out of of Beaumont, Texas, for SRI review. Also, certain bulletins were reviewed with plant staff at RBS, to determine status of committed action.

The following status is provided for the bulletin files reviewed:

77-03 On Line Testing of the Westinghouse Solid State Protection System. This bulletin was forwarded to all Westinghouse power reactor facilities and is not applicable to RBS. This bulletin is considered closed.

77-04 Calculational Error Affecting the Design Performance of a System for Controlling ph of Containment Sump Water Following a LOCA. This bulletin was apparently addressed to all pressurized water reactor (PWR) facilities with an operating license or a construction permit and was not available in GSU files. This bulletin will remain open.

78-03 Potential Explosive Gas Mixture Accumulations Associated with BWR Offgas System Operations. This bulletin identified problems with hydrogen explosions in offgas systems at several operating plants. GSU nuclear plant engineering reviewed this bulletin and provided the following information on the RBS offgas system design to mitigate potential for hydrogen explosions. RBS has design features to prevent leakage and accumulation of hydrogen concentrations outside the offgas system. RBS has radiation monitors to detect radiation accompanying any hydrogen release; hydrogen will be disposed of through the normal ventilation system which uses nonsparking type fans with explosion proof motors and no loop seals are used in the offgas system which may contrain hydrogen. In addition, RBS plant staff has committed to development of certain procedures and operator training to mitigate the potential for and effects of hydrogen explosions in the offgas system. This bulletin will remain open for the SRI to verify plant staff action at RBS.

78-07 Protection Afforded by Air-Line Respirators and Supplied-Air Hoods. This bulletin was apparently addressed to all power reactors with an operating license and was not available in GSU files. This bulletin will remain open.

78-08 Radiation Levels from Fuel Element Transfer Tubes. This bulletin was apparently addressed to all power and research reactor facilities with a fuel element transfer tube and an operating license and was not available in GSU files. This bulletin will remain open.

78-09 BWR Drywell Leakage Paths Associated with Inadequate Drywell Closures. This bulletin identified problems with reinstallation of drywell head closures and subsequent leakage paths identified. It was suggested that maintenance procedures be reviewed to assure that drywell head is installed and verified in such a manner as to preclude potential for leakage development. RBS plant staff has not completed action on this bulletin. This bulletin will remain open for the SRI to verify plant staff action at RBS.

78-11 Examination of Mark - I Containment Torus Welds. RBS is a Mark III containment design with no torus welds. This bulletin is considered closed.

78-13 Failures in Source Heads of Kay-Ray, Inc. Guages Models 7050, 7050B, 7051, 7051B, 7060, 7060B, 7061, and 7061B. This bulletin was apparently addressed to all general and specific licensees with Kay-Ray gauges and was not available in GSU files. This bulletin will remain open.

78-14 Deterioration of BUNA-N Components in ASCO Solenoids. This bulletin identified problems with BUNA-N material used in control rod drive solenoid applications. It recommended establishment of a preventive maintenance program for a schedule of replacement of the BUNA-N material. RBS plant staff has not completed action on this bulletin. This bulletin will remain open for the SRI to verify plant staff action at RBS.

79-02 Pipe Support Base Plate Designs Using Concrete Expansion Anchor Bolts. This bulletin identified problems with base plate design assumptions and installation of concrete expansion anchor bolts. The GSU response (RBG-6548) to this bulletin states that base plates with concrete expansion anchors are not included in the base design at RBS, but if required at a later date as an alternate means of supporting Category I pipes, the effects of plate flexibility would be accounted for in the design and the shell-type anchors would not be used. S&W personnel present at the exit interview stated that base plates with concrete expansion anchors are now being used at RBS. This bulletin will remain open for further review by the SRI.

The SRI interviewed plant staff personnel during this inspection to determine how they were tracking action required as a result of bulletin review. The assistant plant manager - services stated that in the past the group responsible for the action would have to assure that the action was completed. A new administrative procedure ADM-34, "Offsite Document Review and Information Assimilation," was issued on May 29, 1984, to consolidate the responsibility for action tracking and followup with the document review coordinator. This procedure is intended to provide "a uniform, systematic method for review of NRC IE Bulletins and Notices, INPO Significant Reports, INPO/NSAC Significant Operating Event Reports, General Electric Service Information Letters, Vendor Manuals or other documents which are generated offsite and forwarded to Plant Staff for review. The desired end result of each review is an adquately researched, clear, concise report supported by background technical information which provides sufficient justification for final disposition and information dissemination." GSU has not determined the extent of backfit effort to be done to capture action required from previous document reviews under the new ADM-34 requirements, but some backfitting is planned. The SRI will monitor this backfitting effort during future followup on IE Bulletins to determine if the backfitting effort is adequate to assure that required actions are being implemented for individual bulletin reviews (Open Item 458/8410-03).

8. Status of Diesel Generator Testing

The SRI has been monitoring the status of the Transamerica Delaval diesel generator testing program at RBS and the following recap of the GSU action program is provided. GSU is a member of the Transamerica Delaval Diesel Generator Owners Group which is testing and evaluating Delaval diesels and identified problems. The RBS diesels are the model R48 type, which are similar to the Shoreham diesels. GSU has accelerated the testing program for the diesels at RBS, and they plan to build on testing and evaluations by other owners in order to develop a confidence level with the RBS diesels.

GSU has used input from the owners group, Transamerica Delaval vendor and subvendors, and industry experience to develop inspection plans and programs. A number of inspections have been completed and some are still on-going. The inspections have resulted in such rework as upgrading pistons and rings, replacing valve push rods, reworking cylinder head studs, reworking cylinder liners, changing turbo charger lubrication, changing jacket water pump, stiffening turbo charger brackets, replacing fuel injection tubing, etc. Recent inspections performed on cylinder heads have revealed rejectable indications of different types on 7 of 8 cylinder heads from the "A" diesel engine. These cylinder heads will be repaired or replaced depending on the identified problems.

GSU intends to prepare a report to the NRC staff describing their program plan, plans for testing/inspection, and information or problems identified and rework completed. This report should be available in early July 1984, and will provide status to that date. GSU has no firm schedule for actual testing and run-in of the diesels, but they plan to complete reassembly of the "A" diesel by the end of July 1984. The SRI will monitor the diesel inspection and testing program and report on status during future inspections.

9. Exit Interview

An exit interview was conducted June 14, 1984, with licensee representatives (identified in paragraph 1). The construction SRI also attended the exit interview. During this interview, the SRI reviewed the scope and discussed the inspection findings.