

APPENDIX

U. S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-458/85-22

Construction Permit: CPPR-145

Docket: 50-458

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

Facility Name: River Bend Station (RBS)

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

Inspection Conducted: March 11 through April 19, 1985

Inspector: *J. P. Jardon*
for R. E. Farrelly, Senior Resident Inspector

5/12/85
Date

Approved: *J. P. Jardon*
J. P. Jardon, Chief, Project Section A
Reactor Project Branch 1

5/12/85
Date

Inspection Summary

Inspection Conducted March 11 through April 19, 1985 (Report 50-458/85-22)

Areas Inspected Routine, unannounced inspection of licensee action on previously identified inspection findings, maintenance program, test and measurement equipment, surveillance testing and calibration control program, design changes and modifications, document control, allegation review, and site tours. The inspection involved 148 direct inspection-hours by one NRC inspector.

Results: Within the areas inspected, no violations or deviations were identified. Thirty-three new open items were identified which will be reinspected in future inspections.

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DETAILS

1. Persons Contacted

Principal Licensee Employees

W. J. Cahill, Senior Vice President, River Bend Nuclear Group
*J. C. Deddens, Vice President, River Bend Nuclear Group
*T. C. Crouse, Manager, Quality Assurance
T. F. Plunkett, Plant Manager
P. Freehill, Superintendent, Startup and Testing
*P. D. Graham, Assistant Plant Manager
H. M. McClellan, Senior Compliance Analyst
*G. V. King, Plant Services Supervisor
*R. B. Stafford, Director Quality Services
*K. E. Suhrke, Manager, Projects Planning & Coordination
*P. F. Tomlinson, Operations Quality Assurance Supervisor
*I. M. Malik, Supervisor, Quality Engineering
R. E. Bailey, Supervisor, Quality Control
L. B. Clauer, Attorney
L. A. England, Supervisor, Nuclear Licensing (Beaumont, Texas)
P. J. Dautel, Licensing Staff Assistant
P. F. Gillespie, Compliance Engineer
K. C. Hodges, Supervisor, Quality Systems
P. G. McGill, Senior Electrical Engineer
*H. D. Kowalezuk, Assistant Plant Manager, Maintenance & Material
*G. R. Kimmell, Supervisor, Operations Quality Assurance
D. B. Reynolds, Supervisor, Administrative Support
*M. E. Walton, Supervisor, Design Engineering
*Doug Gipson, Assistant Plant Manager, Operations
*J. E. Spivey, Quality Assurance Engineer
*J. E. Booker, Manager, Engineering & Licensing
*J. W. Lawrence, Engineer Licensing
*J. M. Glazar, Director, Nuclear Plant Engineering
*R. E. Barnes, Quality Assurance Engineer
*D. J. Krueger, Supervisor Engineering Administration
*N. M. Whitman, Supervisor Maintenance Planning
*G. A. Bysfield, Technical Staff Engineer
*Bill. Reed, Director, Nuclear Licensing

Stone and Webster (S&W)

F. W. Finger, III, Project Manager, Preliminary Test Organization
W. I. Clifford, Vice President
C. A. Goody, Resident Manager

- *B. R. Hall, Assistant Superintendent, Field Quality Control
- P. D. Hanks, General Superintendent, Construction
- R. L. Spence, Superintendent, Field Quality Control
- D. P. Barry, Superintendent, Engineering
- *W. T. Tucker, Assistant to Superintendent, Engineering
- *D. E. Hill, Maintenance Engineer

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

*Denotes those present at the exit interview April 19, 1985.

2. Licensee Action on Previous Inspection Findings

(Closed) Violation (458/8428-01): "Quality Assurance Audit Program." The licensee has conducted an extensive audit in the previously omitted area, preventive maintenance, and reviewed and subsequently revised the current audit schedule to meet the requirements of ANSI N18.7-1976, "Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants." This violation is closed.

(Closed) Violation (458/8428-02): "Quality Assurance Records." The licensee has brought his quality assurance record keeping requirements in conformance with the record keeping requirements of ANSI N45.2.12-1977, "Requirements for Auditing Quality Assurance Programs for Nuclear Power Plants." This violation is closed.

(Closed) Violation (458/8428-03): "Control of Quality Assurance Procedures." The licensee has brought the quality assurance procedures under control and eliminated redundant quality assurance procedures. This violation is closed.

3. Maintenance Program

The SRI reviewed the licensee's maintenance program for conformance with proposed technical specifications, the operations quality assurance program, and 10 CFR 50, Appendix B.

Procedures reviewed were:

- . ADM-0003, Revision 4, "Development, Control and Use of Procedures"
- . ADM-0005, Revision 1, "Station Document Control"
- . ADM-0006, Revision 1, "Control of Plant Records"

- . ADM-0007, Revision 1, "Selection, Training, Qualification and Evaluation of Plant Staff Personnel"
- . ADM-0018, Revision 0, "Plant Housekeeping and Cleanness (Sic) Control"
- . ADM-0019, Revision 0, "Initiation and Processing of Condition Reports"
- . ADM-0022, Revision 1, "Conduct of Operations"
- . ADM-0023, Revision 3, "Conduct of Maintenance"
- . ADM-0028, Revision 2, "Maintenance Work Request"
- . ADM-0051, Revision 0, "Important to Reliability Program"
- . MSP-0001, Revision 1, "Maintenance Section Organization and Responsibilities"
- . MSP-0002, Revision 0, "Corrective Maintenance Program"
- . MSP-0003, Revision 1, "Preventative Maintenance Program"
- . MSP-0007, Revision 0, "Maintenance Planning and Scheduling"
- . MSP-0011, Revision 0, "Certification and Training of Personnel for Special Processes"
- . MSP-0013, Revision 0, "Cleannes (Sic) and Cleaning Methods"
- . MSP-0014, Revision 0, "Housekeeping"
- . OSP-002, Revision 1, "Shift Relief and Turnover"
- . FPP-0060, Revision 1, "Hot Work Permit"
- . FPP-0070, Revision 0, "Duties of Fire Watch"
- . RHP-0042, Revision 1, "Alara Pre-Job Review"
- . TPP-7-013, Revision 0, "Mechanical Maintenance Training"
- . TPP-7-014, Revision 0, "Electrical Maintenance Training"
- . TPP-7-015, Revision 0, "Instrument and Control Maintenance Training"
- . QAI-2.1, Revision 1, "Audit Performance and Reporting"

- . QAI-2.0, Revision 0, "Planning and Scheduling GSU Quality Assurance Audits and Surveillances"
- . QCI-3.2, Revision 0, "Inspection of Maintenance Activities Associated with Maintenance Work Requests"

As a result of this review, the NRC inspector had findings in the following seven areas.

a. Corrective Maintenance

- (1) Written procedures have been established for initiating requests for routine and emergency maintenance.
- (2) Criteria and responsibilities for review and approval of maintenance requests including emergency maintenance requests, have been established.
- (3) Criteria and responsibilities, that form the basis for designating the activity as safety or nonsafety-related, have been established.
- (4) Criteria and responsibilities have been designated for performing work inspections of maintenance activities.
- (5) Provisions and responsibilities have been established for the identification of appropriate inspection hold points related to maintenance activities.

However, procedure ADM-0028, in the note to paragraph 5.10, says, in part, "... Workers shall not begin work until step 5.10, if applicable, has been completed." Step 5.10 is the quality control (QA) supervisor signature on the maintenance work request (MWR) indicating that QC has had the opportunity to review the MWR adding any necessary inspection requirements. It is not clear from the procedure, who determines the "if applicable." This is considered an open item (8522-01).

Procedure ADM-0023 in paragraph 5.2.3F requires notification of QC for Category 1 emergency work, "as soon as practical." Procedure ADM-0028 in paragraph 6.1 states that for an emergency MWR, "QC will be notified where possible." Notification of QC for safety-related work is required prior to the start of work unless emergency is very strictly defined.

This is considered an open item (8522-02).

- (6) Methods and responsibilities have been designated for performing functional tests of structures, systems, or components, following maintenance work and/or prior to their being returned to service.
- (7) Administrative controls have been established requiring the following records to be prepared, assembled, received, and transferred to permanent plant files:
 - . Approval of MWRs.
 - . Identification of personnel who performed the maintenance.
 - . Identification of the personnel who inspected the maintenance.
 - . Cause of the malfunction or failure which necessitated the maintenance.
 - . Description of corrective action taken.
 - . Identification of past maintenance functional testing performed.
 - . Identification of personnel that performed the post maintenance testing.
 - . Identification of test and measuring equipment used.
- (8) Responsibility to assemble and review the above identified records has been established.
- (9) A program has not yet been established for reviewing completed corrective maintenance records to assess the adequacy of the preventative maintenance program, to identify repetitive failures of parts and components, and to identify design deficiencies. MSP-0003 in paragraph 5.6 defines this review as being done by discipline supervision. This review however, will be based on trend data to be generated by others utilizing procedures not yet in existence.

This is considered an open item (8522-03).
- (10) Responsibilities have been assigned to assure implementation of records reviews.
- (11) Work control procedures requiring special authorization for activities involving welding, open flame, or other ignition

sources and taking into account nearby flammable material, cable trays or vital process equipment are established.

- (12) Work control procedures requiring a fire watch with capability for communication with the control room for activities involving welding, open flame, or other ignition source when performed in the proximity of flammable material, cable trays, or vital process equipment are established.

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

b. Equipment Control

Methods and responsibilities for equipment control have been defined; these include the following:

- (1) Permission to release equipment or systems for maintenance shall be granted by the operating staff.
- (2) Prior to granting permission for removal of equipment for service, the operating staff is required to verify that the equipment or system can be released without violating technical specification requirements. Additionally, they determine how long it may be out of service. Granting of such permission is documented.
- (3) When testing of redundant components or systems is required by technical specifications or 10 CFR 50, such testing is documented.
- (4) The status of equipment and systems is clearly identified.
- (5) Procedures and responsibility to determine when independent verification have been established.
- (6) Procedures and responsibility for returning equipment to service have been established.
- (7) The licensee has defined controls for the locking devices on the locked-open or locked-closed valves and circuit breakers which assigns responsibility for authorizing removal of locking devices under routine and emergency conditions.

The NRC inspector found that the licensee has not established a definition of acceptable locking devices for valves and circuit breakers. This is considered an open item (8522-04).

No violations or deviations were identified in this area.

c. Motor Operated Valve (MOV) Maintenance

- (1) Procedure CMP-1252, which provides for tabulating performance data, was reviewed; it included:

- (a) Torque required to open and close valves;
- (b) Type of torque switch and settings for open and close direction; and
- (c) Motor size, voltage, and full load and locked rotor amps.

This procedure is still in draft form. This is considered an open item (8522-05).

- (2) Procedure CMP-1026 is currently being revised to provide for tabulation of data pertinent to overload relays, heater size, breaker size, and trip setting. This considered to be an open item (8522-06).
- (3) GSU has installed MOV magnetic trips that can be reset either manually or automatically. GSU has not established control to verify that all such resets are in the manual mode. This is an open item (8522-07).
- (4) GSU has not identified which valves have operators with nonlocking gears or brake assemblies. This is considered an open item (8522-08).

As a result of this review, the NRC inspector found that GSU procedures assure that:

- . The torque switches supplied cannot demand a larger torque than the motor can supply.
- . The valve operator motors are not undersized for their particular load.
- . The breakers are not undersized. The magnetic trip settings are based on motor maximum torque output.
- . The thermal overload relays and heaters have been sized for the licensee's desired locked rotor tripping time. The sizing was studied and not randomly selected.

It was also found that GSU has assured that torque switch settings will generate sufficient torque to open and close the associated valve.

No violations or deviations were identified in this area.

d. Preventative Maintenance

A written preventive maintenance program for safety-related structures, systems and components has been established including:

- . Responsibility for the program.
- . Documentation and review of completion of preventive maintenance activities.
- . Responsibilities and methods for establishing PM frequencies.

The NRC inspector determined that a master schedule for preventative maintenance has not been established. This is an open item (8522-09).

No violations or deviations were identified in this area.

e. Special Processes

Administrative controls for special processes, have been established as follows:

- . A requirement that only qualified procedures will be used.
- . A requirement that only qualified personnel will be used.
- . The ALARA coordinator determines if mockups are necessary for ALARA consideration. Other special training is identified and requested by the discipline supervisors.
- . Responsibilities have been assigned to accomplish the above listed items.
- . It was also found that qualification requirements for procedures and personnel do not currently address contract maintenance personnel. Procedures were being revised to address this item. This is an open item (8522-10).

No violations or deviations were identified in this area.

f. Cleanliness Controls

- . Procedures have been developed for cleaning safety-related components and systems.

- . Procedures for maintaining the cleanliness of previously cleaned systems have been established.
- . Responsibilities for implementing cleanliness requirements have been established.

The NRC inspector determined, however, that cleanliness classifications of plant systems have not been established. This is an open item (8522-11).

No violations or deviations were identified in this area.

g. Housekeeping Controls

Administrative controls and responsibilities for general housekeeping have been established which include:

- . Establishment of housekeeping zones.
- . Control of housekeeping during work activities.

No violations or deviations were identified in this area.

4. Test and Measurement Equipment

The objective of this inspection was to determine whether or not controls had been established for test and measurement equipment. The NRC inspector determined the following:

- . Criteria and responsibility for assignment of the calibration/adjustment frequency have been established.
- . An equipment inventory list or equivalent has been prepared which identifies the following:
 - (a) All test and measurement equipment which will be used for any reason on safety-related structures, systems or components.
 - (b) The calibration/adjustment frequency for each piece of equipment.
 - (c) A calibration procedure to be used for each piece of equipment. The calibration procedure for each piece of equipment identifies the calibration standard to be used.
- . Formal requirements exist for marking the latest inspection/calibration date on each piece of equipment or otherwise identifying the status of calibration.

- . A written requirement has been established which prohibits the use of test and measuring equipment which has not been inspected and calibrated within the prescribed frequency and describes controls to prevent inadvertent use of such equipment.
- . Out-of-calibration controls have been established which require the following:
 - (a) When a piece of equipment is found to be out-of-calibration, the acceptability of items previously tested or measured will be evaluated and documented.
 - (b) Evaluation of cause of out-of-calibration.
- . A formal system has been established to assure that new test and measurement equipment will be added to the inventory list and calibrated prior to being placed in service.
- . Responsibilities have been assigned to assure that the test and measurement equipment controls identified above will be implemented.

It was also found that a system has not been provided for assuring that each piece of equipment is calibrated and adjusted on or before the date required. This is considered an open item (8522-12).

No violations or deviations were identified in this area.

5. Surveillance Testing and Calibration Control Program

The purpose of this inspection was to determine if the program for surveillance testing and calibration had been established. The NRC inspector found that:

- . A master schedule for surveillance testing/calibration required by technical specifications has been established which includes:
 - (a) Frequency for each test/calibration.
 - (b) Plant group responsible for performing each test/calibration/inspection.
 - (c) Surveillance test status.
- . Responsibility has been assigned in writing to maintain the master surveillance test/calibration/inspection schedule up-to-date.
- . Formal requirements have been established for conducting surveillance tests and calibrations in accordance with approved procedures which include acceptance criteria.

Formal methods and responsibilities have been defined for review and evaluation of surveillance test/calibration data including procedures for reporting deficiencies, failures, malfunctions identified during the tests/calibrations with required verification that LCO requirements were satisfied.

Responsibility has been assigned for assuring that required schedules for all tests and inspections are satisfied.

It was also found that this program does not yet include the inservice testing/inspection requirements of 10 CFR 50.55(a). This is an open item (8522-13).

No violations or deviations were identified in this area.

6. Design Changes and Modifications

The NRC inspector reviewed the procedures for the design change process after licensing. The findings of this review are in the following six subparagraphs:

a. Design and Modification Change Requests

- . Methods for initiating a design or modification change request (MCR) have not yet been established. This is an open item (8522-14).
- . Design change request control form, or equivalent, with provisions for documenting completion of required reviews, evaluations, and approvals prior to implementing the change has not yet been established. This is an open item (8522-15).
- . Methods for assuring that a proposed change does not involve an unreviewed safety question as described in 10 CFR 50.59 or a change in the technical specifications have not yet been established. This is an open item (8522-16).
- . Methods for assuring that applicable guidelines of R.G. 1.120, "Fire Protection Guidelines for Nuclear Power Plants," or approved NRC alternates are included in design and procurement documents and that deviations therefrom are controlled have not been established. This is an open item (8522-17).

No violations or deviations were identified in this area.

b. Design Control

The NRC inspector found that:

- . Identification of the organization responsible for performing design work has been established in Quality Assurance Directive-3, "Design Control."
- . Responsibilities and methods for conducting safety evaluations have not been established. This is an open item (8522-18).
- . Procedures and responsibilities for identifying, reviewing, and approving design input requirements have not been established. This is an open item (8522-19).
- . Methods, procedures, and responsibilities for performing independent design verifications have not been established. This is an open item (8522-20).
- . Design interfaces between internal and/or external design organizations have not been established. This is an open item (8522-21).
- . Responsibility for final approval of design documents has not been established. This is an open item (8522-22).

No violations or deviation were identified in this area.

c. Design Document Control

It was determined that:

- . Methods for controlling changes to approved design change documents have not been established. This is an open item (8522-23).
- . Methods for controlling or recalling obsolete design change documents such as revised drawings and modification procedures have not been established. This is an open item (8522-24).
- . Methods for release of approved design change documents have not been established. This is an open item (8522-25).
- . Responsibility to assure compliance with design control requirements has not been assigned. This is an open item (8522-26).

No violations or deviations were identified in this area.

d. Operator Design Change Information

It was found that procedure ADM-0014, Revision 0, "Interim Design Change Control," provides administrative controls and assigns responsibilities to assure that design changes and modifications will be incorporated into:

- (1) Plant procedures.
- (2) Operator training.
- (3) Plant drawings.

No violations or deviations were identified in this area.

e. Design Change Implementation

The NRC inspector found that:

- . Administrative controls to collect and transmit design documentation including design review documentation to permanent plant files have not been established. This is an open item (8522-27).
- . Administrative controls requiring that implementation of approved design changes be in accordance with approved procedure have not been established. This is an open item (8522-28).
- . Administrative controls requiring post modification acceptance testing be performed per approved test procedures and the results evaluated have not been established. This is an open item (8522-29).
- . Responsibility for identifying post modification testing requirements and acceptance criteria has not been established. This is an open item (8522-30).
- . Responsibility for reporting design changes and modifications to the NRC has not been established. This is an open item (8522-31).

No violations or deviations were identified in this area.

f. Temporary Modifications, Lifted Leads and Jumpers

The NRC inspector's review indicated that:

- . Controls requiring the review and approval of temporary modifications in accordance with Section 6 of the proposed technical specifications and 10 CFR 50.59 have not been established. There is an existing open item (8506-01) regarding this item.
- . Controls require the use of detailed approved procedures or a design review when performing temporary modifications have been established.

- . A formal record is maintained of the status of temporary modifications, lifted leads and jumpers, temporary strainers, and temporary trip points of control equipment.
- . Controls require evaluation of the need for independent verification where appropriate of installation and removal of temporary modifications, lifted leads and jumpers.
- . Requirements for functional testing of equipment following installation or removal of temporary modifications have not been established. This is an open item (8522-32).
- . Requirements for periodic review of lifted lead and jumper records including a check of outstanding entries are not established. This is an open item (8522-33).

Procedures reviewed in this area include:

- . OSP-0002, Revision 1, "Shift Relief and Turnover"
- . ADM-0031, Revision 3, "Temporary Alterations"

No violations or deviations were identified in this area.

7. Document Control

The purpose of this inspection was to determine if a document control mechanism was in place for operation of the plant after licensing. It was found that:

- . Administrative controls require that design documents used by station personnel be the most current revisions.
- . Administrative controls are provided for obsolete documents.
- . Master indices are maintained for drawings, manuals, tech specs, FSARs, and procedures, which indicate the current revision.
- . Indices are available for reference.
- . Indices are periodically reviewed.
- . Procedures reviewed in this area include:
 - (a) ADM-0005, Revision 1, "Station Document Control"
 - (b) ASP-0001, Revision 2, "Operation of the Station Document Control"

No violations or deviations were identified in this area.

8. Allegation Review

a. Anonymous Telephone Call

NRC Region IV had received an anonymous phone call alleging that at River Bend:

- . Coaxial and multi-conductor cable below the reactor pressure vessel had been wetted by dripping water, raising questions as to the integrity of this cable.
- . Multi-conductor cables were being mated to plugs via crimping when the connection should be made by soldering.
- . Field Quality Control (FQC) inspectors had attempted to identify their concerns regarding these cables via a nonconformance and disposition (N&D) report and the N&D was either suppressed or reworded by a supervisor such that the meaning was altered.

The SRI interviewed personnel responsible for installation, inspection, and supervision of work on the cables below the reactor pressure vessel. Additionally, the SRI reviewed S&W site instructions and General Electric procedures for termination of the multi-conductor cables.

The results of the inspection were:

- . These cables are expected to be wet from time to time and are continuously in a high humidity environment. Once terminated to a plug, the cable end should be water resistant. Wetting of cable end prior to mating the cable to its plug could result in some capillary action causing the cable to absorb moisture and be degraded. Some of the cables below the reactor pressure vessel had been wetted prior to being mated to a plug.
- . The multi-conductor plugs in question were supplied by General Electric. The General Electric installation procedures specify crimping as the method for attaching these plugs to cables. S&W followed the General Electric procedures adding some conservatism to assure an adequate crimp.
- . FQC supervision in general, and the supervisor responsible for inspection of these cables in particular, were already concerned with and acting upon the wetting of these cables when the SRI began his inspection of this activity. Rather than suppressing concern over these cables, records indicated that FQC supervisors were highlighting it. An N&D was written which identified the wetting problem and sought resolution for cables that would have been wetted before they were mated to a plug.

The SRI noted that the N&D on cable wetting referred to specific cables and not to all the cable below the reactor pressure vessel. It would be very difficult to determine which of the cables had been mated to plugs and which had not, when the cables were exposed to dripping water. Consequently, the licensee agreed to test all of the cables below the reactor pressure vessel to assure cable integrity. Such testing is to be 100% witnessed by FQC inspectors. This testing is the subject of an existing NRC open item (458/8425-02). Work continues in this area. The allegation that the cables were wetted was considered substantiated; however, it was determined that the licensee had identified this condition and initiated appropriate corrective action.

This allegation is closed.

9. Site Tours

The SRI toured areas of the site during the inspection period to observe construction progress, general job practices, housekeeping, and fire protection.

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

10. Exit Interview

An exit interview was conducted April 19, 1985, with the licensee representatives identified in paragraph 1. At this time the SRI reviewed the scope and findings of the inspection.