



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

October 19, 1984

Docket No. 50-458

Gulf States Utilities
ATTN: Mr. William J. Cahill, Jr.
Senior Vice President
River Bend Nuclear Group
P. O. Box 2951
Beaumont, Texas 77704

Gentlemen:

SUBJECT: Construction Appraisal Team Inspection 50-458/84-23

Enclosed is the report of the Construction Appraisal Team (CAT) inspection conducted by the Office of Inspection and Enforcement (IE) on July 30-August 10 and August 20-31, 1984, at the River Bend Unit 1 site. The Construction Appraisal Team was composed of members of IE, NRC Region IV, and a number of consultants. The inspection covered construction activities authorized by NRC Construction Permit CPPR-145.

This inspection is the eighth of a planned series of construction appraisal inspections by the Office of Inspection and Enforcement. The results of these inspections are being used to evaluate the management control of construction activities and the quality of construction at nuclear plants.

The enclosed report identifies the areas examined during the inspection. Within the areas, the effort consisted primarily of detailed inspection of selected hardware subsequent to Quality Control inspections, a review of selected portions of your Quality Assurance Program, examination of procedures and records, observation of work activities, and an examination of your project construction controls.

Appendix A to this letter is an Executive Summary of the results of this inspection and of conclusions reached by this office. The NRC CAT noted no pervasive breakdown in meeting construction requirements in the samples of installed hardware inspected by the team or in the applicant's project construction controls for managing the River Bend project.

However, deficiencies noted by the NRC CAT in a number of hardware installation inspection programs indicate a need for more intense management attention. The deficiencies identified included examples of inadequate hardware inspection, and examples of inadequate QA and engineering review of deficiencies for generic application.

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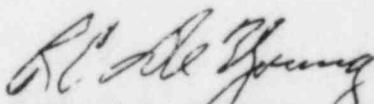
The NRC team observed that there was evidence of good construction practices at the River Bend Station. These include use of Quality Accountability meetings to instill the need for quality craftsmanship the first time, the general acceptability of the welding, the effort to benefit from previous CAT inspections at other nuclear sites and the overall satisfactory quality of documentation for site construction activities.

Appendix B to this letter contains a list of potential enforcement actions based on the NRC CAT inspection observations. These are being reviewed by the Office of Inspection and Enforcement and the NRC Region IV Office for appropriate action. In addition, Region IV will be following your corrective action for deficiencies identified during this inspection.

In accordance with 10 CFR 2.790(a), a copy of this letter and the enclosures will be placed in the NRC Public Document Room. No reply to this letter is required at this time. You will be required to respond to these findings after a decision is made regarding appropriate enforcement action.

Should you have any questions concerning this inspection, please contact us or the Region IV Office.

Sincerely,



Richard C. DeYoung, Director
Office of Inspection and Enforcement

Enclosures:

1. Appendix A - Executive Summary
2. Appendix B - Potential Enforcement Actions
3. Inspection Report

cc w/enclosures:
See next page

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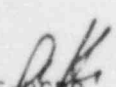
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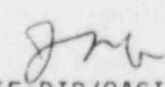
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APPENDIX A

EXECUTIVE SUMMARY

An announced Construction Appraisal Team (CAT) inspection was conducted at the River Bend Station during the period July 30-August 10 and August 20-31, 1984.

Overall Conclusions

It is the conclusion of the Construction Appraisal Team that the hardware, documentation for construction activities, and project construction controls were generally in accordance with requirements, commitments and principles of prudent management. However, the team did identify a number of construction program weaknesses that require management attention. These are:

1. The inspection program, in the area of cable and raceway separation deficiency identification, requires improvement. A number of cable and raceway separation deficiencies were identified by the NRC CAT in raceway and cable which had been previously inspected by site Field Quality Control.
2. Numerous cable tray supports did not meet the drawing configurations that were utilized for determining support loading.
3. The applicant failed to consider the generic implications of identified deficiencies. An identified problem with incompatibility of non-ASME snubber assemblies was not investigated to determine application to ASME snubbers, and a specification change requiring the installation of a fire barrier seal for fire dampers was not specified as applicable to previously installed and accepted hardware.
4. Implementation of FSAR and procedural engineering requirements were not consistently met in the areas of cable tray fill, cable spacing and control of hydrogen producing materials.

In summary, the identified weaknesses require increased attention by management to assure that completed installations meet design requirements.

AREAS INSPECTED AND RESULTS

Electrical and Instrumentation Construction

The majority of the electrical and instrumentation samples were found to meet the appropriate design and construction requirements. However, deficiencies were identified in several areas including items which will require additional NRC review and analysis.

Although not extensive, a number of cable and raceway separation deficiencies were identified, and it was determined that the applicant's inspection program in this area was not fully effective. Additional information is also required

regarding qualification and NRC approval of fire barrier materials used in cable wrap applications.

Implementation of FSAR and procedural engineering requirements were not consistently performed in the electrical area. Examples include failure to implement requirements limiting the use of hydrogen generating materials inside the containment drywell and failure to properly incorporate FSAR requirements for items such as tray fill and cable spacing into quality control procedures.

A number of cable tray supports did not meet the drawing configurations that were used for determining support loading.

Several discrepancies were found in equipment environmental qualification reports indicating that review of reports of this type requires improvement.

The Class 1E 125 volt batteries had been charged and turned over to the startup organization even though the battery room ventilation systems were still under construction and not in operation. This indicates that additional management attention is required for the control and maintenance of completed equipment turned over to startup.

Mechanical Construction

The mechanical equipment and HVAC supports/restraints were found to be constructed in accordance with applicable requirements. Although discrepancies were noted on piping, pipe supports and restraints, concrete expansion anchors and HVAC ducting and accessories, no serious technical deficiencies were observed.

Several instances were observed where engineering dispositions on Nonconformance and Disposition Reports and Engineering and Design Coordination Reports were not as thorough or extensive as necessary to address generic considerations of identified hardware deficiencies. Lack of thoroughness by engineers and QA reviewers in this area could allow potentially significant safety issues to be overlooked or inadequately resolved. Lack of attention to detail and poor construction practices with regard to installed and accepted hardware was evident. Problems were identified by the NRC CAT with pipe support/restraint fastener locking mechanisms, improper protection and misuse of pipe supports and the number of interdisciplinary clearance problems that had not been pre-authorized by engineering.

Welding and Nondestructive Examination

Welding and nondestructive examination activities were generally found to be in accordance with applicable codes and specifications. However, several discrepancies were identified concerning film supplied by a piping vendor. The applicant had previously reported similar problems to the NRC and the NRC CAT believes that the applicant should review additional radiographic packages in order to assure that discrepancies identified by both the applicant and the NRC constitute isolated cases.

In addition, some discrepancies were also identified during the inspection of vendor equipment and review of vendor film. The applicant has committed to reviewing these discrepancies and the NRC will assess the results of this review.

Civil and Structural Construction

Concrete quality, Cadwelding and Concrete Material Certification were, in general, found to be acceptable. Rebar appeared to be placed in accordance with the design drawings. However, deficiencies identified by NRC CAT inspectors, namely two cracks in the concrete, and Roto Foam, debris and concrete in the plant isolation joints (rattle spaces) are indicative of a need for improvement in the inspection activities.

Structural steel member size, configuration and connections were generally found to be acceptable. Two steel connections were found not to be in accordance with the design drawings and are being evaluated by S&W. These are also indications of a need for improvement in the construction inspection program.

A significant number of high strength bolts in the Reactor Building structural steel connections were found to be below minimum torque values. This indicates that these bolts do not have the bolt preload required by AISC specifications.

Material Traceability and Controls

In general, the project traceability and controls program was found to be acceptable. A few deficiencies were found by the NRC CAT in the material traceability and control of some safety-related fasteners, piping flange components and environmental control of weld filler material storage ovens. Work or rework of some flange joints was being accomplished without QC or engineering concurrence or knowledge which also resulted in a loss of material control.

Design Change Control

Design change control, including control of changes to design documents, was determined to be generally in conformance with applicable requirements. A number of isolated (non-generic) discrepancies were identified, of which the most significant were incorrect mounting of diesel generator silencers and installation of ASME Class 3 orifice plates in an ASME Class 2 line. Three deficiencies were identified which could be generic; two of these deficiencies concerned failure to check and independently review design calculations prior to release of design information to Construction. The third was the use of E&DCRs to identify nonconformances.

Corrective Action Systems

In general, the corrective action program utilizing Nonconformance and Disposition Reports to identify, evaluate and correct nonconforming conditions was found to be acceptable except that in certain instances inadequate corrective action was being taken to preclude repetition of nonconformances or to properly dispose of existing nonconformances.

Project Construction Controls

The overall project construction controls were found to be adequate to assure that construction and test activities will meet quality requirements. Specific

areas were identified that require additional management attention. Project management review of important quality control reports needs to be improved. The GSU quality assurance audit section needs to periodically review its audit program to make sure that all scheduled audit areas have actually been addressed. An improved and more comprehensive quality concern program needs to be developed, proceduralized, and implemented.

APPENDIX B

POTENTIAL ENFORCEMENT ACTIONS

As a result of the NRC CAT inspection of July 30 to August 10 and August 20 to August 31, 1984, the following items have been referred to Region IV as Potential Enforcement Actions (section references are to the detailed portion of the inspection report):

1. Contrary to 10 CFR 50, Appendix B, Criterion II, and GSU Nuclear Quality Assurance Manual (NQAM) Quality Assurance Procedure QAP-2, the applicant failed to regularly review the status and adequacy of the Quality Assurance Program in that certain quality trending documents did not receive adequate management review. (Section IX.B.2)
2. Contrary to 10 CFR 50, Appendix B, Criterion III, and GSU NQAM QAP-3, design control has not been maintained as the applicant has:
 - a. Failed to verify adequacy of design. Load calculations for Reactor Building cable tray supports were based on design information which does not represent as-built configurations. (Section II.B.1)
 - b. Failed to properly translate FSAR requirements for items such as cable tray fill, cable spacing and control of aluminum permanent plant materials inside of the containment drywell, into specifications, drawings, procedures and instructions. (Sections II.B.1 and II.B.2)
3. Contrary to 10 CFR 50, Appendix B, Criterion VI, and GSU NQAM QAP-6, measures failed to assure that procedures and drawings, including changes, were used at the location where the prescribed activity is performed in that nine of the 37 inspection reports on anchor and high strength bolting had the incorrect revision of either the drawing or the procedure identified on them. (Sections III.B.3 and V.B.2)
4. Contrary to 10 CFR 50, Appendix B, Criterion X, and GSU NQAM QAP-10, applicant failed to provide an adequate inspection program in that:
 - a. Inspection of some raceways for physical separation had not been accomplished in accordance with the criteria established in the applicable procedures. (Section II.B.1)
 - b. Safety-related ASME class pipe support/restraints have not been constructed and inspected in accordance with design requirements. (Section III.B.2)
5. Contrary to 10 CFR 50, Appendix B, Criterion XVI, and GSU NQAM QAP-16, the applicant's program has failed to assure that conditions adverse to quality have been promptly identified and corrected in that:

- a. An identified problem with non-ASME snubber assemblies was not investigated sufficiently to reveal the same problem on ASME snubber assemblies supplied by the same vendors. (Section III.B.2)
- b. A new specification requirement for the use of fire barrier sealant around fire damper to wall joints was not clearly identified to be backfitted to previously installed and accepted hardware. (Section III.B.5)
- c. Inadequate corrective action is being taken to preclude repetition of nonconformances. (Section VIII.B.1)