APPENDIX

U. S. NUCLEAR REGULATORY COMMISSION
REGION IV

Report: 50-458/83-02

Docket: 50-458 Category A2

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

Facility Name: River Bend, Unit 1

Inspection At: River Bend Site

Inspection Conducted: January 10-14, 1983

Inspectors: C Claude C. Johnson 2-9-83
C. E. Johnson, Reactor Inspector, Engineering Section Date
(Paragraphs 1, 3, 5, 6, and 7)

Jackie E. Bess 2-9-83
J. Bess, Reactor Inspector, Engineering Section Date
(Paragraphs 1, 2, 3, 4, and 7)

Reviewed: W A Crossman 2/9/83
W. A. Crossman, Chief, Reactor Project Section B Date

Approved: L D Hillen Jr 2/9/83
D. M. Hunnicutt, Chief, Engineering Section Date

Inspection Summary

Inspection conducted during period of January 10-14, 1983, (Report 50-458/83-02)

Areas Inspected: Routine, unannounced inspection of licensee action on previous inspection findings; review of quality assurance program for safety-related structural concrete and structural steel supports; observation

of work for safety-related structural concrete and structural steel supports; review of quality assurance program for receipt, storage, installation, identification, protection, and separation of instrumentation cable and associated equipment; observation and independent evaluation of work performance and completed work of electrical cable terminations. The inspection involved 68 inspector-hours onsite by two NRC inspectors.

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

DETAILS

1. Persons Contacted

Principal Licensee Personnel

*P. D. Graham, Director, QA
*K. C. Hodges, QA
*D. G. Seymour, QA
D. Duckering, QA

Stone & Webster (S&W) Personnel

*R. L. Spence, Superintendent, Field Quality Control (FQC)
*W. I. Clifford, Sr. Construction Manager
R. Fergusion, QC Engineer
J. Greene, FQC
B. R. Williams, FQC
D. Wells, FQC Civil Engineer
N. Pressler, QC Electrical Engineer
R. Fay, QC Electrical Engineer
J. Byrant, Chief Electrical Construction Supervisor
J. Raft, Chief Electrical Construction Supervisor
M. Fuer, Chief Electrical Construction Supervisor
L. Jenkin, Warehouse Receiving Supervisor
J. Clark, Lead Engineer, Preliminary Test Organization

*Denotes those attending the exit interview.

2. Licensee Action on Previous Inspection Findings

(Open) Unresolved Item (458/8207-01): Revision to parts of Specification 248.000 to redefine responsibilities and commitments in the area of cable testing. The licensee has submitted a reply in the form of a Stone and Webster Engineering and Design Coordination Report (E&DCR), Number C-20.687. This report satisfies the Stone and Webster commitment in the area of cable testing. However, NRC needs more information pertaining to the deletions of some areas of responsibilities in Specification 248.000, with the issuance of E&DCR-C-20.687. To be more specific, E&DCR-C-20.687 deleted on page 5-3, lines 3.23 through 3.28 of Specification 248.000. The licensee has responded on this matter by stating that Gulf States Utilities startup groups will perform the tests deleted by E&DCR-C-20.687. This matter will be verified on subsequent visits to the site.

This item will remain open until more information has been obtained.

3. Site Tour

The NRC inspectors toured the reactor building, auxiliary building, fuel building, and control building for Unit 1 to observe construction in process and to inspect housekeeping.

No violations or deviations were identified.

4. QA Programs and Procedures - Instrumentation Cables

The purpose of this inspection was to determine whether appropriate and adequate QA procedures exist to assure compliance with NRC requirements and licensee commitments for the performance of the following activities dealing with electrical instrumentation cables: receipt inspection and storage, handling and installation, inspection and testing, identification, raceway separation and protection, cable redundancy and separation, and termination testing after installation. The QA program and procedures examined during the inspection of June 28-July 2, 1982, NRC Inspection Report 82-08, for electrical cables also pertain to instrumentation cables. Some of the procedures listed in NRC Inspection Report 82-08, as well as procedures examined during this inspection, are listed below:

A. Receipt Inspection and Storage

The NRC inspector examined the licensee's QA procedures for receipt inspection and storage of instrumentation cables. The procedures examined and the licensee's adherence to these procedures appeared to meet NRC requirements and licensee commitments. The procedures examined are listed below:

- Quality Assurance Inspection Plan - C78110190007, "Receiving Material/Equipment Source Inspected by PQC"
- Construction Methods Procedure 1.3, "Storage"
- Quality Assurance Directive (QAD)-7.7, "Receiving Inspection" (general), dated December 28, 1977

Also reviewed were inspection and receiving reports for the cables listed below:

- Inspection Report No.-E6000054, Purchase Order-158241242, File Loc.-P1241242C, 300 volt instrument cable, dated October 30, 1976
- Inspection Report No.-E1100134, Purchase Order-241242158, File Loc.-P1241242C, 300 volt instrument cable, dated, October 8, 1981

- Inspection Report No.-E110047, Purchase Order-241242158c, File Loc.-P1241242C, 300 volt instrument cable, dated October 24, 1981

- Inspection Report No.-E210009, Purchase Order-241242158, File Loc.-P1241242C, 300 volt instrument cable, dated January 31, 1982.

The examined procedures and documents provided for adequate inspection of cable upon receipt to assure that the cable is undamaged and conforms to purchase specifications. Documentation of inspection reports and qualification tests are adequately addressed by the examined procedures and documentations. Adherence to the procedures will assure that receipt inspection, storage requirements, including enviromental protection and segregation of noncomforming material are met.

No violations or deviations were identified.

B. Identification

The licensee's QA procedures for identification of instrumentation cable and cable terminations were examined by the NRC inspector. These identification procedures appeared to adequately assure cable traceability from receipt through installation and proper segregation of nonconforming cable. NRC requirements and licensee commitments appear to have been met by the examined procedures and documentation. The procedures and documents are listed below:

- Quality Assurance Inspection Plan No.-R1248000F05180, J.O. No. 12210.50, "Electrical Cable Installation," dated December 16, 1982.

- Quality Assurance Directive (QAD)-No.-14.1, Rev. 6, "Inspection Report System" (Generic Procedure), dated February 14, 1980.

- Construction Department Standard - CMP No.9.1-7.76, Construction Methods Procedure for "Insulated Cable Terminations, Splices and Connections," dated July 1976

- Cable Pull Ticket, Cable Schedule No. 15, No.-12210.00, Cable No. IENBBBC600

- Stone and Webster Termination Sheet

No violations or deviations were identified

C. Raceway Loading

The NRC inspector examined the licensee's QA procedures pertaining to raceway loading. The procedures and documents appeared to adequately meet NRC requirements and licensee's commitments. The procedures and documentation examined are listed below:

- Quality Assurance Inspection Plan, No.-R-1248000F05180, "Electrical Cable Installation," dated December 16, 1982
- Requirements of Inspection Plan, No.-1248000F0505, "Conduit"
- Requirement of Inspection Plan, No.-124800F0507, "Cable Tray"
- Construction Department Standard, CMP No. 9.3-3.76, Construction Methods Procedure, "Insulated Electrical Cable Installation," Reference: E061A-Electrical Installation, dated March 1976.
- Stone and Webster Raceway Ticket, Number-1CL009RA, dated March 18, 1982
- Stone and Webster Raceway Ticket, Number-1TC04112, dated December 15, 1980

No violations or deviation were identified.

D. Installation

During this inspection the NRC inspector observed the completed installation of several instrumentation and control cables at main control board assemblies. These cables were traced (walked down) from termination to termination to verify that the use of specified material and installation procedures conformed to NRC requirements. The cables inspected are as follows:

Cable No. 1ENBBC600 — Service = Control Cable
Color = Blue — Service voltage = 125Vdc
Conductors = 3 — Wire Diag. = 10R-7B, Elem. Diag. = 11ENB07

Pulled: From: 1ENBSWG01B To: 1 H13 P730
Routing: 1CC040BA, 1 TCO 40B, 1TC042B, 1TC044B, 1TC048B, 1TC054B, 1TC052B, 1TC021B, 14C021B01
Termination Points: TB01 - TP 1, 2, 3

Cable No. 1ENBBX801 — Service = Instrumentation Cable
Color = Blue — Service voltage = Instrumentation
Conductors = 3 — Wiring Diag. = 10R7AJ, Elem. Diag. = 11ENB02

Pulled: From: 1ENBSWG01B To: 1 H13 P744
Routing: 1CX022BA, 1TX022B, 1TX019B, 1TX018B, 1TX016B, 1CX016BB, 1TX014B, 1TX012B, 1TX017B, 1UX017B01
Termination Points: TB02 - TP 4, 5, 6

Cable No. = 1ENBNRC701 — Service = Control Cable
Color = Red — Service Voltage = 125Vdc
Conductors = 7 — Wiring Diag. = 10N-7AC Elem. Diag. = 11ENB01

Pulled: From: 1ENBSWG01A To: 1 H13 P743
Routing: 1CC033RA, 1TC033R, 1TC034R, 1TC035R, 1TC036R, 1TC041R, 1TC042R, 1TC046R, 1UC046R01
Termination Points: TB01 - TP 4, 5, 6

Cable No. = 1ENBNRC703 — Service = Instrumentation Cable
Color = Blue — Service voltage = 125Vdc
Conductors = 7 — Wire Diag. = 10N-7BC Elem. Diag. = 11ENB01

Pulled: From: 1ENBSWG01A To: 1 H13 P743
Routing: 1CC033RA, 1TC033R, 1TC034R, 1TC035R, 1TC036R, 1TC041R, 1TC042R, 1TC046R, 1UC046R01
Termination Points: TB01 - TP 9, 10

Cable No. = 1ENBARX800 Service = Instrumentation Cable
Color = Red Service voltage = 125Vdc
Conductors = 2 Wiring Diag. = 10N-7BC Elem. Diag. = 11ENB01

Pulled: From: 1ENBSWG01A To: 1 H13 P750
Routing: 1CX007RD, 1TX007R, 1TX009R, 1TX013R, 1TX015R, 1TX017R, 1CX030RJ, 1TX030R, 1CX030RB
Termination Points: TB01 - TP 1, 2, 3

The NRC inspector verified that the above terminations agreed with the issued raceway tickets, termination sheets, pull tickets, wiring and elementary drawings. The scope of this verification included: cable identification, cable color, cable tray sequencing and routing, number of cables wire size, cable description, and termination to termination point.

No violations or deviations were identified.

5. Safety-Related Structural Concrete

A. Review of QA Implementing Procedures

The NRC inspector reviewed several procedures and quality assurance instruction plans (QIP) for safety-related structural concrete activities. Quality assurance plans, instructions and procedures have been established, and they appear to conform to the facility QA program. No discrepancies or deviations from NRC requirements and SAR commitments were observed by the NRC inspector. The following procedures related to structural concrete activities were reviewed:

QIP-R1210370F05060K05 "Concrete Pre-Placement Plan"
QIP-R1210370F05070K03 "Concrete Placement"
QIP-R1210350F05050H05 "Batch Plant Inspection"

No violations or deviations were identified

B. Observation of Work

The NRC inspector observed work being performed at placement S170-NW-R00F-8633 for the fuel building. The NRC inspector determined by direct observation that work performance and inspection activities were being accomplished according to applicable procedures, codes, and standards in the following areas:

(1) Placement Preparation

Forms were secure, and clean. Rebar appeared to be properly placed, secured, free of concrete and excessive rust, and placed at specified distance from forms.

(2) Delivery and Placement

Proper mix was specified and delivered as indicated on batch tickets. Testing at placement location was performed according to instructions/procedures and met acceptance criteria. Frequency and type of test were taken as specified. Adequate crew, equipment and techniques were utilized. Equipment such as vibrators were used properly during placement activities by the crew. Frequency of inspection by FQC during placement met requirements.

No violations or deviations were identified.

C. Review of Records

The NRC inspector reviewed quality related records relative to containment structural concrete. Records reviewed reflected work accomplishments consistent with applicable requirements in the areas of preplacement preparation, delivery and placement, and curing. All required documentation was present and legible. The NRC inspector also reviewed inspection reports (IR) for the batch plant. Production records for placements and calibration records were reviewed by the NRC inspector. Other documents reviewed by the NRC inspector were nonconformance reports and engineering and design coordination reports (E&DCR) for these structural concrete placements. These records were legible, complete, retrievable and corrective action was specified and proper approvals were shown on these reports. Documents reviewed are listed below:

Containment Placements

RB-HT EXCH-WI83-8387
RB-ET KW-183-8391
RB-PAL-BLKT-130-8414
RB-MSLS-1622-8415
RB-PCW-152-8422
RB-PC-W162-8424
RB-SW-F-XFER-142-8441
RB-F-XFER-BO-146-8443
RB-VR-W174-8521
RB-TRANS-W162-8525

E&DCR#	Nonconformance Reports
C-4860A	2793
C-5190	2773
C-5087	
C-5068	
C-4900A	
C-5233	
C-5108	

No violations or deviations were identified.

6. Safety-Related Structures (Steel Supports)

The NRC inspector reviewed implementing procedures pertaining to the installation and inspection of the residual heat exchanger supports and observed the completed work. The procedures contained adequate installation/inspection criteria. The installation/erection specifications were adhered to, components appeared to be installed and located as specified. Records of inspection activities were complete, legible and readily retrievable. Reports such as nonconformances and deviations were adequately described and the status of corrective action or resolutions were stated and approved properly. Documents reviewed are listed below.

Support A	Drawings
1-RHS*SUP-1A-A	12210-EV-155B-5 S&W
1-RHS*SUP-1A-D	12210-EV-155A-5 S&W
1-RHS*SUP-1A-B	12210-EV-155C-4 S&W
1-RHS*SUP-1A-C	12210-EV-155D-5 S&W
	14925 22881, Sheet 1-6, Teledyne

Procedure
(QIP) R1229160F05070A00 "Mechanical Equipment Installation"

No violations or deviations were identified.

7. Exit Interview

The NRC inspectors met with the licensee representatives (denoted in paragraph 1) and R. Brown, NRC Resident Reactor Inspector, on January 14, 1983, and summarized the purpose, scope, and findings of the inspection.