APPENDIX B

U. S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-458/85-31 License/CP: CPPR-145

Docket: 50-458

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

Facility Name: River Bend Station

Inspection At: River Bend Station, St Francisville, Louisiana

Inspection Conducted: April 3-8, 1985

Inspectors: _____ 7/17/85
K. A. Whittlesey, Reactor Inspector, Project Section A, Reactor Project Branch 2 Date

_____ 7/17/85
J. I. Tapia, Reactor Inspector, Project Branch B Reactor Project Branch 2 Date

Approved: _____ 8/1/85
J. P. Jaudon, Chief, Project Section A, Reactor Project Branch 1 Date

Inspection Summary

Inspection Conducted April 3-8, 1985 (Report 50-458/85-31)

Areas Inspected: Routine, announced inspection of containment structural integrity test and integrated leak rate test. The inspection involved 51 inspector-hours onsite by two NRC inspectors.

Results: Within the two areas inspected, one violation was identified (failure to provide adequate procedure, paragraph 3).

DETAILS

1. Persons Contacted

Gulf States Utilities (GSU)

*C. M. Coones, Civil Engineer
*T. L. Crouse, Manager Quality Assurance
*P. J. Dautel, Licensing Staff Assistant
*J. C. Deddens, Vice President
*P. E. Freehill, Superintendent Startup and Test
*E. R. Grant, Supervisor Licensing
J. E. Lozes, Senior QC Inspector
*G. R. Kimmell, Supervisor Operations Quality Assurance
*G. V. King, Plant Services Supervisor
*E. R. Oswood, Quality Assurance Engineer
C. D. Payton, Field Quality Control Level II
*T. F. Plunkett, Plant Manager
J. E. Redmond, Senior QC Inspector
*T. E. Suhrke, Manager Project Planning and Coordination

Stone and Webster

*R. H. Bernier, Senior Advisory Engineer
*J. L. Busa, Assistant to the Chief Engineer
*F. W. Finger III, Project Manager, Preliminary Test Organization
*R. I. Parry, Supervisor, Mechanical Test Engineering

*Indicates presence at exit interview conducted April 8, 1985.

2. Structural Integrity Test (SIT)

The purpose of the SIT is to demonstrate the ability of the containment vessel to withstand internal loads imposed by pressurizing to 1.15 times the design pressure of 15 psig. Preoperational Test Procedure No. 1 PASIT.001, Revision 1, "Pressure Test of the Steel Containment," was reviewed and determined to meet NRC requirements and licensee commitments listed in the Final Safety Analysis Report. The test, already in progress at the time of the NRC inspector's arrival on site, was being conducted in accordance with the reviewed and approved test procedure.

The inspectors reviewed the procedure for ultrasonic monitoring of electrical penetrations (attachment 10.2 to 1 PASIT.001) to be performed under step 7.19. The ultrasonic leak detection method was implemented in lieu of local pneumatic tests of the circumferential butt welds in electrical penetration nozzles. Calibration of acoustic monitoring equipment on a mockup in the annulus area was observed prior to

commencement of the ultrasonic inspection by field quality control personnel. The NRC inspectors observed and independently monitored inspection of several penetrations and noted that no leaks were detected. The method for discerning the equipment response to leakage from response to background noise was described to the inspectors as well as demonstrated.

At the completion of the SIT, the containment was depressurized.

3. Integrated Leak Rate Test

The preoperational containment integrated leak rate test conducted in accordance with Preoperational/Acceptance Test Procedure 1-PT-57-1 "Integrated Leak Rate Test," was addressed during this portion of the inspection. The inspection included procedure and records review, test witnessing, and independent calculations by the NRC inspectors. The inspection was performed in order to ascertain whether testing was conducted in accordance with approved procedures and satisfied the specified acceptance criteria of 10 CFR 50, Appendix J and the Final Safety Analysis Report.

After a period of time at atmospheric pressure to allow for degassing of structures and components inside containment subsequent to the SIT, pressurization of the containment vessel for the ILRT commenced. Stabilization commenced after internal pressure reached 8.6 psig (23.3 psia), the compressors were shut down and isolated. The atmosphere is considered stabilized when the rate of change of containment temperature averaged over the last 4 hours minus the rate of change in containment temperature averaged over the last hour is less than 0.5°F/hr. About 11:00 a.m. on April 5, 1985, the NRC inspectors were advised that containment atmosphere stabilization had been achieved and the official 24-hour test had begun. Initial calculated leakage was excessive and attempts to identify the leakage source resulted in the following sequence of events.

ILRT configuration includes a pneumatic block of main steam isolation valves (MSIVs). An increasing pressure trend was noticed on the pressure gauge on the outboard MSIVs indicating leakage across the inboard MSIVs. After the piping between inboard and outboard MSIVs equalized with containment pressure, the downstream piping was sealed at a pressure of 8.5 psig to minimize the effect of this leakage. It should be noted that the MSIVs are supplied with a positive leakage control system, which would be pressurized above peak postulated accident pressure in the event of a design basis accident. Additionally, Valve 1 RHS-V15, an instrument root valve on Residual Heat Removal B pump discharge piping was found out of position and leaking a steady stream of water. Although the valve lineup sheet and control room tagout log both indicated the valve to be in the

closed position, it was found open by the licensee. The importance of compliance with tagging procedures was discussed at the exit meeting, although this was considered an isolated case. The valve was closed, but calculated leakage remained excessive, indicating a remaining unidentified leakage source. Further investigation by the licensee identified a direct leakage path from the containment vessel to the annulus via three instrument lines associated with the containment to annulus differential pressure monitoring portion of the annulus pressure control system. Instrument root, isolation, and equalization valves were open for 1 HVR*PDT GOA, 1 HVR*PDT 60C, and 1 HVR*PDT 60E. This allowed a direct leakage path from containment to the annulus because six differential pressure instruments were omitted from the ILRT valve lineup. The subject instrument and associated root valves were added to the ILRT lineup via Minor Change Request (MCR) Number 4; a correct lineup was achieved, and the ILRT was restarted.

After the restart of the test, motor operated valve 1 DFR*MOV 146, a designated containment isolation valve, was determined to be in the closed condition. 10 CFR 50, Appendix J requires that closure of containment isolation valves for the ILRT be accomplished by normal operation. In this case, normal operation would indicate response of the valve to a containment isolation signal. However, the valve, having been recently installed under authorization of Engineering and Design Coordination Report Number P13043B, was not yet connected to electrical supply so it could not be closed by normal means. The valve had been hand closed prior to initiation of the test, and it was not included in the ILRT valve lineup, although the expressed intent had been to call 1 DFR*MOV 146 open in the lineup and rely on check valves 1 DFR*V131 and 1 DFR*V132. The omission of differential pressure instruments 1 HVR*POT 60A, 1HVR*PDT 60B, 1 HVR*PDT 60C, 1 HVR*PDT 60D, 1 HVR*PDT 60E, and 1 HVR*PDT 60F and the omission of 1 DFR*MOV 146 from the valve lineup for 1-PT-57-1 constitute a violation for failure to have adequate procedures (458/8531-01).

1 DFR*MOV 146 was opened, and the test continued. There was no noticeable perturbation in the test data which could be attributed to the valve manipulation, and open drain valves outboard showed no sign of water leakage. It should be emphasized that as a portion of the reactor building floor drain system for pump back suppression pool water inventory, the referenced valve would be exposed to a water seal rather than directly exposed to containment atmosphere. Pending final acceptance and test demonstrating a fluid leakage rate within technical specification limits for 1 DFR*MOV 146, this item remains open. (485/8531-02).

Continuation of the test indicated convergence of the calculated leak rate and the upper confidence limit below the allowable leakage. At completion of the 24-hour test, the superimposed leak verification portion of the test was performed with results between the calculated and imposed leakages within the 25% La limit.

Subsequent to the performance of the test, the NRC inspectors obtained the raw data and computed the leakage rate in accordance with the Mass Point Data Analysis technique. The computations performed by the NRC inspector were compared with the licensee's results for the purpose of verifying the calculational procedure and confirming the results. This analytical technique confirmed the acceptability of the results obtained by the licensee.

4. Exit Interview

The NRC inspector met with the licensee representatives denoted in paragraph 1 at the conclusion of the inspection. The NRC inspector summarized the scope and findings of the inspection.