APPENDIX B

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-458/86-02 License NPF-47

Docket: 50-458

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

Facility Name: River Bend Station

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

Inspection Conducted: January 13-17, 1986

Inspectors: W R Bennett for 2/14/86
W. M. McNeill, Project Engineer, Project Section A, Reactor Projects Branch (paragraphs 1, 2, and 5) Date

W R Bennett 2/14/86
W. R. Bennett, Project Engineer, Project Section A, Reactor Projects Branch (pars. 1, 3, 4, & 5) Date

Approved: J. P. Jaudon 2/14/86
J. P. Jaudon, Chief, Project Section A, Reactor Projects Branch Date

Inspection Summary

Inspection Conducted January 13-17, 1986 (Report 50-458/86-02)

Areas Inspected: Routine, unannounced inspection of onsite followup, surveillance testing, and maintenance. The inspection involved 74 inspector-hours onsite by two NRC inspectors.

Results: Within the three areas inspected, one violation was identified (failure to properly implement the temporary alteration procedure).

DETAILS

1. Persons Contacted

Gulf States Utilities (GSU)

*R. E. Barnes, Mechanical Engineer
*W. H. Benkert, Quality Engineer
*J. B. Blakley, Mechanical Engineer
*W. J. Cahill, Sr. Vice President
D. Cathey, Systems Engineer
*T. L. Crouse, QA Manager
*J. Deddens, Vice President - River Bend Nuclear Group
G. Englert, Mechanical Engineer
*J. W. Evans, Stenographic
A. D. Fredieu, Assistant Operations Supervisor
*P. E. Freehill, Superintendent, Startup and Test
*D. R. Gipson, Assistant Plant Manager-Operations
*P. D. Graham, Assistant Plant Manager-Services
E. Grant, Supervisor, Licensing
*G. K. Henry, Supervisor, Electrical Engineering
J. Huff, Planning and Scheduling Specialist
*R. King, Licensing Engineer
*A. D. Kowalczuk, Assistant Plant Manager-Maintenance and Materials
*I. M. Malik, Supervisor, Quality Engineering
*J. H. McQuirter, Licensing Engineer
*J. McWhorter, QA Engineer
*T. G. Murphy, Supervisor, Planning and Scheduling
*T. F. Plunkett, Plant Manager
*W. J. Reed, Director, Nuclear Licensing
*M. L. Reeves, Mechanical Engineer
*D. Reynerson, Director, Nuclear Plant Engineering
*L. Schell, Electrical Engineer
*K. B. Suhrke, Manager, Projects Planning and Coordination
*P. F. Tomlinson, Director, Quality Services
*D. M. Williamson, Operations Supervisor
*J. A. Wright, Supervisor, Mechanical Engineering

Stone and Webster (S&W)

*M. R. Gaudette, Engineering Assurance
*B. R. Hall, Plant Services Supervisor

Cajun Electric

*J. D. Gore, Operations Monitor
*R. E. Perkins, Resident Engineer

The NRC inspectors also contacted other site personnel including administrative, clerical, operations, and maintenance personnel.

*Denotes those attending the exit interview conducted on January 17, 1986.

2. Onsite Followup of Reports of Nonroutine Events

The inspection objectives were to determine whether the licensee has taken corrective actions as stated in written reports of events and whether responses to events were adequate and met regulatory requirements, licensee conditions, and commitments in regard to recent problems with motor operated valves.

On January 5, a safety-related valve, feedwater block valve 1FWS*MOV-7B, was inadvertently closed by control room operator, who immediately attempted to open this same valve. After several attempts to open, with the valve breaker tripping each time, it was found that the valve operator had broken off. The valve operator was found laying on the floor. The licensee issued Condition Report No. 86-022 to document this event. The engineering evaluation of this problem concluded that this event was the result of a combination of insufficient thread engagement and improper torque of the bolts which secure the operator to the valve. The NRC inspector reviewed the engineering evaluation. The improper torque was based on the observation that all of the 10 other safety-related valves with the same model Limitorque operator (SMB-4) were found to be torqued from 100 to 400 foot-pounds (ft.-lbs.). The valve manufacturer's (Velan Inc.) maintenance manual requirements are 1270 ft-lbs. for a 1¼ bolt. Inquiries of the valve manufacturer and the operator manufacturer have redefined this requirement to 700 ft.-lbs. All of the gate and globe valves used at River Bend have been supplied by Velan through S&W with the exception of seven in the high pressure core spray system. These seven were supplied by Anchor/Darling Valve Co. through General Electric (G.E.). The Anchor/Darling maintenance manual was found to be nonspecific on torque requirements ("tight as sufficiently possible"). However, inquiries to Anchor/Darling have established that there are similar torque requirements.

The SMB-4 type Limitorque operator is a large model of high horsepower (13-26 horsepower). The sampling was expanded to other models of Limitorque operators above six horsepower. This inspection was performed before the torque requirements were established and was somewhat inconclusive. The bolts were checked to be "snug" with a 12" wrench. However, three of eight operators were found to be less than "snug". An additional four operators in this category were checked with the established torque requirements and three of these failed to meet torque requirements.

It was also found that the failed valve operator 1FWS*MOV-7B had short bolts. An inspection was made of the 10 other SMB-4 operators. Two valve operators, which were supplied by Anchor/Darling, were found to have short bolts. It will be further discussed by the licensee with Anchor/Darling if the requirement for bolt length of 1½ times the bolt diameter is applicable to their valves.

A review by the NRC inspector of the S&W installation records found that the operator of the failed valve had been removed and returned to Limitorque for rework. The records also document that the operator was reassemblied to the Velan manual requirements. There was no evidence of bolt replacement which would account for the short bolts. It was also found by the licensee, during replacement and reassembly of the operator for the failed valve, that, when the operator was torqued with the valve in a closed position, there was a gap between the mating surfaces of operator and valve.

The NRC inspector reviewed the inservice test plan, maintenance procedures and a computerized listing of safety-related valves to establish the scope of reinspection necessary. It appears that there are 262 Limitorque operators on safety-related valves, Table 1 summarizes the distribution of Limitorque models found on safety-related valves.

Table I

SMB-4	10
SMB-3 & SB-3	6
SMB-2 & SB-2	13
SMB-1 & SB-1	16
SMB-0 & SB-0	57
SMB-00 & SB-00	63
SMB-000	86
SMC-C	11

The NRC inspector noted that the licensee has an inspection plan established to verify the torque of all Limitorque operators. After verifying and correcting any torque deficiencies, a torque seal will be applied so that a long-term monitoring program can be implemented. This appears necessary because the root cause of untorqued bolts has not been positively established, although, it appears to be the result of applying preload torque to the operator valve bolts with the valve in a closed position. The verification effort and investigation of why the operator bolts became under-torqued is an open item to be reviewed further by the NRC in subsequent inspections (458/8602-01).

During the replacement and reassembly of 1 FWS*MOV-7B it was noted that the selected spare valve had unqualified wiring in its operator. This was documented by the licensee on Condition Report No. 86-038. This spare and six other operators had been procured by G.E. through Anchor/Darling for Unit No. 2. G.E. has supplied seven valves per unit at River Bend. The Unit No. 2 valves are being used as spares for Unit No. 1. Previously, in 1985, all MOVs (62) installed inside containment had been inspected for proper wiring. A sample of five valves outside containment were inspected and they were found acceptable. An inspection of all (14) G.E.-supplied valves found seven with unqualified wire. This included one Unit No. 2 spare that had been installed in Unit 1, the spare that was to be installed, and the remaining spares. All installed valves with unqualified wire were tagged and Maintenance Work Requests issued to replace the wire. The remaining spares have been tagged as nonconforming. This appears to be

a limited problem associated with G.E.'s procurement through Anchor/Darling of 1978 vintage Limitorque operators when Limitorque apparently did not have sufficient manufacturing process controls to assure use of correct wire. All other Limitorque operators installed at River Bend post date this procurement by 2 years and were procured mostly by S&W through Velan.

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

3. Quality Assurance (QA) Program (Surveillance Testing)

The purpose of this portion of the inspection was to ascertain whether the licensee has implemented programs for control and evaluation of surveillance testing, calibration and inspection required by Section 4 of the Technical Specifications (TS) and Inservice Inspection of Pumps and Valves as described in 10 CFR 50.55a.(g).

The NRC inspector reviewed 22 completed surveillance procedures. All procedures were properly prepared and approved, and were included in a master schedule. All procedures were completed satisfactorily and met all TS requirements. The NRC inspector noted that, in several instances, setpoints were found within TS requirements but outside procedural requirements. Utilizing the surveillance procedure, the setpoints were adjusted to be within the requirements set forth in the procedure. The NRC inspector asked how these adjustments were documented and trended. Discussions with instrument and control personnel and supervisors, disclosed that these adjustments are reported on the surveillance completion/exception form and thus are properly trended.

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

4. QA Program (Maintenance)

The purpose of this portion of the inspection was to ascertain whether the licensee has implemented a QA program relating to maintenance activities that is in conformance with TS, regulatory requirements, commitments in the license and industry guides or standards.

The NRC inspector reviewed six maintenance work requests and determined that they had been properly initiated, reviewed, and approved. The maintenance activities were performed in accordance with appropriate procedures.

The NRC inspector reviewed the temporary alteration log. Two temporary alterations (85-RHS-28 and -29) each required lifting of two leads. Each temporary alteration request showed that only one of the two leads had been signed for as being lifted and neither lead was verified as being lifted as required by River Bend Procedure ADM-0031. The NRC inspector verified that both leads specified in 85-RHS-28 had been lifted and temporary alteration

tags had been installed. This is an apparent violation (458/8602-02). The licensee subsequently performed a complete audit of the temporary alterations log and found 13 procedural implementation deficiencies which are documented in Condition Report No. 86-064.

Discussions with licensee personnel disclosed that no testing is being performed when temporary alterations are implemented. The NRC inspector questioned whether testing was required. The licensee stated that this question of whether testing is required when temporary alterations are installed has been addressed by the Facility Review Committee (FRC) and is an FRC open item. The requirement for testing of temporary alterations is considered an NRC open item (458/8602-03).

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

5. Exit Interview

An exit interview was held on January 17, 1986, with the personnel denoted in paragraph 1 of this report. The NRC senior resident inspector also attended this meeting. At this meeting, the scope of the inspection and the findings were summarized.