

APPENDIX

U. S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-458/85-44

CP: CPPR-145

Docket: 50-458

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

Facility Name: River Bend Station

Inspection At: River Bend Station

Inspection Conducted: June 3 through July 26, 1985

Inspectors: S.H. Johnson 9/12/85
For W. M. McNeill, Reactor Inspector, Project Section A, Reactor Projects Branch Date

S.H. Johnson 9/12/85
For R. G. Taylor, Reactor Inspector, Project Section A, Reactor Projects Branch Date

NRC consultants: Keith A. Ward (EG&G Idaho, Inc.)
Ron Larson (EG&G Idaho, Inc.)

Approved: S.H. Johnson 9/12/85
For J. P. Jaudon, Chief, Project Section A, Reactor Project Branch Date

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Inspection Summary

Inspection Conducted June 3 to July 26, 1985 (Report 50-458/85-44)

Areas Inspected: Routine, announced inspection of Open Significant Construction Deficiencies (10 CFR 50.55(e) and previous NRC inspection findings. The inspection involved 174 inspector-hours onsite by two NRC inspectors and two NRC consultants.

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

DETAILS

1. Persons Contacted

Principal Licensee Personnel (GSU)

- W. J. Cahill, Senior Vice President
- T. C. Crouse, Quality Assurance Manager
- T. F. Plunkett, Plant Manager
- R. W. Helmick, Director-Projects
- R. B. Stafford, Director-Quality Services

Principal Stone and Webster Engineering Corporation Personnel (S&W)

- W. I. Clifford, Resident Project Manager
- R. L. Spence, Resident Quality Control Manager
- D. P. Barry, Superintendent-Engineering

The NRC inspector and NRC consultants also interviewed and interfaced with additional GSU and S&W personnel as necessary to meet the purpose of the inspection.

2. Action on Previous Inspection Findings

(Closed) Unresolved Item (458/8402-01): Clarification was required on the identification of film and its associated reader sheet for weld A on spool RA 017X.

It was reported that the film for weld A on spool RA 017X was dated August 22, 1977, and its associated reader sheet was identified weld H and was dated August 19, 1977. A review by the NRC inspector of the original

reader sheet, not the carbon copy found in the film packet, established that the reader sheet was identified A but misplacement of the carbon paper resulted in a cut off of the top of the letter A, thus the carbon copy appeared as a letter H. In addition, the reader sheet was dated in the upper right hand corner as August 19, 1977, but the lower left corner documented that the radiographs were made on August 22, 1977. It appears that the reader sheet was started on Friday the 19th and then the radiographs were made on Monday the 22nd. After the NRC review, the carbon copy was corrected. There is no evidence to suggest that this film and the reader sheet are not properly associated and identified. This item is closed.

(Closed) Unresolved Item (458/8402-02): The licensee's radiographers were not recording the location of all indications identified.

A sample of film was reviewed (noted in the following paragraph). It was S&W's (the licensee's radiographer) practice to record the location of unacceptable indications by dimensions, template, etc. This practice has been observed in many previous NRC inspections. If indications were found to be acceptable, their presence is noted but their locations were not recorded. This is a standard practice in the industry. Whereas recording of the location of acceptable indications would be advantageous for the subsequent inservice inspection, allow for comparability in nondestructive methods (UT vs RT) and aid reviewers of the radiographs, it is not a requirement in procedures or specifications. This item is closed.

(Closed) Violation (458/8402-03): Radiographs failed to meet ASME Code quality requirements in that surface conditions (weld ripples) could mask indications and radiographs exceeded the plus 30 percent density requirement.

The reradiographs of the 12 elbows (16 welds) were reviewed by the NRC inspector as well as the 10 CFR 50.55(e) report (DR-173) and the General Electric Field Deviation Disposition Request No. 251, Revisions 0 through 2. The corrective action to this problem was to reradiograph all the welds in question that were supplied by ITT Grinnell Corporation through General Electric. These welds had been ground flush for inservice inspection and, thus, the surface conditions removed. The welds are identified in table 1. These are all the longitudinal welds of elbows supplied by Grinnell. Only one other subvendor supplied welded elbows through General Electric, Associated Piping and Engineering Corporation. These welds were reviewed 100 percent by GSU and found to not have these problems. A sample of Associated welds were also reviewed by the NRC inspector and are identified in table 2. No problems were found with the associated elbows.

Table 1 ITT Grinnell Welds

<u>Line No.</u>	<u>Elbow Serial No.</u>
1-MSS-600	32-7 90° Els
1-MSS-600	33-7 " "
1-MSS-900	34-7 " "
1-MSS-700	35-7 " "
1-MSS-700	36-7 " "
1-MSS-900	38-7 " "
1-MSS-600	39-7 " "
1-MSS-800	44-7 " "
1-MSS-800	1-A-1 50° Els
1-MSS-900	1-D-1 " "
1-MSS-700	1-F-1 " "
1-MSS-600	1-G-1 " "

Table 2 Associated Welds

<u>Spool No.</u>	<u>Elbow Serial No.</u>
G002-B-1	14 20" 90° Els
G003-B-1	11 20" 90° Els
G004-B-1	12 20" 90° Els
G011-B-270-1	2 10" 90° Els

(Closed) Open Item (458/8436-03): Inspection reports (IRs) on reinspection of cable trays for fill requirements did not identify that all applicable trays had been reinspected.

Since the last NRC inspection, a detailed review of the cable trays requiring inspection and trays that have been inspected found an additional three cable trays to be inspected. The engineering review established 1,182 required inspection. This engineering review was overchecked by the NRC inspector. The difference between 1,297 and 1,182 represents additional trays inspected but not required to be inspected (Cat II, duplicates, no fills, and etc.) Amendment 16 of the FSAR has also modified the cable tray fill inspection requirement. Overfill, if separation requirements are not compromised, is acceptable. The table below summarizes the IRs on this reinspection effort. This item is closed.

<u>IR No. I</u>	<u>No. of cable trays</u>	<u>IR No.</u>	<u>No. of cable trays</u>
E50000847	3	E40002049	126
E50000700	1	E40002048	34
E50000698	1	E40002047	130

E50000696	3	E40001495	67
E50000694	10	E40001489	109
E50000692	6	E40001483	90
E50000690	1	E40001482	80
E50000689	7	E40001481	47
E50000688	8	E40001476	57
E50000685	3	E40001469	136
E50000030	4	E40001420	259
E40002135	2	E40001309	24
E40002134	2	E40001305	37
E40001289	13	E40001283	2
E40001279	1	E40001249	4

(Closed) Violation (458/8502-02): Records were found not be stored in accordance with ANSI standards in that both S&W and GSU vaults had loosely stored paper and paperboard boxes. Corrective action was to remove loosely stored records or secure such in folders, etc., and replace paperboard boxes with metal file cabinets. This was verified by GSU QA surveillance inspections. The report of surveillance was reviewed and both vaults in questions were inspected by the NRC inspector. No additional problems were identified. Preventative action was to have training sessions for GSU and S&W records personnel. Records of these training sessions were also reviewed by the NRC inspector. This violation is closed.

(Closed) Violation (458/84-36-05): IRs had incorrect revisions of drawings, specifications and inspection plans listed as being used for the inspection activity.

S&W has completed an interdisciplinary review of all IRs issued at this site. Fourteen disciplines and subgroups (power generation control complex, electrical raceways, piping/hangers, instrumentation, electrical equipment, electrical cable and terminations, liner, HVAC, civil, mechanical, project quality test group, structural and receipt inspection) sampled IRs from 1979 to the present in accordance with Quality Assurance Directive No. 7.11. During that time frame, about 75,000 IRs were written (not inclusive of receipt inspection). A total of 4,400 IRs in these disciplines (except structural) were sampled and about 750 errors were identified. In the structural discipline a 100% review was performed on all 10,500 IRs and about 1,000 errors were identified. The errors were reviewed in detail and the necessary corrections documented. Very limited reinspection resulted from this activity. None of the errors resulted in an impact on hardware. The NRC inspector reviewed a sample of 14 IRs that were identified to have errors. The changes made to correct the IRs and justification for such changes were reviewed in detail. This entailed review of the IR and its inspection plan to establish the scope of the activity and the documentation change that was made (drawing, specifi-

cation or inspection plan revision) to determine the impact, if any, on the scope of the inspection activity. In this review, it was noted that the error rate observed was biased to the high side because there were no grace periods allowed after a new revision for distribution time.

A sample of seven IRs in the instrumentation discipline was inspected by the NRC inspector. The specification inspection plan and drawings were verified to be of the correct revision at the time of the inspection.

The action taken to prevent recurrence was to retrain inspection personnel to use the document and drawing indexes (e.g., IS-217 and IS-256) in order to verify the correct revision of a document. This item is considered closed.

(Closed) Violation (458/8501-02): Surveillance reports of document control activities of unsatisfactory conditions were not responded to within 15 days with corrective action.

GSU QA engineering performed surveillance in order to scope this problem. The cited examples were responded to and corrective action taken to close the reports. In this regard, QA surveillance reports CSEZ-85-01-11 and CSEZ-85-03-02 were reviewed by the NRC inspector. As preventative action to the violation, document control personnel were retrained. Records of this training were reviewed by the NRC inspector. In addition, an interoffice correspondence (IOC) dated March 8, 1985, was issued to document recipients which requested them to review the procedure CSI 11.1.2 and its requirements. A review by the NRC inspector of recent surveillance reports found that, in a recent month, 25 clear reports and 7 unsatisfactory reports were issued. All of the unsatisfactory reports were responded to within 15 days. The surveillance log book and procedure CSI 11.1.2, "Document System Activity Surveillance Reports," were also reviewed by the NRC inspector.

(Closed) Violation (458/8502-01): The measures established for control of the GSU warehouse activities and the spare parts stored therein were not fully implemented. Several examples were cited of this problem.

In this regard, the revised procedures MHP-0002, "Storage of Material"; NHP-0004, "Maintenance of Material in Warehouse Storage"; and MSP-0002, "Corrective Maintenance Program," were reviewed by the NRC inspector. A review of the warehouse and material in storage found that the new labeling requirements were being complied with by GSU. It was also observed that ASME class parts were segregated from non-ASME parts.

The "Equipment Storage History Cards" (ESHCs) and their associated "Maintenance Check Records" (MCRs) were inspected by the NRC inspector. It appears that all ESHCs and MCRs are retrievable based on a sampling of these records. ESHCs are now issued on each specific part requiring

maintenance rather than on a generic basis. Preventative maintenance was found to be documented on MCRs and backed up with maintenance reports as required by such procedures as PMP-100, etc. ESHCs are now generated within 30 days of receipt. A review of the daily receiving log verified such. It was noted that ESHCs are now being issued for small motors for MOVs and small rotating equipment such as fans and pumps. Presently, there was found to be about 50 quality class 1 parts on preventative maintenance, two-thirds of which were motors for MOVs. It appears that a clearer rationale has been established for determining why and what preventative maintenance is to be performed. In addition, it was also noted that Nuclear Parts Associates (NUPA), a joint venture of GSU and S&W, will be storing spare parts for this site. NUPA presently has acquired about one-third of its projected inventory. GSU will continue to maintain a warehouse for consumables and modification parts. GSU QC is monitoring warehouse activities and the NRC inspector reviewed QCIRs on this monitoring activity. The monitoring is of nearly all quality class 1 maintenance performed and is accomplished under the River Bend warehouse maintenance system schedule which was also reviewed.

In regard to measures taken to assure that chemicals were separated to avoid mixing in the event of an accident, it was noted that "Product Data Pages" (PDPs) are required for flammable and/or hazardous chemicals. In the PDPs, vendors are required to identify special storage requirements. In addition, PDPs are required by procedure to have chemical permits issued. Storage requirements are also identified in chemical permits. It was observed that some acetone was stored with various lube oils. Neither the PDPs nor the vendor supplied documentation identified any storage requirements for action or its compatibility with lub oils. It was reported to the inspector that there was no chemical permit for acetone and that only one-third of the chemical permits required have been issued to date. This will be addressed as an inspection item in a later operation (MC 2514) inspection.

(Closed) Violation (458/8502-03): Construction records for structural steel columns in the auxiliary building were not retrievable or available for review.

A type C IR S56200001 was issued on this problem. The problem was found to be limited to the 64 columns in the auxiliary building and 18 columns in the control building. Construction records, "Construction Completion Checklist Program" (CCCPs), were issued for any column without documentation and QC inspection was performed. The NRC inspector reviewed the ES-1 and ES-66 drawing series and verified the above scope as well as the CCCPs and their associated IRs for the auxiliary building. As preventative action, the ironworkers and inspection personnel were retrained. Records of this training were reviewed by the NRC inspector. In regard to the errors found on S 1201943, it was noted that an E&DCR E 32.97A had changed the design from a Nelson type stud to an A-36 all

thread welded stud, which means that a snug tight torque is correct. A new sample of 10 columns was established from the above review. The records were reviewed for each of these columns. It was found that records could not be found for one column (Post) identified I-53P2 found on drawing ES-66G; therefore, a new type C IR was issued S 5620032. This IR reestablished what inspection records were available for all the columns and also reinspection of I-53P2 and one other column. A new sample of 20 columns was then checked by the NRC inspector and found to be satisfactory.

(Closed) Open Item (458/8510-01): A program for ASME Section XI repair activities had not been established.

GSU and S&W have established a mutual program for ASME Section XI repair activities. The program is described by procedures (GSU) NPE-3-003, Revision 1, dated March 27, 1985, "ASME Section XI Repair/Replacement Activities"; Section 25 of the S&W QA Manual, "SWEC Operations under the ASME Section XI Code"; Revision C, dated August 19, 1985, and its appendix Section 25/RB, Revision 0, dated August 19, 1985, and (S&W) SEP 106.10, dated July 3 1985, "Control of ASME XI Activities," dated June 3, 1985. In summary, after an N-5 form is issued, all repairs will be to ASME Section XI rules and documented with NR-1 and NIS-2 certifications. Repairs prior to a N-5 issue, if not covered with a new N-1 or NA-1 form, will be documented on the N-5 form.

(Closed) Violation (458/8510-02): CCCPs did not assure compliance by welding material station attendants to requirements of procedures as evidenced by the delegation of the documentation to attendants and also that ovens were found below the temperature requirements.

Additional surveillance by S&W and GSU established that the observed conditions were an isolated case. The NRC inspector reviewed the GSU QA audit CSWZ 85-05-02 in this regard and the procedure CMP 6.4. The preventative action was to have supervisors initial all CCCPs generated by attendants in order to preclude similar errors. An inspection of one of the two current stations (No. 1) found that CCCPs were issued as required and all daily logs were in order. Recorded temperatures were found to be acceptable. A sample of 2 ovens were independently checked and found acceptable. A minor change to the procedure was made so that the procedures better described activities in regard to frequency of checking, recording results and use of pyrometers.

(Closed) Violation (458/8540-02): Sufficient records were not maintained to furnish evidence of activities affecting quality in that IRs and markup drawings on structural inspection of high strength bolts contained errors.

S&W issued a type C IR S 5620026 which addressed the scope of this problem and corrective action on the cited examples. Of the 26 inspectors, 11 were found to have contributed significantly (e.g., 90%) to the total number

of errors identified. At this site, there were about 10,000 bolted connections documented on about 500 IRs. The 11 inspectors' IRs were reviewed 100% and corrections made. The typical errors were wrong connection description, bolt quantity or mark-up drawing information. For the balance of the inspectors, a sample inspection was done of each inspector's IRs. A low (i.e., less than 10%) error rate was observed in the remaining inspectors. Training was performed on this problem with the 4 inspectors currently employed. The training records and the above IRs were reviewed by the NRC inspector. A sample of 66 connections on 7 IRs were inspected, including some corrected IRs, and no additional problems were identified. Note in addition to the first 6 inspectors identified in the GSU response to this violation, an additional 5 inspectors were identified as a results of the sampling inspection which required 100% review of their records. This problem appears to be limited to bolting type IRs where numerous data points were entered on a single IR (e.g., an average of 20 connections per IR). As a result, the chance of an IR having an error in one of the data points increased. This violation is considered closed.

(Closed) Violation (458/8533-01): Failure to adequately document changes to inspection report results.

The NRC inspector reviewed the corrective steps which included:

- . the reviewing of S&W inspection reports for inappropriate changes,
- . the reinspection of any item identified on an inspection report containing inappropriately changed, and
- . the retraining of S&W inspection personnel authorized to perform review of inspection reports.

The NRC inspector interviewed the S&W FQC inspector who originated the inspection report identified in the violation as having been inappropriately changed and determined that there had been no deliberate attempt made by the reviewer to falsify records.

This item is considered closed.

3. Review of Potentially Significant Construction Deficiencies

The NRC inspector reviewed the below listed items that were initially reported by the licensee as potentially significant construction deficiencies but were later determined by the licensee to not be reportable within the context of 10 CFR 50.55(e). The review was for the purpose of establishing whether the licensee's determination of nonreportability was proper and whether corrective actions were appropriate to the involved deficiency. These items are considered closed

since the NRC inspector had no further questions on either aspect of the review.

<u>Deficiency Report Number</u>	<u>Short Subject Title</u>
DR-156	Non-essential loads connected on Class 1E buses
DR-242	Fractured pinion gear in Limitorque valve operator
DR-268	Rosemount trip units
DR-274	Rating of field wiring to solenoid valves
DR-279	Lack of preventative maintenance for LPCS and RCIC pumps
CR-285	Rosemount 1152 Transmitters
DR-292	Relay contacts on CRD backup SCRAM valves
DR-293	Material supplied by Interstate Steel
DR-300	Pressure retaining components not hydrostatically tested
DR-302	Wiring of HPCS diesel generator
DR-304	Followup to IE Bulletin 84-52
DR-306	Cracked nuts of wedge type concrete anchors
DR-308	Solder connections in radiation monitor
DR-316	Floor drain check valves had incorrect springs
DR-319	Corrison in motor operators for valves

The NRC inspector reviewed the following formally reported significant deficiency reports to determine whether effective corrective measures had been taken for each deficiency. The NRC inspector determined that such action had been taken in each case and the below listed reports are considered closed.

<u>Deficiency Report Number</u>	<u>Short Subject Title</u>
DR-117	Containment negative pressure scenario
DR-177	Neutron monitor cable problems
DR-183	Taper on socket weld flanges

DR-199	Connectors separate from coaxial cables
DR-216	Electrical penetration problems
DR-222	Relocation of 125 DC panel
DR-228	Linear indications in diesel engine valves
DR-246	Minimum wall thickness discrepancy
DR-250	Leakage in Rosemount Model 1153 transmitters
DR-255	Vital A.C. inverter adjustments
DR-260	Drain line for CRD SCRAM discharge volume
DR-261	ITE-Rowan auxiliary relays
DR-263	NGS-01 Rockbestos cable
DR-270	Containment penetration pipe and restraint lugs
DR-271	Conax containment penetrations for RTDs
DR-272	Spring can hanger stop pins not removed during testing
DR-276	Improper design locations for check valve in RCIC-HPCS systems
DR-277	Improper solder flux used for electrical connections
DR-281	HVAC charcoal filter units not properly supported
DR-282	Anti-syphon holes in spent fuel pool piping not drilled
DR-283	Failure of drywell pressure sealing devices
DR-298	Defective diesel engine air start check valves
DR-299	Failure of back pressure regulating valve in diesel engine fuel system
DR-301	Limiter torque valve operators with high torque switch settings
DR-303	Failure of bellows connecting pumps to service water system piping
DR-310	Missing lock pins in diesel generator throttle control system

In addition, the NRC inspector reviewed the following deficiency reports for which some corrective measures were incomplete as of the time of the inspection to assess the appropriateness of the proposed action and the effect on any reactor operations that may be authorized by the Nuclear Regulatory Commission. These items all remain open pending verification that proposed actions have been completed.

DR-193: A line break scenario had been developed involving piping running from the containment building pressure suppression pool to various safety-related pumps located in the auxiliary building. The accident postulation envisioned flooding the pump rooms coupled with a lowering of the suppression pool below design level. The corrective action is to provide a system for detection of the accident and for initiation of a water return pump back system that would mitigate both possible results of the action. The corrective action was partially completed at the time of the inspection and the licensee has committed to having the entire action complete prior to exceeding 5% reactor power.

DR-280: This involves the failure of magnesium alloy rotors of Limitorque motor operators in a simulated LOCA environment. Only valves involved are the two in the LPCI mode of the RHR system operation. Two like valves outside containment not subject to LOCA environment can be used as backup to the units in containment. The licensee has proposed to revise his Emergency Operating Procedures to provide instruction for appropriate valve alignments when using the LPCI mode of operation. At the present time, no corrective action to alleviate the operator failure mechanism has been developed and proven.

DR-287: This item involves the misapplication of a fuse block by the vendor of the vital A.C. supply inverters. The misapplication involves a potential for pulling the studs from the block when making external connections to the block or when replacing the fuse. A corrective action has been developed and necessary hardware ordered but not delivered. At present, the connections have been made up as suggested by the fuse block manufacturer and have been operating satisfactorily.

DR-290: This item involves retesting of portions of the HVAC system, primarily those related to the charcoal filtration units. The retest is to be conducted at the peak pressure generated by the blowers as opposed to normal operating pressure as was used in the original test. The licensee has committed to having this item completed prior to loading fuel in the reactor and the NRC senior resident inspector will so verify.

DR-295: This item involves discovery during preoperational testing that several GE electrical circuit breakers would not close on demand from remote controls. The cause was determined to be that rocket-pawl mechanical system for loading the closure charging spring had become worn by repeated use of breakers during preliminary tests and the

preoperational tests. At the time of this inspection, 14 of 32 circuit breakers had been repaired and the licensee had instituted a preventative maintenance program on the units. All of the units must be reworked as required to assure their functionability prior to loading fuel in the reactor and the NRC resident inspector will so verify.

DR-313: This item involves a finding that certain components in cabinets containing the controls for the generator unit on emergency diesel generators tend to overheat during generator operation. The licensee is in the process of providing additional ventilation for the components and has scheduled completion prior to fuel load. In the event that the modifications are not completed, however, the licensee has determined that leaving the cabinet open will provide sufficient cooling. If the latter course is necessary, emergency operating procedures should cause the doors to be opened shortly after the diesels are started and assume load. The NRC resident inspector will verify that appropriate provisions are made.

DR-314: This item involves the potential or actual failure of electrohydraulic valve activators through leakage of hydraulic fluid into the electric motor. The valves serve to control the temperature of the cooling water to the condensers of the HVAC water chillers serving the main control room. The licensee has removed the valves from the system and returned them to the vendor for investigation. Manual valves have been installed that control the water temperature under stable operating conditions. Cooling water temperature may become unstable when it becomes necessary to obtain the cooling water utilizing the standby portion of the service water system, and then, only if the cooling water is below approximately 60°F. During the period in which the electrohydraulic control valves are not installed, both standard and emergency operating procedures should require monitoring of the cooling water inlet temperature to the chillers, on a daily basis, when operating with coolant furnished by the standby service water system.

DR318 This item involves a finding during testing that a family of dampers in the HVAC system experienced excessive leakage of air where control shaft bushings are installed through the frame of damper. The licensee and the vendor for the dampers have apparently developed a correction for the problem. An NRC inspector will examine the corrective measures and review proof testing in a future inspection. The licensee has committed to having the corrective measure completed on all dampers related to control room HVAC and on those dampers required to maintain adequate cooling to safety related equipment. The balance of the dampers will require correction prior to causing the reactor to go critical.

4. Exit Interviews

The NRC inspectors met with licensee senior representatives denoted in paragraph 1 on June 7 and 14, 1985, to discuss actions and findings resulting from this inspection.

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