

APPENDIX

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report No. 50-458/92-11

Operating License No. NPF-47

Licensee: Gulf States Utilities
P.O. Box 220
St. Francisville, Louisiana 70775

Facility Name: River Bend Station (RBS)

Inspection At: RBS, St. Francisville, Louisiana

Inspection conducted: April 13-16 and 20-24, 1992

Inspector: W. M. McNeill, Reactor Inspector, Materials and Quality Programs
Section, Division of Reactor Safety

Approved: J. Barnes 5-26-92
I. Barnes, Chief, Materials and Quality Programs Date
Section, Division of Reactor Safety

Inspection Summary

Inspection Conducted April 13-16 and 20-24, 1992 (Report 50-458/92-11)

Areas Inspected: Routine, announced inspection of 10 CFR Part 21, observation of inservice inspection (ISI) work activities, and action on previous inspection findings.

Results: Within the areas inspected, no violations or deviations were identified. The licensee was found to have good compliance with the requirements for posting and inclusion of 10 CFR Part 21 requirements in procurement documents. An unresolved item in regard to the timeliness in issuance of evaluation forms for a potentially reportable condition was noted (paragraph 3).

A review of ISI work activities found them to be well defined and effectively implemented. The inspector found excellent methodology used by the licensee for performing magnetic particle examination of the reactor vessel closure head nuts.

During the inspection, the following items were closed: Inspection Follow Up Items 458/89200-02 and 458/9033-02.

DETAILS

1. PERSONS CONTACTED

GSU

- *D. Andrews, Director, Quality Assurance
- K. Bankston, Quality Control Inspector
- *J. Blakely, Supervisor, ASME XI ISI
- H. Boyles, Nondestructive Examination (NDE) Level II Examiner
- *R. Backen, Supervisor, Quality Assurance Systems
- *R. Carlyle, Inservice Inspection Coordinator
- *F. Carver, Director, Employee Relations
- J. Cook, Technical Specialist, Nuclear Licensing
- L. England, Director, Nuclear Licensing
- B. Fichtenkort, Senior Mechanical Engineer
- *W. Fountain, Senior Quality Assurance Engineer
- A. Glass, Technical Specialist
- *P. Graham, Plant Manager
- *M. Harrington, Supervisor, Environmental Services Group
- W. Hawkins, NDE Level II Examiner
- R. Jackson, Senior Compliance Analyst
- R. Jackson, Technical Specialist
- B. Kienlen, Senior Quality Control Inspector
- *F. Lenox, Technical Specialist
- *D. Lorfing, Supervisor, Nuclear Licensing
- *I. Malik, Supervisor, Operations Quality Assurance
- R. Marin, NDE Level II Examiner
- *J. McQuirter, Licensing Engineer
- *C. Miller, Supervisor, Maintenance Support
- *W. Odell, Manager, Oversight
- *S. Purdhomme, Licensing, Student
- W. Ramsey, NDE Level II Examiner
- *C. Redding, Quality Assurance Engineer
- R. Redmond, Senior Quality Assurance Engineer
- *M. Reed, Environmental Analyst
- *F. Richter, Quality Assurance Engineer
- J. Smith, NDE Level II Examiner
- R. Smith, NDE Level II Examiner
- *J. Spivey, Senior Quality Assurance Engineer
- *C. Sprangers, Senior Quality Assurance Engineer
- *K. Suhrke, General Manager, Engineering and Administration
- *C. Wilson, Supervisor, Operations Quality Control

Ebasco Services, Inc.

- S. Crathers, NDE Level II Examiner
- D. Griebel, NDE Level I Examiner

K. Latiolais, NDE Level III Examiner

Rockwell International Corporation

C. Richards, Quality Assurance Site Representative

Hartford Steam Boiler Inspection and Insurance company

T. McGovern, Authorized Nuclear Inservice Inspector (ANII)

NRC

*E. Ford, Senior Resident Inspector

*D. Loveless, Resident Inspector

*L. Wilborn, Radiation Specialist

The inspector also interviewed other employees during the inspection.

*Denotes those persons that attended the exit meeting on April 24, 1992.

2. ACTION ON PREVIOUS INSPECTION FINDINGS (92701)

2.1 (Closed) Inspection Followup Item (458/89200-02): 10 CFR Part 21 was not specified in three purchase orders for safety-related items.

The licensee's review, documented in Engineering Evaluation and Assistance Request (EEAR) No. 39-0281, found that two of the purchase orders were for commercial grade procurements and did not require 10 CFR Part 21 to be referenced in the purchase orders. The other purchase order should have referenced 10 CFR Part 21 and Condition Report (CR) No. 89-1142 was generated to document the nonconforming condition. It was concluded in CR 89-1142 that the failure was considered to be an isolated incident. A review of 20 current purchase orders was performed by the inspector as part of the inspection activity addressed in paragraph 3, and no additional examples of this problem were identified.

2.2 (Closed) Inspection Followup Item (458/9033-02): The licensee was to conduct a review of the root cause analysis and establish actions to prevent recurrence of standby diesel generator weld failures as documented on CR 90-1194.

The root cause of this problem was determined to be the result of an undersize weld made by the manufacturer. The weld was found to have a root gap, which by procedure, should have resulted in a larger size weld. Other contributing factors were the rewelding of this and nearby welds which may have resulted in residual stresses, and vibration induced flexing of the inlet adapter. Calculations were made of the repaired configuration to ensure that the welds could sustain all the expected vibration induced forces.

During review of CR 90-1194, an unresolved item was noted by the inspector. A cracked weld on the combustion air pipe adapter of the Division II standby diesel generator was identified and documented on CR 90-1194 on November 28, 1990. On November 29, 1990, CR 90-1194 was dispositioned "Potential 10CFR21." Licensee procedures (i.e., RBNP-030, RBNP-026, and NLP-10-007) require that the licensing group initiate a potentially reportable condition (PRC) form upon receipt of notification of a PRC. Paragraph 6.2.2 in Procedure NLP-10-007, Revision 1, requires that efforts should be made to complete the evaluation for reportability within 30 calendar days of receipt of notification. PRC 92-001 and EEAR 92-0020 were not issued, however, until February 7, 1992, for engineering to complete the evaluation for reportability of this issue. On March 5, 1992, EEAR No. 92-R0020 and PRC 92-001 were completed, approved and returned to the licensing group. Review of the circumstances pertaining to the delay in initiation of a PRC form for the combustion air pipe adapter problem is considered an unresolved item (458/9211-01).

3. 10 CFR PART 21 (36100)

The objectives of this inspection were to provide assurance that holders of operating licenses for nuclear power reactors have established procedures and program activities to effectively implement the requirements of 10 CFR Part 21, "Reporting of Defects and Noncompliance."

The inspector verified that 10 CFR Part 21 was posted at several locations on site as required by 10 CFR Part 21 and that the licensee had established requirements in procedures (i.e., RBNP-003, QAD-4, and EDP-EQ-01) for specifying the applicability of 10 CFR Part 21 in procurement documents as required by 10 CFR Part 21.

A review of a sample of 20 current purchase orders for both safety-related and nonsafety-related parts confirmed that the applicability of 10 CFR Part 21 had been appropriately specified as required by 10 CFR Part 21. The licensee had procedurally established (i.e., RBNP-030, RBNP-026, and NLP-10-007) requirements for a review of deviations for reportability.

4. INSERVICE INSPECTION-OBSERVATION OF WORK AND WORK ACTIVITIES (73753)

The objectives of this area of the inspection were to ascertain whether performance of inservice inspection (ISI) examinations and repair or replacement of components is in accordance with regulatory and American Society of Mechanical Engineers (ASME) Code requirements. In addition, a review was conducted pertaining to correspondence between the NRC and the licensee concerning relief requests.

The inspector reviewed the current ISI Plan, ISI schedule, and implementing ISI procedures (see Attachment 1). RBS was currently undergoing an outage (the first outage in the second period of the first 10-year interval) and a total of 1036 ISI examinations had been scheduled. Of these, 678 were to be performed by licensee personnel and included liquid penetrant examinations

(PTs), magnetic particle examinations (MTs), and visual examinations (VTs). Another 237 were contracted to be performed by Ebasco Services, Incorporated, and included PTs, MTs, and manual ultrasonic examinations (UTs). Eighty-four examinations were contracted to be performed by Wyle Laboratories, namely VTs of snubbers. Twenty-three automated UTs of the reactor vessel welds were contracted to be performed by Rockwell International Corporation and 14 remote VTs were contracted to be performed by GE Company. In addition to the above ISI examinations, there were 88 pressure and hydrostatic tests (VI-2s) scheduled to be performed during this outage.

The inspector established a sample of components based on their importance to safety and availability during the inspection and verified that the ISI Plan and ISI schedule identified the sampled components, methods, and the UT calibration block to be used for the examinations. The UT calibration block was visually examined and the applicable inspection report of the calibration block was reviewed by the inspector. The inspector established that the block conformed to ASME Code requirements for configuration and materials.

The inspector examined the current ISI schedule and found that the frequency of testing for the sample of components complied with the ASME Code and ISI program requirements. The inspector established, by review of personnel certification records including the certifying Level III Examiner's records, that the contractor personnel designated to perform the examinations were qualified to industry standards (i.e., SNT-TC-1A). This review included verification of the experience, training, and test grades as well as the scope and period of qualification.

The inspector additionally noted that the certifications for the UT couplant material and MT materials (i.e., dry powder and fluorescent particle suspension) conformed to requirements specified by Section V of the ASME Code.

The inspector observed the performance of the examinations by both licensee and contractor personnel identified in Attachment 2, and verified that personnel complied with ASME Code and procedure requirements. It was observed that the UT equipment had the required calibrations (i.e., system, electrical, and screen height and amplitude control linearities) and that distance amplitude correction curves had been properly prepared and used. The inspector confirmed use of proper lighting levels and that weld surfaces had been correctly prepared and were at a suitable temperature for examination. The inspector additionally verified the use of the correct size, frequency, and angles of the search units, as well as the use of correct scanning techniques (i.e., directions, sensitivity, rate, overlap, and coverage). For MT, the inspector observed the lift test of the yoke used, the fluorescent suspension centrifuge testing of particle concentration, and the blacklight intensity verification. The observations of MT also included verification of the magnetic field directions and that proper ASME acceptance criteria were being used. The observations of the VI-2 tests included verification that calibrated pressure gauges of the proper range were used, as well as the proper test pressures, temperatures and holding times. The inspector verified the documentation of the examination results, evaluations, and limitations by

review of the applicable reports. The inspector noted that oversight of contractors' ISI activities was being performed by quality control personnel and that the licensee's quality assurance organization was performing surveillances on a sample of ISI activities. The ASME authorized nuclear inservice inspector was also observed to be witnessing ISI activities of contractor and licensee personnel.

There were no applicable relief requests for the welds identified in the inspectors sample nor based on the inspectors review were any relief requests required.

In regard to repair and replacement activities it was established that 18 repair and replacement activities were in process and had not progressed to the point of inspection. The scope of these activities was limited to relief valve replacement.

An arc strike was found by licensee personnel on Weld 1SLS*037B-FW002, which was documented as nonconforming (with a recommendation for removal) although it was satisfactory with respect to PT. The inspector observed that the PT procedure was in need of clarification in regard to the requirements for verification of test temperatures. The PT method had been qualified for a greater test temperature range than that prequalified by ASME Code (i.e., 40°F - 150°F versus 60°F - 125°F). As written, the procedure could be interpreted as requiring temperature verification under any conditions. After discussion with the licensee's NDE Level III, it was ascertained that the procedural intent was to require temperature verification by instruments only when temperature conditions were at the extremities of the qualified range. During observation of a VT-2 bubble test, the inspector noted that the VT-2 procedure did not delineate the material to be used (i.e., Leak Dec Formula 372E). The licensee agreed to revise the procedures in question. In that these observations did not appear to impact the quality of the examinations and tests, the inspector considered this to be a satisfactory resolution of the minor comments.

The inspector noted excellent methodology was used to perform MTs of reactor vessel nuts. The nuts were examined on a horizontal machine and the test parameters were qualified with a test sample containing known flaw conditions.

5. EXIT INTERVIEW

The inspection scope and findings were summarized in an exit meeting on April 24, 1992, with the personnel listed in paragraph 1 of this report. The licensee did not identify as proprietary any of the materials provided to, or reviewed by, the inspector during this inspection.

ATTACHMENT 1

Documents Reviewed

Technical Specifications, Amendment 63, dated January 23, 1992

River Bend Station Inservice Inspection Plan, Revision 5

Procedures

QCI-3.12, "Magnetic Particle Examination (MT) Dry Method," Revision 5

QCI-3.13, "Liquid Penetrant Examination (PT)," Revision 6

QCI-3.24, "Visual Examination VT-2," Revision 4

QCI-3.35, "Magnetic Particle Examination (MT) Fluorescent Method," Revision 3
with Change Notices 1 through 3

QCI-3.41, "Qualification of Contract Nondestructive Testing (NDE) Personnel
and Surveillance of NDE Activities," Revision 0

GS-UT-WB1-3, "Ultrasonic Examination of Class 1 and 2 Piping Welds Joining
Similar and Dissimilar Materials," Revision 3 and Addenda 1

UT-CP-2, "Procedure for Inspection System Performance Checks," Revision 1

QAP No. 1.3, "Quality Assurance Indoctrination and Qualification of QA
Personnel," Revision 10

ATTACHMENT 2

<u>Component or Weld No.</u>	<u>Method</u>	<u>Description</u>
1RHS*014B-SW031 of line 1RHS-010-014-2B	UT	Circumferential weld of pipe to elbow in the residual heat removal system
1CSL*004B-FW007 of line 1CSL-012-004-2	MT	Circumferential weld of pipe to flange in the low pressure core spray system
1SLS*037B-001A, 002, 005, and 006 of line 1SLS-150-037-1	PT	Circumferential pipe welds in the standby liquid control system
Lines 1MSI-002-024-2 and 1MSI-002-025-2	VT-2	Circumferential pipe welds in main steam isolation system
1B13*D001-NT-A	MT	Reactor vessel closure head nuts