



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II  
101 MARIETTA STREET, N.W.  
ATLANTA, GEORGIA 30323

Report No.: 50-395/84-31

Licensee: South Carolina Electric and Gas Company  
Columbia, SC 29218

Docket No.: 50-395

License No.: NPF-12

Facility Name: Summer

Inspection Conducted: October 29 - November 2, 1984

Inspector:

*J. J. Blake*  
for E. H. Girard

11/23/84  
Date Signed

Approved by:

*J. J. Blake*  
J. J. Blake, Section Chief  
Engineering Branch  
Division of Reactor Safety

11/23/84  
Date Signed

SUMMARY

Scope: This routine, unannounced inspection involved 36 inspector-hours on site in the areas of licensee action on previous enforcement matters, inservice testing of valves, inservice inspection, and IE Bulletin 79-13.

Results: Of the four areas inspected, no violations or deviations were identified in three areas; one apparent violation was found in one area (Procedures do not assure valve remote position indicator checks at the frequency required, paragraph 5.a.).

8502060194 850114  
PDR ADOCK 05000395  
Q PDR

## REPORT DETAILS

## 1. Persons Contacted

## Licensee Employees

- \*O. S. Bradham, Director, Nuclear Plant Operations
- \*B. G. Croley, Group Manager, Technical and Support Services
- \*K. W. Woodward, Manager, Operations
- \*G. G. Putt, Manager, Scheduling and Materials Management
- \*A. R. Koon, Associate Manager, Regulatory Compliance
- \*M. N. Browne, Manager, Technical Support
- \*M. D. Quinton, Manager, Maintenance Services
- \*P. Fant, Manager, Nuclear QC
  - A. P. Turbeville, Supervisor, Mechanical Maintenance
- \*G. Moffatt, Associate Manager, Project Engineering
  - L. B. Collier, Welding Supervisor
- \*B. C. Williams, Supervisor of Operations
- \*M. D. Irwin, Nuclear Licensing Specialist
- \*F. S. McKinnon, Associate Manager, Station Quality Control
  - R. Caban, NDE Examiner
  - J. W. Turkett, Engineer, Maintenance Engineering and Support
  - A. D. Torres, NDE Supervisor
  - T. J. Boyers, Quality Control Systems Coordinator
- \*R. M. Fowlkes, Regulatory Interface Engineer

## Other Organizations

- J. Hawkins, NDE Examiner, Nuclear Energy Services, Inc.
- B. Saulter, NDE Examiner, Nuclear Energy Services, Inc.
- D. Murdock, NDE Examiner, Nuclear Energy Services, Inc.
- C. D. Cowfer, NDE Level III Examiner, Nuclear Energy Services, Inc.
- J. Funanich, NDE Level III Examiner, Nuclear Energy Services, Inc.

## NRC Resident Inspector

- \*C. W. Hehl, Senior Resident Inspector

\*Attended exit interview

## 2. Exit Interview

The inspection scope and findings were summarized on November 2, 1984, with those persons indicated in paragraph 1 above. The licensee was informed of the inspection findings listed below. The licensee acknowledged the inspection findings.

Violation 395/84-31-01, Procedures do not assure valve remote position indicator checks at the frequency required, paragraph 5.a.

Inspector followup item 395/84-31-02, Stroke time limits, paragraph 5.b.

The Maintenance Services Manager offered some disagreement with the above violation, as described in paragraph 5. The inspector indicated that if the licensee could provide sufficient information in support of his position, the violation could be withdrawn. The Director of Nuclear Plant Operations offered no dissenting comments and indicated that they would assure that adequate procedural requirements were implemented to address the concern described in the violation.

Another apparent violation discussed in paragraph 6 below, was described to the licensee during the exit interview, but was subsequently deleted, based on additional information provided to the inspector in a telephone call from the licensee on November 5, 1984.

### 3. Licensee Action on Previous Enforcement Matters

#### a. (Open) Unresolved Item (395/84-21-01): Exercising Emergency Feedwater Discharge Check Valves to Closed Position

The item was opened to identify the inspector's concerns that the licensee did not appear to have procedural requirements which would verify closure of their Emergency Feedwater discharge check valves. Satisfactory closure of these valves is necessary to assure that there is adequate flow of cooling water to steam generators, when required, and that back flow of hot feedwater does not reach and disable emergency feedwater pumps. The latter situation has been experienced in several plants and is described in Inspection and Enforcement (I&E) Notice 84-06.

In their September 28, 1984 response to NRC Generic Letter 83-28, Section 2.2.2, the licensee stated that they track and review IE Notices for applicability to their facility, and that they document required actions resulting from the reviews. The inspector asked the licensee's Regulatory Interface Engineer what procedure governed the licensee's handling of IE Notices and what their response had been to IE Notice 84-06. The inspector was informed that the Notice and related INPO documents SOER 84-3 and SER 5-85 had been addressed in accordance with their procedure SAP-147. The action taken was to put the emergency feedwater valves in their preventive maintenance program and to require the following actions:

- (1) Disassemble and check the condition of one valve each refueling outage.
- (2) Monitor adjacent piping temperature once each shift for temperature increases, indicative of excessive leakage, (recorded in the Auxiliary Building Lower Operators Log).

The inspector informed the licensee that the stated actions would appear to satisfy his concerns, but that the item would remain open pending his review of implementing documents and resulting data in a subsequent inspection.

- b. (Closed) Unresolved Item (395/84-26-01): Welding Procedure Qualification Records for Spent Fuel Rack Adjustable Support Welds.

The licensee provided records and data verifying proper qualification of the welding procedures, for the spent fuel rack adjustable support welds. The inspector reviewed the records and data and considers the matter resolved.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Inservice Testing of Valves (92706B)

The inspector interviewed personnel and reviewed procedures and records for valve testing to verify their compliance with licensee commitments and NRC requirements - including the requirements of the applicable Code, ASME Section XI (77S78). The inspector principally directed his attention to tests required for three valves as described below.

During a tour of the control room, the inspector observed a record sheet for planned performance of stroke timing on chemical and volume control system valves XVT 8149A, B, and C. The stroke timing test was required, because of maintenance performed on the valves to replace unsatisfactory valve packing. The repacking was performed through maintenance work requests, (MWRs) 84M0639, 0642, and 0643. The inspector reviewed the following documents to verify that the Code and other regulatory requirements were met, relative to work, inspections, and tests for the above valve maintenance.

- MWRs 84M0639, 0642, and 0643 (completed)
- Stroke timing test data sheets for valves XVT 8149A, B, and C (post maintenance testing not completed)
- Maintenance Procedure (MMP-445.001, Rev. 3, Adjusting and Packing Valves)
- Drawing E302-673, Rev. 2
- Surveillance Test Procedure STP-105.002, Rev. 1, Chemical and Volume Control System Operability Test

In reviewing the above data, the inspector identified one violation and one inspector followup item as follows:

- a. Starting on October 29, 1984, the inspector questioned various licensee personnel, including the engineer responsible for the pump and valve test program, what procedures assured that Code requirement IWV-3300 was met. IWV-3300 states that:

"Valves with remote position indicators, which during plant operation are inaccessible for direct observation, shall be visually observed at least as frequently as scheduled refueling outages with at least one observation being made every two years to verify that remote valve indications accurately reflect valve operation."

Note: The intent of the above requirement was clarified by ASME Code, Interpretation XI-1-79-18, which states that its intent was to require that all valves, accessible, and inaccessible, that have remote indicators be visually checked at least once every two years to verify that remote valve indications accurately reflect valve operation.

The licensee did not provide the inspector with the implementing procedures that assured performance of the position indicator verifications. The Manager of Maintenance Services indicated his belief that all of the required verifications had been or would have been performed by the end of the current refueling outage (presumably through normal or preventive maintenance procedures), with the exception of a few valves for which a relief request would have to be submitted. Based on his discussions with cognizant licensee personnel, the inspector believes that most of the valves would have received the position indicator checks. However, the licensee's procedures did not appear to contain criteria which clearly assured performance of the checks at the specified frequency and the inspector identified this apparent procedural inadequacy as violation 395/84-31-01, Procedures Do Not Assure Valve Remote Position Indicator Checks at the Frequency Required.

- b. In reviewing the licensee's data sheet for stroke timing valves, XVT-8149A, B, and C, the inspector noted that the maximum acceptable stroke times specified for these valves by the licensee were 40 seconds. These are fast-acting air operated valves. Typically, such valves operate in under two seconds. The inspector informed the licensee that he believed that setting a 40 second maximum stroke time for such valves was almost meaningless and that he would attempt to provide them with formal NRC guidance on the matter. The inspector identified the matter as inspector followup item 395/84-31-02, Stroke Time Limits.

Within the areas inspected, one violation was identified, as described in paragraph 5.a. above.

## 6. Inservice Inspection

The inspector reviewed selected aspects of the licensee's procedures for inservice inspection and observed the performance of inservice inspection nondestructive examinations to verify compliance with licensee commitments and regulatory requirements, including the requirements of the applicable Code, ASME Section XI (77S78).

### a. Review of Procedures (73052B)

- (1) The following ISI procedures were reviewed for proper approval, personnel qualification requirements, and record compilation requirements:

<u>Title</u>	<u>Procedure No.</u>
Procedure for UT Examination of Piping Systems	83A0282
Liquid Penetrant Examination	83A0281
Magnetic Particle Examination - Wet and Dry Methods	83A0284
Steam Generator Tube Inspection	STP 404.901
Ultrasonic Examination of Vessel Welds in Ferritic Materials Greater Than Two Inches in Thickness	83A0288

- (2) The licensee's NDE Plan for the current outage, the above procedures and procedure 83A0283, PSI/ISI Examination - Areas and Volumes were reviewed to ascertain whether the following were properly specified:

- (a) Examination Category
- (b) Examination Method
- (c) Extent of Examination
- (d) Commitments and Requirements as Indicated by the FSAR and Technical Specifications

- (3) The inspector reviewed selected ISI procedures for technical content as described below:

#### Ultrasonic Examination Procedure

Ultrasonic examination procedure 83A0282 was reviewed for proper technical content relative to:

- (a) Apparatus
- (b) Extent of Coverage

- (c) Calibration Requirements
- (d) Search Unit Size and Frequency
- (e) Beam Angles
- (f) Distance Amplitude Correction
- (g) Reference Level for Monitoring Discontinuities
- (h) Scan for Laminar Reflectors
- (i) Levels for Evaluating and Recording Indications
- (j) Recording and Reporting

#### Eddy Current Procedure

Eddy current examination procedure STP-404.901 was reviewed for:

- (a) Equipment
- (b) Frequencies
- (c) Calibration
- (d) Reporting
- (e) Records Requirements

#### Magnetic Particle Examination Procedure

Magnetic particle examination procedure 83A0281 was reviewed for proper technical content relative to:

- (a) Method (Continuous)
- (b) Component Surface Temperature
- (c) Viewing Conditions
- (d) Overlap
- (e) Pole Spacing and Lifting Power for Yokes
- (f) Records Requirements

#### Liquid Penetrant Examination Procedure

Liquid penetrant examination procedure 83A0281 was reviewed for proper technical content relative to:

- (a) Method
- (b) Materials Specified
- (c) Controls on Sulfur and Halogens
- (d) Pre-examination Surface Preparation
- (e) Drying Time After Precleaning
- (f) Penetrant Application Method and Penetration Time
- (g) Surface Temperature
- (h) Penetrant Removal
- (i) Drying Prior to Developing
- (j) Developer Application
- (k) Examination Technique and Time
- (l) Evaluation
- (m) Records Requirement

## b. Observation of Work (73753B)

## (1) Qualifications and Certifications of Examiners

The inspector reviewed qualifications and certifications of one Level III examiner and several Level I and II examiners to verify that they properly reflect:

- (a) Employer's Name
- (b) Person Certified
- (c) Activity Qualified to Perform
- (d) Currently Qualified
- (e) Signature, Title, and Level of Certifying Individual
- (f) Certification Basis
- (g) Annual Visual Acuity and Color Vision Examination

## (2) Observation and Examination

The inspector observed the examinations and portions of examinations as described below:

Ultrasonic Examination of Safety Injection System Welds 1, 2, and 3 on Isometric CGE 1-4104

The inspector observed the examinations relative to:

- (a) Procedure Availability
- (b) Personnel Knowledge of Equipment and Examination Method
- (c) Qualification Level of Examining Personnel
- (d) Recording Data
- (e) Equipment Used
- (f) Coverage and Scanning Technique
- (g) Calibration (observed "unofficial" calibration performed in anticipation of examination on previous day)
- (h) Sizes and Frequencies of Search Units
- (i) Beam Angle
- (j) Distance - Amplitude Correction
- (k) Reference Level Used
- (l) Levels for Evaluating and Recording Reflectors
- (m) Recording Significant Reflectors

Eddy Current Examination of Steam Generator Tubes

The inspector observed a portion of the eddy current examination conducted on steam generator tubes. Examination was observed for "C" generator tubes starting with R2A, C23, and continuing to R5C23.

- (a) Procedure Availability
- (b) Personnel Knowledgeable of Equipment and Examination Method



- (c) Qualification Level of Examination Personnel
- (d) Recording Data
- (e) Proper Frequencies
- (f) Satisfactory Location and Identification of Tubes
- (g) Calibration
- (h) Coverage

Penetrant Examination of Safety Injection System Welds 1, 2, and 3 on Isometric CGE 1-4104

The inspector observed the examinations to verify:

- (a) Use of Approved Procedure and Materials
- (b) Use of Knowledgeable Examination Personnel
- (c) Identification of Examination Materials
- (d) Preexamination Surface Preparation
- (e) Drying After Cleaning
- (f) Penetrant Application
- (g) Examination Temperature
- (h) Penetrant Removal
- (i) Drying After Penetrant Removal
- (j) Developer Type, Time of Application, and Application Method
- (k) Examination Technique
- (l) Evaluation of Indications

Magnetic Particle Examination of Main Steam System Integral Support Weld WS-6 on Isometric CGE-2-2301 (South Side of Pipe Only)

The inspector observed the examination to verify the following consistent with the approved procedure (83A0284):

- (a) Continuous Method with Adequate Surface Preparation
- (b) Proper Contrast and Component Surface Temperature
- (c) Sufficient Coverage
- (d) Pole Spacing
- (e) Evaluation of Results

On the basis of his observation of the ultrasonic examination of the safety injection system piping welds referred to above, the inspector questioned the adequacy of the licensee's compliance with the examination procedure. The pipe at the weld was 6 inch Schedule 160 (about 0.7 inches thick). The examination procedure, 83A0282, Section 5.2.C, specifies the maximum search unit size for 0.5 to 2.0 inch thick pipe wall thickness as 0.50 inch. It further notes that "for pipe diameter 6 inches or less, a 0.25 inch search unit shall be used." The licensee used a 0.5 inch search unit for the examinations observed rather than the specified .25 inch search unit.

Originally, the inspector identified this as a violation. However, based on his discussions with the licensee's Level III Examiner and Manager of QC and with NRC Region II Specialists subsequent to the exit interview (on November 5, 1984), the inspector determined that use of the larger search unit was satisfactory and did not present sufficient safety significance to justify a violation. The Level III Examiner stated that the procedure would be changed to remove the requirement for use of the 0.25 inch transducer or 6 inch pipe. He stated that it had never been their intention to require the fuse of a 0.25 inch search unit on 6 inch pipe.

Within the areas examined, no violations or deviations were identified.

7. IE Bulletin 79-13 (92703B)

The inspector questioned the licensee's NDE Supervisor to determine the status of their radiographic examinations of steam generator feedwater nozzle-to-pipe and adjacent pipe-to-pipe welds in accordance with IE Bulletin 79-13. The inspector was informed that examinations were planned and one of six welds had been examined, nozzle-to-pipe weld FW-11 on Isometric SE-EF-11. Another examination (the pipe-to-pipe weld adjacent to FW-11) was completed near the end of the NRC inspection. The inspector reviewed the radiographs for weld FW-11 to verify their compliance with IE Bulletin 79-13. The inspector informed the licensee that the bulletin would remain open pending completion of their examinations, submittal of a report specified by the Bulletin and review of the results by Region II.