



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

Report Nos.: 50-424/85-60 and 50-425/85-40

Licensee: Georgia Power Company
 P. O. Box 4545
 Atlanta, GA 30302

Docket Nos.: 50-424 and 50-425

License Nos.: CPPR-108 and CPPR-109

Facility Name: Vogtle 1 and 2

Inspection Conducted: December 16 - 20, 1985

Inspector:

W. P. Klejorge

1/13/86

Date Signed

Approved by:

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

1/14/86

Date Signed

SUMMARY

Scope: This routine, unannounced inspection entailed 39 inspector-hours on site in the areas of housekeeping (54834B), material identification and control (42902B), material control (42940B), steel structures and supports, and safety-related heating ventilating and air conditioning (HVAC) systems (50100).

Results: One violation was identified - "Failure to Comply with Welding Requirements" - paragraph 6b(1).

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REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *M. H. Googe, Project Construction Engineer
- *E. D. Groover, Quality Assurance (QA) Manager (Construction)
- *C. W. Hayes, QA Manager
- *T. L. Weatherspoon, Assistant Manager Quality Control (QC)
- *N. Lankford, Civil QC Section Supervisor
- *D. L. Dalenberg, Senior Construction QC Inspector
- G. A. McCorley, Project Compliance Coordinator

Other licensee employees contacted included construction craftsmen, engineers, technicians, and office personnel.

Other Organization

Bechtel Power Company (BPC)

- *D. W. Strohman, Project QA Engineer

NRC Resident Inspectors

- H. H. Livermore, Senior Resident Construction
- J. F. Rogge, Senior Resident Operations
- *R. J. Schepens, Resident Inspector

- *Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on December 20, 1985, with those persons indicated in paragraph above. The inspector described the areas inspected and discussed in detail the inspection findings. No dissenting comments were received from the licensee.

(Open) Violation 424/85-60-01 and 425/85-40-01: "Failure to Comply with Welding Requirements" - paragraph 6b(1).

(Open) Unresolved Item 424/85-60-02 and 425/85-40-02: "Unposted Drawing Change Documents" - paragraph 7b.

The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspector during this inspection.

3. Licensee Action on Previous Enforcement Matters

This subject was not addressed in the inspection.

4. Unresolved Items

Unresolved items are matters about which more information is required to determine whether they are acceptable or may involve violations or deviations. New unresolved items identified during this inspection are discussed in paragraph 7.b.

5. Independent Inspection Effort (Units 1 and 2)

Housekeeping (54834B), Material Identification and Control (42902B) and Material Control (42940B)

The inspector conducted a general inspection of the power plant construction site to observe activities such as housekeeping, material identification and control; material control, and storage.

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

6. Steel Structures and Supports (Units 1 and 2)

The inspector observed welding and nonwelding work activities and reviewed records for steel structures and supports as described below to determine whether applicable code and procedure requirements were being met. The applicable code for containment fabrication welded by Chicago Bridge & Iron (CB&I) is the American Society of Mechanical Engineers Boiler and Pressure (ASME B and PV) Code Section III, 1974 edition with addenda through summer 1975, and Section VIII, 1974 edition with addenda through summer 1975. The applicable code for electrical and civil structures described herein welded by Cleveland is AWS D1.1-81 and Ingalls is AWS D1.1-75. The applicable code for HVAC supports described herein, welded by Pullman/Kenith - Fortsom Co. (P/K-F), is AWS D9.1-80 and AWS D1.1-77. The applicable code for pipe supports described herein, welded by Pullman Power Products (PPP), is ASME B & PV Code Section III NF 77W77.

a. Nonwelding Activities

- (1) Review of Quality Assurance Implementation Procedures (48051B)(48061B)

The inspector reviewed the below listed documents to determine whether appropriate and adequate procedures are included or referenced in the Quality Assurance (QA) manual to assure that the following specific activities are controlled and performed according to NRC requirements and Safety Analysis Report (SAR) commitments in the following areas: inspection quality control (QC) and work procedures identify items, including hold points, where witnessing or inspection is required; receiving inspection contain provisions for assuring that steel components are undamaged and are in conformance with purchase specifications, and

include any special requirements; marking or other identification is as specified; as-received cleanliness and protection requirements are met; reports of receiving inspections meet established procedures; inspection (QC) procedures which cover storage, protection, issue, identification and records of materials and components used for safety-related structures and supports, include requirements to verify that applicable requirements are met; and inspection (QC) procedures which cover installation of these structures and supports contain requirements to assure that, type, size, location tolerances of components such as flanges, bolt holes, anchors and mounting pads are as specified, nondestructive examinations and inspections meet requirements, and installation records meet established procedures.

Documents:

"Pullman Power Products Vogtle Project Quality Assurance Manual" - Revision 10/21/85.

"Nuclear Quality Assurance Manual" (CB&I) for Contract 33711/25 dated 10/1/85

"Vogtle Electric Generating Plant Quality Assurance Manual" Revision 8, Georgia Power Company (GPC)

GPC-GD-A-30, "Receipt, Receipt Inspection, Storage, and Handling," Revision 9.

GPC-MT-12, "Receipt Inspection and Storage/Issue of Pipe, Pipe Components and Weld Filler Material", Revision 8.

PPP-VII-2, "Material Control", Revision 7/10/85

NISCO-ES-4028-Vogtle 3, "Steam Generator Supports and Final Setting Procedure", Revision F

GPC-CD-T-16, "Structural Steel and Q Decking", Revision 8.

GPC Specification X4AZ06 "Major Component Field Handling, Installation and Setting", Revision 7.

(2) Observation of Work and Work Activities (48053B)(48063B)

The inspector observed work performance, partially completed work and/completed work on structures/supports as indicated below to determine whether applicable requirements, as well as work and inspection procedures, were being met in the following areas: receipt inspection and storage; installation/erection; testing and nondestructive examination (NDE); inspection; utilization of

qualified NDE and inspection personnel; calibration and use of proper test equipment.

Structures/Supports (Inside Containment)

Pressurizer Relief Tank Serial No. 2355.10 (Unit 1)
 Upper Lateral Support for Loop 2 Steam Generator (Unit 1)
 Vertical Columns for Loop 2 Steam Generator (Unit 1)
 Column Base plates Loop 2 Steam Generator (Unit 1)

Structures/Supports (Outside Containment)

Residual Heat Removal System Pump Support (Unit 1)
 No. 1-1205-P6-002
 Refueling Water Storage Tank (Unit 1)

(3) Review of Quality Records

(a) Containment (Steel Structures and Supports) (48055B)

- 1 The inspector reviewed pertinent quality and material records for the structures/supports indicated below to determine whether adequate records exist to confirm that quality requirements have been met in the following areas: material test reports/certification records; vendor manufacturing and inspection records/certifications (where applicable); receiving inspection reports (including nonconformance reports); and tests on structural steel (where applicable).

Supports/Structures

Pressurizer Relief Tank Serial No. 2355.10 (Unit 1)
 Upper Lateral Support for Loop 2 Steam Generator
 (Unit 1)
 Vertical Columns for Loop 2 Steam Generator (Unit 1)
 Column Base Plates for Loop 2 Steam Generator (Unit 1)

- 2 The inspector reviewed pertinent work and quality records for the structures/supports listed in paragraph 6a(3)(a)1 above to determine whether those records are in conformance with established procedures and whether the records reflect work accomplishment consistent with applicable requirements in the following areas: installation/erection and inspection (QC) records.

(b) Safety-Related Structures Outside of the Containment (48065)

The inspector reviewed pertinent work and inspection records for structure/support listed below to determine whether those records meet established procedures and whether those records

reflect work accomplishment consistent with NRC requirements and SAR commitments in the following areas: materials, installation/erection; inspection (QC) records, and nonconformance/deviation records.

Structure/Support

Residual Heat Removal System Pump Support (Unit 1)
No. 1-1205-P6-002
Refueling Water Storage Tank (Unit 1)

b. Welding Activities

(1) Welding

The below listed welds were examined in-process to determine work conducted in accordance with traveler; welder identification and location; welding procedure assignment; welding technique and sequence; materials identity; weld geometry; fit-up; temporary attachments; gas purging; preheat; electrical characteristics; shielding gas; welding equipment condition; interpass temperature; interpass cleaning; process control systems; identity of welders; qualification of inspection personnel; and weld history records.

(a) Inside Containment (55153B)

PPP

Hanger VI-1201-064-H009, Rev. 2
Support No. VB1 on drawing SKI-300 Sheet 6, Rev. 2
Hanger VI-1204-021-H015, Rev. 1

CB&I

Welding at eight locations on structure shown on
CB&I-E2, Rev. 1

(b) Outside Containment (55154B)

Cleveland

Tray Support TS-179-53 (AX-2D-11N 179, Rev. 3) Detail
8-66 No. 32, Rev. 12
Tray Support TS-183-13 (AX-2D-11-183) Detail 17-66
No. 32, Rev. 12

CB&I

Welding at three locations on the Condensate Storage
Tank (Unit 2)

Ingals

Stack Support Frame MOIG-S-416A, Rev. 0
 Trash Rack Screen Cage Structure MOIG-S-311A, Rev. 0
 Stack Platform MOIG-S-400A, Rev. 0

PPP

Hanger V2-1202-037-H030, Rev. 1
 Hanger V2-1202-147-H642, Rev. 0
 Hanger V2-1202-122-H020, Rev. 3

P/K-F

Duct Support 211B109-33
 Duct Support 211A115-95
 Duct Support 11A102-48

With regard to the inspection above, the inspector noted the following:

- The welder of record for support V2-122A-174-H642, Rev. 0, was assigned Welding Procedure Specification (WPS) 27-III/I-8-0B-12, Rev 4/14/83, had drawn welder filler material 3/32-inch diameter and had his welding machine set at 35 amps. Had the NRC inspector not questioned the welder regarding welding parameters, the welder would have completed the weld joint using 3/32-inch diameter welding filler material with 35 amps, contrary to the assigned WPS, 27-III/I-8-0B-12 which specifies a welding current range of 100-150 amps for use with 3/32-inch diameter filler material. The inspector discussed the above with the licensee who agreed that the welder deviated from the assigned welding procedure specification without proper authorization.
- Drawing MOIG-S400, Rev, at E7, for the connection of Pc.A to Pc.C, requires a complete penetration double bevel groove weld to be made where the end of a square tube steel section butts against the side of second square tube section of the same size. The welding symbol on the drawing is improper for two reasons. First, the joint is a flair bevel weld due to the radius on the tube steel section, not a double bevel groove weld, and second it is not possible to make a weld on the inside of the tube steel on the second bevel face. Ingals welders prepared and welded the joint with flair bevel joint preparation. The inspector discussed the above with Georgia Power Company (GPC) QC inspector responsible for the Ingals shop who indicated that the drawing was in error and that a flair bevel was "intended". The GPC QC inspector further stated that he had accepted many other weld joint fit-ups with the same deviation from drawing weld symbol

requirement because the flair bevel was "intended" by the designer. The GPC QC inspector stated that there was no documentation to support the "designer's intentions".

This NRC inspector discussed the above with the licensee, indicating that QC inspectors function is to inspect, accept or reject and document their findings based on actual documented requirements, and not to accept work that deviates from actual documented requirements based on undocumented information or knowledge.

The above indicates that the welder failed to follow the welding procedure specification. The designer provided a drawing with an inappropriate acceptance criteria (weld symbol), and the QC inspector accepted work that deviated from documented requirements. Failure to follow documented procedure and drawing requirements for activities affecting quality and failure to provide appropriate acceptance criteria for activities affecting quality is a violation of 10 CFR 50 Appendix B, Criteria V. This violation will be identified as 424/85-60-01 and 425/85-40-01: "Failure To Comply With Welding Requirements".

(2) Welder Qualification (55157B)

The inspector reviewed the licensee's program for qualification of welders and welding operators for compliance with QA procedures and ASME Code requirements. The applicable code for welder qualification is ASME B&PV Code Section IX as invoked by GPC Specification X2AG06 Rev. 4 and X4AXZ01, Section P.1.

The inspector observed the following inprocess performance qualification tests to determine whether the testing was consistent with the code and regulatory requirements. The inspector confirmed by positive identification that the person welding the test weldment was indeed the person being qualified.

CB&I - Welder WLS, WPS-E7018/33710, Rev. 1

(3) Weld Heat Treatment (55156B)

Weld Joint Preheating

- (a) The inspector reviewed the licensee's program to determine whether procedures properly specify acceptable preheating methods, provide requirements for monitoring and recording preheat temperature before, during, and if specified, after welding, and whether specified temperature control is utilized on in-process welds which are required to be maintained at pre-heat for extended time periods.

- (b) By direct observation and review of records, the inspector observed/reviewed the preheating activities for the weld joints listed in paragraph 6b(1) to determine whether preheat control procedures were being following during field welding activities.

Within the areas examined, no violations or deviations were identified except as noted in paragraph 6.b(1).

7. Safety-Related Heating, Ventilating, and Air Conditioning (HVAC) Systems (50100)

The inspector reviewed the licensee's HVAC program to determine whether the technical requirements detailed or referenced in the facility Safety Analysis Report associated with safety-related HVAC systems had been adequately addressed in the construction specifications, drawings, and work procedures. The applicable codes for the fabrication and installation of HVAC systems are:

AWS-D1.1-77
 AWS-D9.1-80
 AWS-D3.0-77
 ASME Section IX-80
 ANSI B31.1-77

Observation of Work and Work Activities

a. Personnel Interviews (Installation Practices)

The inspector interviewed six craftsmen engaged in the installation of seismic supports, and duct work, to confirm the following:

- Predefined and approved procedures are followed when it becomes necessary to relocate any seismic support or other safety-related equipment from its original location specified on drawings.
- Any preinstallation field repairs or adjustments to the HVAC equipment are performed in accordance with the manufacturer's instructions and specifications to ensure that proper materials, replacement parts, and supplies are used, performance requirements are met and are reviewed by engineering for acceptance.
- Personnel engaged in the installation and inspection of safety-related supports, ductwork, and other safety-related HVAC equipment have received adequate training to understand and perform work contained in relevant work and inspection procedures and instructions.

b. Installation Activities

The inspector witnessed portions of the installation activities indicated below to verify the following:

- The latest issue (revision) of applicable drawings or procedures is available to the installers and is being used.
- Modifications to supports are approved by appropriate personnel before implementation.

<u>Activity</u>	<u>Component</u>
Welding & Fitting	Duct Support 211B109-33
Welding & Fitting	Duct Support 211A115-95
Welding & Fitting	Duct Support 211A102-48

With regard to the inspection above, the inspector noted that P/K-F Drawing AX2D67W013 revision 6 on P/K-F 6700W Stick No. 2 was missing FCRB-2775F dated 12/6/85. Examination of the drawing indicated that the FCRB had never been attached. The above is contrary to P/K-F Procedures JP-6.1, Rev. 9c, "Document Control" paragraph 6.1.3D and JP-3.1 Revision 10a, "Design Control" paragraph 4.5, which require FCRBs to be distributed and posted to the applicable drawings immediately. At the time of this inspection, this FCRB was 13 days old. The inspector, could not determine during this inspection the extent of unposted drawing charges. Pending further NRC inspection in this area, this matter will be identified as unresolved item 424/85-60-02 and 425/85-40-02: "Unposted Drawing Change Documents".

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