



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

Report Nos.: 50-424/86-69 and 50-425/86-32

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: August 4-8, 1986

Inspector: B. R. Crowley
B. R. Crowley

8/28/86

Date Signed

Accompanying Personnel: J. Menning

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

9/29/86

Date Signed

SUMMARY

Scope: This routine, unannounced inspection was in the areas of reactor coolant pressure boundary piping (Unit 2), safety-related piping (Unit 2), structural welding (Unit 2), inspector followup items (Units 1 and 2), and 50.55e items (Units 1 and 2).

Results: No violations or deviations were identified.

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REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *R. H. Pinson, Vice President, Project Construction
- *M. H. Googe, Project Construction Manager
- *E. D. Groover, QA Site Manager, Construction
- *G. A. McCarley, Project Compliance Coordinator
- C. R. Brewer, Assistant QC Manager
- *H. W. Swain, Mechanical QC Section Supervisor
- R. Perry, Compliance

Other licensee employees contacted included construction craftsmen, engineers, QC personnel, security force members, and office personnel.

Other Organizations

- J. L. Leamon, Sr, Licensing Engineer, Southern Company Services (SCS)
- *J. E. Miller, QA Manager, Pullman Power Products (PPP)
- R. G. Davis, Assistant QA Manager, PPP
- W. A. Stiger, QA Supervisor, PPP

NRC Resident Inspectors

- *H. Livermore, Senior Resident Inspector
- *R. J. Schepens, Resident Inspector

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on August 8, 1986, with those persons indicated in paragraph 1 above. The inspector described the areas inspected and discussed in detail the inspection findings. No dissenting comments were received from the licensee. The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspectors during this inspection.

3. Licensee Action on Previous Enforcement Matters

(Closed) Violation 424/85-11-02, Failure to Follow Procedure for Field Welding Inspection. Georgia Power Company's (GPC) letter of response (X7BG10-C1) dated May 6, 1985, has been reviewed and determined to be acceptable. The inspector examined corrective actions as stated in the letter of response and discussed the corrective actions with responsible

licensee personnel. As part of the corrective action, GPC decided to conduct a special 30 day surveillance of PPP weld inspection activities. The inspector reviewed documentation of these activities identified as GPC correspondence QCP-112.

4. Unresolved Items

Unresolved items were not identified during the inspection.

5. Independent Inspection Effort

- a. Housekeeping (54834B), Material Identification and Control (42902B) and Material Control (42940B) (Unit 2)

The inspectors conducted a general inspection of the auxiliary and reactor buildings to observe activities such as housekeeping, material identification and control, and storage.

- b. Employee Concerns

The inspectors reviewed the licensee's files relative to an employee concern that reactor coolant piping could have been welded using stainless steel weld wire obtained from the Diametrics classroom rather than from a controlled weld material storage area. The concern was referred to the licensee by NRC for investigation (See GPC letter X7RG54 dated July 29, 1986). In addition to reviewing the files, the inspector discussed the concern with responsible licensee personnel.

The licensee concluded that the weld rod control program was adequate. In addition, if classroom material was inadvertently used, the material was purchased to the same requirements as rod room issued material.

Within the area examined no violations or deviations were identified.

6. Reactor Coolant Pressure Boundary Piping (Unit 2)

The inspector examined welding and nonwelding activities for reactor coolant pressure boundary piping to determine whether applicable code and procedure requirements were being met. The applicable code for reactor coolant pressure boundary piping is the ASME Boiler and Pressure Vessel Code, Section III, 1977 Edition with Addenda through W77.

- a. Observation of Welding Activities (55173B) (Unit 2)

The inspector observed in-process welding of the below listed welds at various stages of completion:

<u>ISO</u>	<u>Weld</u>	<u>Size</u>	<u>Status</u>
2K4-1204-042-01	042-W-07	6"X.719"	Completing repair
2K4-1201-049-02	049-W-02	12"X1.125"	Fitup in-process
2K4-1208-002-03	002-W-15	3".438"	Fitup in-process
2K4-1204-025-02	025-W-04	6"X.719"	Welding fill passes

The welding was observed to determine whether:

- (1) Work was being conducted in accordance with a document which coordinates and sequences operations, references procedure, establishes hold points, and provides for production and inspection approval.
- (2) Weld identification and location were as specified.
- (3) Procedures, drawings, and other instructions were at the work station and readily available.
- (4) Welding Procedure Specification (WPS) assignment was in accordance with applicable code requirements.
- (5) Welding technique and sequence were specified and adhered to.
- (6) Welding filler materials were of the specified type and traceable to certifications.
- (7) Weld joint geometry was in accordance with applicable procedure and was inspected.
- (8) Alignment of parts was as specified.
- (9) Preheat and interpass temperatures were in accordance with procedures.
- (10) Electrodes were used in positions and with electrical characteristics specified.
- (11) Shielding gas was in accordance with the welding procedure.
- (12) Welding equipment was in good condition.
- (13) Interpass cleaning was in accordance with applicable procedures.
- (14) Temporary attachments were removed in accordance with applicable procedures.
- (15) Welding and inspection personnel were qualified.
- (16) Weld history records were adequate.

(17) Gas purging, if specified, was used in accordance with applicable procedures.

(18) Process control system has provisions for repairs.

(19) Welders were qualified.

(20) Inspection personnel were qualified.

b. Welder Qualification (55177B) (Unit 2)

Qualification status records and initial qualification records were reviewed for the following welders who welded on the welds listed in paragraph a. above:

DW3
DT
R1

c. Welding Material Control (55172B) (Unit 2)

The inspector reviewed PPP's program for control of welding materials including procurement, receiving inspection, storage, and issue.

The following specific areas were examined:

- (1) Establishment of procedures for procurement receiving, storing, distributing and handling welding materials
- (2) Material identification
- (3) Control of weld material at work locations and at Unit 2 Weld Material Distribution Center (WMDC)
- (4) Welding material procurement and receiving records including vendor material test reports were reviewed for the following welding materials:

ER308L: 1/16" Ht. 26245
3/32" Ht. 05394
1/8" Ht. PC443
Insert Ht. 5242T308L
Insert Ht. 4894T308L

E308L: 3/32" Control No. HH011
1/8" Control No. HH016

E705-2: 1/16" Ht. 97401
3/32" Ht. 97401
1/8" Ht. F7164
Insert Ht. 42S0B131

E7018: 3/32" Control No. MM081
1/8" Control No. MM069

d. Special Welding Applications (55178B) (Unit 2)

The inspector examined repair activities relative to weld 042-W-07 on ISO-2K4-1204-042-01. The repair operations were compared with applicable code and procedure requirements in the areas of:

- Procedure qualification
- Repair Technique
- Base and filler materials
- Nondestructive examination (NDE)
- Records
- Welder Qualification (Welder R1)

e. Observation of Non-Welding Activities (49053B) (Unit 2)

The inspector observed the work activities listed below to determine whether requirements were being met in the following areas, as applicable:

- (1) Inspection and/or work procedures
- (2) Record keeping requirements
- (3) Construction/installation specification requirements
- (4) Issuance of specified materials
- (5) Utilization of qualified inspection and NDE personnel
- (6) Performance of prescribed NDE

Specified activities observed were:

- Fitup, protection, handling and grinding weld prep at weld 049-W-02 on ISO 2K4-1201-049-02
- Temporary storage of pipe spool 1201-036-S-04 in building
- Grinding weld prep at weld 025-W-01 on ISO 2K4-1204-025-02

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

7. Safety-Related Piping (Unit 2)

The inspectors examined welding and non-welding activities for safety-related piping to determine whether applicable code and procedure requirements were being met. The applicable code for safety-related piping is the ASME Boiler and Pressure Vessel Code, Section III, 1977 Edition with Addenda through W77.

a. Observation of Welding Activities (55183) (Unit 2)

The inspectors observed in-process welding of the below listed welds at various stages of completion:

<u>ISO</u>	<u>Weld</u>	<u>Size</u>	<u>Status</u>
2K4-1202-231-02	231-W-06	8"X.322"	Welding fill passes
2K4-1204-020-02	201-W-4AA	8"	Fitup in-process
2K3-1302-029-01	029-W-09	4"X.438"	Fitup complete
2K3-1202-406-01	406-W-08	4"X.437"	Welding fill passes
2K3-1202-145-01	145-W-113	2"X.154"	Final weld complete
2K3-1204-037-02	037-W-09B	4".337"	Final weld repair

The welding was observed to determine whether:

- (1) Work was being conducted in accordance with a document which coordinates and sequences operations, references procedure, establishes hold points, and provides for production and inspection approval.
- (2) Weld identification and location were as specified.
- (3) Procedures, drawings, and other instructions were at the work station and readily available.
- (4) WPS assignment was in accordance with applicable code requirements.
- (5) Welding technique and sequence were specified and adhered to.
- (6) Welding filler materials were of the specified type and traceable to certifications.
- (7) Weld joint geometry was in accordance with applicable procedure and was inspected.
- (8) Alignment of parts was as specified.
- (9) Preheat and interpass temperatures were in accordance with procedures.
- (10) Electrodes were used in positions and with electrical characteristics specified.
- (11) Shielding gas was in accordance with the welding procedure.
- (12) Welding equipment was in good condition.
- (13) Interpass cleaning was in accordance with applicable procedures.

- (14) Temporary attachments were removed in accordance with applicable procedures.
- (15) Welding and inspection personnel were qualified.
- (16) Weld history records were adequate.
- (17) Gas purging, if specified, was used in accordance with applicable procedures.
- (18) Process control system has provisions for repairs.
- (19) Welders were qualified.
- (20) Inspection personnel were qualified.

b. Welder Qualification (55187B) (Unit 2)

The inspectors reviewed the qualification status records and initial qualification records for the following welders who welded on the welds listed in paragraph a. above:

SF3
VC
NR1
CF4
GR

c. Welding Material Control (55182B) (55182B) (Unit 2)

The welding material control inspection documented in paragraph 6.c. for reactor coolant piping also applies to safety-related piping.

d. Special Welding Applications (55188B) (Unit 2)

The inspectors examined repair activities relative to weld 037-W-09B on ISO 2K3-1204-037-02. No welding was required. The weld was ground and re-radiographed.

e. Observation of Non-Welding Activities (49063B) (Unit 2)

The inspectors observed the work activities listed below to determine whether requirements were being met in the following areas, as applicable:

- (1) Inspection and/or work procedures
- (2) Record keeping requirements
- (3) Construction/installation specification requirements
- (4) Issuance of specified materials

(5) Utilization of qualified inspection and NDE personnel

(6) Performance of prescribed NDE

Specific activities observed were:

- Marking, identification, location and grinding prep - elbow, Item 5, on field change MFCRB 6382F at weld 201-W-04AA on ISO 2K4-1204-020-02

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

8. Liquid Penetrant Examination (57060) (Unit 2)

The inspectors examined the liquid penetrant (PT) examination activities described below to determine whether applicable code and regulatory requirements were being met. See paragraph 6. above for the applicable code.

The inspectors observed PT examination of a repair to weld 042-W-07 on ISO 2K4-1204-042-01 to verify that:

- a. Applicable instructions or travelers clearly specified the procedure to be used and that a copy of the procedure was available for the inspection
- b. Sequencing of examinations relative to other operations were specified and in accordance with applicable procedures
- c. Personnel performing the examinations were qualified
- d. Materials used for the examinations were certified and the certifications met applicable requirements
- e. Areas, locations, and extent of examinations were clearly defined
- f. The following attributes were as specified in the applicable procedure and consistent with applicable code:
 - Surface preparation/cleaning method, type, time, etc.
 - Penetrant type
 - Penetrant application method
 - Penetration time
 - Temperature of surfaces
 - Penetrant removal
 - Drying
 - Developer, application, type
 - Developing time
 - Evaluation technique

- Acceptance criteria
- Reporting of results

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

9. Structural Welding (55100) (Unit 2)

The inspectors examined the licensee's program for structural welding as indicated below to determine whether applicable code and regulatory requirements were being met. The applicable welding code is the AWS Structural Welding Code D1.1-75.

a. Welder Performance Qualification

The inspectors reviewed the qualification records and status records for the below listed welders relative to the field welds listed in paragraph b. below.

YK1
BD
SY4

b. Production Welding

The inspectors observed the below listed welds at the indicated status of completion:

<u>Dwg/Hanger</u>	<u>Weld</u>	<u>Status</u>
V2-1201-053-H006	Item h to a	Welding in-process
V2-1201-053-H005	Item c to a	Final weld
V2-1202-18-H017	Item 1 to 7	Final weld
AXD11G012	S260M	Welding in-process

The welding was observed to determine whether:

- Work was being conducted in accordance with a document which coordinates and sequences operations, references procedures, establishes hold points, and provides for production and inspection approval.
- Weld identification and location were as specified.
- Procedures, drawings, and other instructions were at the work station and readily available.
- WPS assignment was in accordance with applicable code requirements.

- Welding technique and sequence were the specified type and traceable to certifications.
- Welding filler materials were the specified type traceable and properly inspected
- Alignment of parts was as specified.
- Preheat and interpass temperatures were in accordance with procedures.
- Electrodes were used in positions and with electrical characteristics specified.
- Shielding gas, if specified, was in accordance with the welding procedure.
- Welding equipment was in good condition.
- Interpass cleaning was in accordance with applicable procedures.
- Temporary attachments were removed in accordance with applicable procedures.
- Gas purging, if specified, was in accordance with applicable procedures.
- Process control system had provisions for repairs.
- Welders were qualified.
- No peening performed on root and surface layers.
- Inspection personnel were qualified.

c. Welding Material Control

Receiving inspection and material certification documentation were reviewed for the following welding material being used for the welding observed (see paragraph 9.b):

3/32" E7018
Control No. MM082

1/8" E7018
Control No. MM069

3/32" E7018
Control No. MM081

Weld material issue activities were examined for the Unit 2 WMDC in the areas of:

- Storage of materials - identification, segregation and cleanliness
- Temperature control
- Issue control
- Handling of returns

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

10. Inspector Followup Items (IFI) (92701) (Units 1 and 2)

(Closed) IFI (424, 425/85-11-01): Clarification of Pipe Welding WPSs. This item was opened to followup on apparent discrepancies in three PPP WPSs. The inspectors reviewed the latest revision of WPS (w) 32-III/I-8-12 (dated March 25, 1985) and the latest revision of WPS 24-III/I-8-KI-12 (dated March 24, 1985), and determined that these discrepancies had been corrected.

11. Licensee Identified Items (10 CFR 50.55e and Part 21) (92700) (Units 1 and 2)

- a. (Closed) Item 424, 425/CDR 83-38, Pullman Power Products - Quality of Welds and Radiographs. On January 25, 1983, Georgia Power Company notified RII of a potential 50.55(e) item relative to discrepancies in weld radiographs of spool pieces supplied by PPP. The final Construction Deficiency Report was submitted on June 24, 1983, concluding that the item was not reportable. The inspectors held discussions with responsible licensee personnel and reviewed supporting documentation including an engineering evaluation report dated May 11, 1983. There are no further questions at this time.
- b. (Closed) Item 424, 425/CDR 83-52, Quality of Welds and Radiographs. On October 27, 1983, GPC notified RII of a potential 50.55(e) item relative to discrepancies in weld radiographs of spool pieces supplied by PPP. Interim reports were submitted on February 24, June 29, and October 1, 1984. The final Construction Deficiency Report was submitted on January 17, 1985. The report has been reviewed and determined to be acceptable. The inspectors held discussions with responsible licensee personnel and reviewed supporting documentation including close out of MDs 3318, 3468, 3565, 3490, 3491, and 5596 to verify that corrective actions have been completed.
- c. (Closed) Item 424, 425/CDR 84-57, Reactor Coolant Crossover Leg Elbow. On March 24, 1984, GPC notified RII of a potential 50.55(e) item relative to a linear indication detected on the reactor coolant system

elbow for steam generator number 3 and adjacent to weld 005-W-02. An interim report was submitted on April 18, 1984. The final Construction Deficiency Report was submitted on June 4, 1984, concluding that the item was not reportable. There are no further questions at this time.

- d. (Closed) Item 424/CDR 85-82, Nuclear Service Cooling Water Pumps. On July 18, 1985, GPC notified RII of a potential 50.55e item concerning the failure to maintain minimum clearances between the seismic bowl restraints and pump columns for the nuclear service cooling water pumps. The final report was submitted on August 15, 1985. The report has been reviewed and determined to be acceptable. The inspector reviewed completed DRs T-1-85-687 and T-1-85-712, completed MWO 1-85-2974, and PPP completed Field Process Sheets for pumps 1-1202-P4-004 and 1-1202-P4-003.
- e. (Closed) Item 424, 425/CDR 82-26, Pullman Power Products Pipe Spool Welds. On June 17, 1982, GPC notified RII of a potential 50.55e item concerning discrepant conditions on PPP shop welds. Interim reports were submitted on July 20 and September 20, 1982. The final report was submitted on November 11, 1982. The final report concluded that no reportable deficiency or substantial safety hazard had occurred. See item 424, 425/CDR 83-51 below for further discussion of this item.
- f. (Closed) Item 424, 425/CDR 83-51, Pullman Power Products Fabrication Shop Spool Pipe Welds. On October 21, 1983, GPC notified RII of a potential 50.55e item concerning visual weld discrepancies on pipe spools furnished by PPP. An interim report was submitted on November 11, 1983. The final report was submitted on March 9, 1984. The report has been reviewed and determined to be acceptable. The inspector reviewed the site documentation package including a sample of completed nonconformance reports (NCRs) and deviation reports (DRs). The review revealed the following:
 - This item is a continuation of item 424, 425/CDR 82-26. In the final report for CDR-26, GPC indicated that if additional problems were identified, evaluation and appropriate reporting would occur. As additional inspections occurred, GPC concluded that reportable conditions existed.
 - On June 25, 1982, because of visual discrepancies identified, Bechtel's surveillance program for the PPP shop was changed from level 3 (itinerant) to level 4 (resident). For a 3 month period beginning August 2, 1982, 100 percent visual inspection of welds was performed by Bechtel prior to shipment from the PPP shop. Based on the established program by Bechtel at the shop, the site, which had been inspecting 100%, went to a sampling inspection plan.
 - In August of 1982, based on problems identified, the decision was made to visually re-inspect all existing PPP shop pipe spools in the shop as well as spools already on site.
 - All discrepancies identified were repaired.