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

Report Nos.: 50-424/85-26 and 50-425/85-25

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: June 8 - July 19, 1985

Inspectors: W H Rankin 8/2/85
for W. F. Sanders, Senior Resident Inspector, Construction — Date Signed

W H Rankin 8/2/85
for J. F. Rogge, Senior Resident Inspector, Operations — Date Signed

Accompanying Personnel: R. J. Schepens, Resident Inspector, Construction

Approved By: M V Sinkule 8/2/85
M. V. Sinkule, Section Chief
Division of Reactor Projects — Date Signed

SUMMARY

Scope: This routine, unannounced inspection entailed 372 resident inspector-hours on site (75 hours were on backshifts) inspecting: quality assurance; containment dome reinforcing steel and tendon sheathing; VSL platform installation; reactor coolant system primary loop piping installation and welding; safety-related piping installation and welding; reactor vessel, upper and lower internals, integrated head package and safety-related equipment storage and protection; IE Information Notices; and IE Bulletins. The inspectors also attended the ACRS subcommittee meeting on July 18 and 19, 1985.

Results: No violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

D. O. Foster, Vice President and Project General Manager
P. D. Rice, Vice President and General Manager, Q.A.
W. T. Nickerson, Deputy Project General Manager
W. C. Ramsey, Readiness Review Manager
H. H. Gregory III, General Manager Nuclear Construction
M. H. Googe, Project Construction Manager
G. Bockhold, Jr., General Manager Nuclear Operations
O. Batum, General Manager Engineering and Licensing
C. W. Hayes, Vogtle Quality Assurance Manager
C. E. Belflower, Quality Assurance Site Manager - Construction
*E. D. Groover, Quality Assurance Site Manager - Construction
S. D. Haltom, Quality Assurance Engineering Support Supervisor
W. E. Mundy, Quality Assurance Audit Supervisor
J. E. Sanders, Project Construction Manager - Unit 1
D. M. Fiquett, Project Construction Manager - Unit 2
B. C. Harbin, Manager Quality Control
J. L. Blocker, Assistant Quality Control Manager
T. L. Weatherspoon, Assistant Quality Control Manager
*G. A. McCarley, Project Compliance Coordinator
*W. C. Gabbard, Assistant Project Compliance Coordinator
J. O. Dorough, Administrative Manager
S. J. Piedra, QA Engineer

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

Other Organizations

F. B. Marsh, Project Engineering Manager - Bechtel
M. Malcom, Deputy Project Engineering Manager - Bechtel
D. L. Kinnsch, Project Field Engineering - Bechtel
D. W. Stroham, Project Quality Assurance Engineer - Bechtel
R. J. George, Mechanical Discipline Manager - Bechtel
G. H. Fredy, Project Field Engineer/APE - Bechtel
G. Introcaso, Administration Manager - Pullman Power
*J. Mamon, Project Field Engineering, Q.E. - Bechtel
D. R. Murphy, Construction Engineer - Oglethorpe Power Corporation

*Attended Exit Interview

2. Exit Interview (30703C)

The inspection scope and findings were summarized on July 17, 1985, with those persons indicated in paragraph 1 above. The inspector described the

areas inspected and discussed in detail the inspection findings listed below. No dissenting comments were received from the licensee.

(Open) Inspector Followup Item 50-424/85-26-01 & 50-425/85-25-01 "Boron Injection Tank Description and Operation" - Paragraph 5.

(Open) Inspector Followup Item 50-424/85-26-02 & 50-425/85-25-02 "Review Licensee Action on Information Notice No's. 85-15, 85-19, and 85-25" - Paragraph 19.

(Closed) IEB No. 83-05: "ASME Nuclear Code Pumps and Spare Parts Manufactured by the Hayward Tyler Pump Company", Units 1 and 2 - Paragraph 18.

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 (92702)

Not inspected.

4. Unresolved Items (92701)

Unresolved items are matters about which more information is required to determine whether they are acceptable or may involve violations or deviations. Unresolved items were not identified during this inspection. inspection.

5. Construction Inspection - Units 1 & 2 (92706C)

Periodic inspections were made throughout this reporting period in the form of general type inspections in different areas of both facilities. The areas were selected on the basis of the scheduled activities and were varied to provide wide coverage. Observations were made of activities in progress to note defective items or items of noncompliance with the required codes and regulatory requirements. On these inspections, particular note was made of the presence of quality control inspectors, supervisors, and quality control evidence in the form of available process sheets, drawings, material identification, material protection, performance of tests, and housekeeping.

Interviews were made with craft personnel, supervisors, coordinators, quality control inspectors, and others as they were available in the work areas.

The inspectors reviewed the following drawings/documents to determine if system operation, construction and description meet regulatory design criteria:

- FSAR Section 6.3.2.2.2, Boron Injection Tank Description

- FSAR Table 6.3.2-3, Motor Operated Isolation Valves in the Emergency Core Cooling System

- FSAR Figure 6.3.2-1, Safety Injection System P&ID Drawing No. 1AX4DB119, Rev. 5

- Bechtel Drawing No. 1X4DB119, Rev. 11, Safety Injection System P&ID

- Draft Technical Specifications

During this review, it was noted that the FSAR description and figures did not reflect the current construction design. Discussion with the licensee representatives indicated that the design changes were being reviewed for FSAR update. The following items summarize the major system differences:

- Heat tracing has been eliminated due to lower boron concentration.

- The Boron Recirculation System will be isolated from the Boron Injection Tank (BIT)

- Inlet valves to the BIT will be opened and de-energized thus maintaining the BIT at full discharge pressure of the charging pumps.

The inspectors indicated that additional review will be necessary pending the licensee's final determination on how the system will be operated. This item is identified as an Inspector Followup Item 50-424/85-26-01 and 50-425/85-26-01 "Review Boron Injection Tank Description and Operation".

No violations or deviations were identified.

6. Containment (Structural Concrete) - Unit 2 (47053C)

a. Procedure and Document Review

The inspector reviewed and examined implementation portions of the following procedures pertaining to the placement of concrete to determine whether they comply with applicable codes, standards, NRC Regulatory Guides and licensee commitments.

- CD-T-02, Rev. 14 Concrete Quality Control
- CD-T-07, Rev. 7 Embed Installation and Inspection
- CD-T-06, Rev. 9 Rebar and Cadweld Quality Control
- CD-T-20, Rev. 6 Installation and Inspection of Trumpets Rigid Extensions, and Duct Sheathing
- 2X2-D01A002, Rev. 11

b. Installation Activities

The inspector witnessed portions of concrete placement indicated below to verify the following:

(1) Forms, Embedment, and Reinforcing Steel Installation

- Forms were properly placed, secure, leak tight and clean.

- Rebar and other embedment installation was installed in accordance with construction specifications and drawings, secured, free of concrete and excessive rust, specified distance from forms, proper on-site rebar bending (where applicable) and clearances consistent with aggregate size.

(2) Delivery, Placement and Curing

- Preplacement inspection was completed and approved prior to placement utilizing a Pour Card (Exhibit CD-T-02*18).

- Construction joints were prepared as specified.

- Proper mix was specified and delivered.

- Temperature control of the mix, mating surfaces, and ambient were monitored.

- Testing at placement location was properly performed in accordance with the acceptance criteria and recorded on a Concrete Placement Pour Log (Exhibit CD-T-02*20).

- Adequate crew, equipment and techniques were utilized.

- Inspections during the placement were conducted by qualified personnel.

- Curing temperature was monitored.

(3) Installation of Trumpets, Tendon Sheaths and Anchorage Components
Trumpets, sheaths and anchorage components were oriented properly, installed within specified tolerances, clear and free of damage.

(4) Observed the Pulling of a Rabbit Through Horizontal Tendon No's. 153 and 154 Prior to Placement of Pour No. 2-010-038

(5) Observed the Pulling of a Rabbit Through Horizontal Tendon No's. 2, 3, 4, 5, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, & 147 after placement of Pour No. 2-010-038.

Pour	Location
2-010-038	Containment 2 Dome El 349' 6-1/2" to 356' 5-5/8" 2X2-D01A002, Rev. 11

No violations or deviations were identified.

7. Containment (Steel Structures and Supports) - Units 1 & 2 (48053C)

Periodic inspections were conducted to observe containment steel and support installation activities in progress, to verify the following:

- Components were being properly handled (included bending or straightening).
- Specified clearances were being maintained.
- Edge finishes and hole sizes were within tolerances.
- Control, marking, protection and segregation were maintained during storage.
- Fit-up/alignment meets the tolerances in the specifications and drawings.

No violations or deviations were identified.

8. Safety-Related Structures (Structural Steel and Supports) - Units 1 & 2 (48063C)

Periodic inspections were conducted to observe construction activities of safety-related structures/equipment supports for major equipment outside the containment to verify that:

- Materials and components were being properly handled to prevent damage.
- Fit-up/alignment were within tolerances in specifications and drawing requirements.
- Specified clearances from adjacent components were being met.

No violations or deviations were identified.

9. Fire Prevention/Protection - Units 1 & 2 (42051C)

The inspector observed fire prevention/protection measures throughout the inspection period. Proper housekeeping measures to limit the amount of combustible materials and proper storage requirements are being maintained. Welders are using a welding permit with a fire watch and extinguisher. Post indicator valves are being maintained in the open position. Fire fighting equipment is in its designated areas throughout the plant.

No violations or deviations were identified.

10. Reactor Vessel Protection - Unit 2 (50053C)

The inspection consisted of examination of the Unit 2 Reactor Vessel installed in containment to determine that proper storage protection practices were in place and that entry of foreign objects and debris was prevented. The inspector noted that protective covers were installed on the bottom mounted instrumentation penetrations.

No violations or deviations were identified.

11. Reactor Vessel Integrated Head Package - Unit 1 (50053C)

The inspection consisted of examination of the Unit 1 integrated head package stored on the refueling floor in its designated laydown area to determine that proper storage protection practices were in place, entry of foreign objects and debris was prevented, and that access was controlled.

No violations or deviations were identified.

12. Reactor Vessel Internals - Unit 1 (50063C)

Periodic inspections were conducted during the inspection period when the upper and lower internals were stored in the cavity in their designated storage area to determine that proper storage protection practices were in place, entry of foreign objects and debris was prevented and that access was controlled.

No violations or deviations were identified.

13. Safety Related Components - Units 1 & 2 (50073C)

The inspection consisted of plant tours to observe protection of installed components to determine that adequate protection from dirt, dust, debris, water, or adjacent construction activities were in place. Unit 1 equipment examined included:

- Residual Heat Removal (RHR) Pumps
- Diesel Generators
- Boric Acid Storage Tank
- Containment Spray (CS) Pumps
- Containment Penetration Encapsulation Vessel for Train A&B RHR and CS
- Auxiliary Feed Pumps
- Pressurizer
- Main Coolant Pump Casings
- Steam Generators
- Safety Injection Pumps
- Auxiliary Component Cooling Water (ACCW) Heat Exchangers
- Component Cooling Water Heat Exchangers

- ACCW Pumps
- Reactor Makeup Pumps
- Boron Injection Tank
- Cable Spreading Room Train A and B
- Integrated Reactor Pressure Vessel Head
- 4160V Train A and B Switchgear (1AA02 and 1BA03)
- 13.8KV Reactor Coolant Pump Switchgear
- Reactor Vessel Lower Internals
- Reactor Vessel Upper Internals

Unit 2 Equipment Examined Included:

- Residual Heat Removal (RHR) Pumps
- Containment Spray (CS) Pumps
- Containment Penetration Encapsulation Vessel for Train A&B RHR and CS
- Pressurizer
- Steam Generators
- Safety Injection Pumps
- Reactor Vessel

No violations or deviations were identified.

14. Electrical (Components and Systems) - Units 1 & 2 (51053C)

Periodic inspections were conducted during the inspection period to observe safety-related electrical equipment to verify that the installation and storage were accomplished in accordance with applicable requirements. The following areas were examined at during the inspections:

- Location and alignment
- Type and size of anchor bolts
- Identification
- Segregation and identification of nonconforming items
- Equipment space heating
- Rotation of motor shafts
- Lubrication and fluid levels
- Protective coatings, preservations, dessicants, inert gas blanket, etc.

No violations or deviations were identified.

15. Electrical (Cables and Terminations) - Unit 1 (51063C)

Periodic inspections were conducted during the inspection period to determine whether the raceway installation and protection of installed cable is in accordance with applicable codes, standards, and NRC Regulatory Guides.

In reference to the raceway installation, the following areas were inspected to verify compliance with the applicable requirements:

- Identification
- Alignment
- Bushings (Conduit)
- Grounding
- Supports and Anchorages

In reference to the installed cable, the following areas were inspected to verify compliance with the applicable requirements:

- Protection from adjacent construction activities (welding, etc.)
- Coiled cable ends properly secured
- Unterminated cable ends taped
- Cable trays, junction boxes, etc., reasonably free of debris
- Conduit capped, if no cable installed
- Cable supported

No violations or deviations were identified.

16. Reactor Coolant Pressure Boundary (Welding) - Unit 2 (55073C)

Periodic inspections were conducted on Reactor Coolant System Primary Loop pipe welds at various stages of weld completion. The purpose of the inspection was to determine whether the requirements of applicable specifications, codes, standards, work performance procedures and (QC) procedures were being met as follows:

- Work was conducted in accordance with a process sheet which identifies the weld and its location by system, references procedures or instructions, and provides for production and QC signoffs.

- Welding procedures, detailed drawings and instructions, were readily available and technically adequate for the welds being made.

- Welding procedure specification (WPS) were in accordance with the applicable ASME Code requirements and that a Procedure Qualification Record (PQR) is referenced and exists for the type of weld being made.

- That the base metals, welding filler materials, fluxes, gases, and insert materials were of the specified type and grade, have been properly inspected, tested and were traceable to test reports or certifications.

- That the purge and/or shielding gas flow and composition were as specified in the welding procedure specification and that protection was provided to shield the welding operation from adverse environmental conditions.

- That the weld joint geometry including pipe wall thickness was specified and that surfaces to be welded have been prepared, cleaned and inspected in accordance with applicable procedures or instructions.

- That the pipe to be welded to the component was assembled and held in place within specified gap and alignment tolerances allowed by the ASME Code.

- That a sufficient number of adequately qualified QA and QC inspection personnel were present at the work site, commensurate with the work in progress.

- That disbursement of welding materials was controlled in accordance with approved procedures.

No violations or deviations were identified.

17. Safety Related Piping (Welding) - Unit 1 (55083C)

Periodic inspections were conducted on safety-related pipe welding at various stages of weld completion. The purpose of the inspection was to determine whether the requirements of applicable specifications, codes, standards, work performance procedures and QC procedures are being met as follows:

- that pipe alignment and fit-up tolerances were within specified units.

- That weld filler material being used was in accordance with welding specifications, that unused filler material was separated from other types of material and was stored in heated cans, and stubs properly removed from the work location.

- That there were no evident signs of cracks, excessive heat input, sugaring, or excessive crown.

Installation Activities

During the inspection period, welds at various stages were observed in the following systems:

- Residual Heat Removal System
- Component Cooling Water System
- Chemical & Volume Control System
- Nuclear Service Cooling Water System

No violations or deviations were identified.

18. IE Bulletin, Confirmatory Action Letter, and General Letter Followup (92703B)

(Closed) IEB No. 83-05: "ASME Nuclear Code Pumps and Spare Parts Manufactured by the Hayward-Tyler Pump Company, Units 1 and 2.

The licensee was not required to respond to this bulletin since there are no safety related ASME code pumps or spare parts manufactured by Hayward Tyler Pump Company being used in plant Vogtle. A review was conducted of Bechtel Power Corporation Letter Log No. BG21186, File No. X7BC24, Dated 8/4/83 and Bechtel Power Corporation Letter Log No. BG30220, File No. X7BC24, dated 8/30/83 which referenced Westinghouse Electric Corporation Letter S.O. No. GAE - 205/4704, Ref: BW - 4055, dated 8/16/83 which confirmed to the licensee that neither Bechtel nor Westinghouse specified the use of Hayward Tyler Pump Company pumps or spare parts in any safety related application at plant Vogtle.

19. IE Bulletins Sent for Information and IE Information Notice Followup (92717)

An inspection was conducted to determine whether the following procedural actions were taken by the licensee or construction permit holder for IE Information Notices:

a. The Information Notices are received by management.

b. A review for applicability is being performed.

c. The Information Notices are distributed to the appropriate personnel at the corporate and site levels.

d. For Information Notices applicable to the facility, appropriate corrective actions have been taken or are scheduled to be taken.

A review of the licensee action on the following IE Notices was conducted:

IE Information Notice No.	Description	Status
85-25	Consideration of thermal conditions in the design and installation of supports for Diesel Generator Silencers.	Open-awaiting engineer response.
85-19	Alleged falsification of certifications and alteration of markings on piping, valves, and fittings.	Open-awaiting procurement response
85-15	Nonconforming structural steel for safety-related use.	Open-awaiting procurement.

In order to follow up the licensee's corrective actions and schedules the following IFI was identified: 50-424/85-26-02 and 50-425/85-25-02 "Review Licensee Action on Information Notice No's. 85-15, 85-19, and 85-25".

20. Participation in ACRS Meeting - Units 1 & 2 (94700)

On July 18 and 19, 1985, the ACRS subcommittee held a meeting in Augusta, GA pursuant to the operating license review. Regional representation at this meeting was performed by W. F. Sanders, J. F. Rogge and M. V. Sinkule.