



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II  
101 MARIETTA STREET, N.W.  
ATLANTA, GEORGIA 30303

Report Nos.: 50-424/84-04 and 50-425/84-04

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 at Vogtle site near Waynesboro, Georgia

Inspector: J. P. Blake  
for W. C. Liu

3/6/84  
Date Signed

Approved by: J. P. Blake  
J. P. Blake, Section Chief  
Engineering Program Branch  
Division of Engineering and Operational Programs

3/8/84  
Date Signed

SUMMARY

Inspection on February 21-24, 1984

Areas Inspected

This routine, unannounced inspection involved 27 inspector-hours on site in the areas of licensee action on previous enforcement matters, inspector followup items, base plate and concrete expansion anchor reinspections, and deviation report on concrete expansion anchor inspection reports.

Results

Of the four areas inspected, no violations or deviations were identified in three areas; one apparent violation was found in one area (Criteria V-Failure to follow procedures for concrete expansion anchor inspection, paragraph 6.b).

## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

- \*W. Nickerson, Deputy General Manager
- \*R. McManus, Manager Quality Control
- \*M. Googe, Assistant Project Construction Manager
- \*E. Groover, QA Site Manager
- \*T. Weatherspoon, Assistant Manager, QC
- \*G. McCarley, Project Compliance Coordinator
- \*L. Brooks, Project Section Supervisor - Civil Engineering
- \*I. Innes, Assist Project Section Supervisor - Civil Engineering

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

#### Other Organizations

- \*D. Kinnsch, Project Engineer - Field, BPC
- \*G. Fredy, Assistant project Engineer - Field, BPC
- \*R. Malin, Civil/Structural Engineering Group Supervisor, BPC

#### NRC Resident Inspector

- \*W. Sanders, Senior Resident Inspector - Construction

\*Attended exit interview

### 2. Exit Interview

The inspection scope and findings were summarized on February 24, 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 with no dissenting comments.

(Open) Violation 424/84-04-01, Failure to follow procedure for concrete Expansion Anchor inspection, paragraph 6.b.

(Open) Unresolved Item 424/84-04-02, Improper identification of Bolt spacing for Concrete Expansion Anchor inspection and Training Requirements, paragraph 6.c.

### 3. Licensee Action on Previous Enforcement Matters

(Closed) Violation 424/83-21-01, Inadequate Design Control for Hanger VI-1204-199-H008, Rev. 1. Georgia Power's letter of response dated January 16, 1984, has been reviewed and determined to be acceptable by Region II. The inspector held discussions with the responsible personnel

and examined the corrective actions as stated in the letter of response. The inspector concluded that the licensee had determined the full extent of the subject violation, performed the necessary survey and followup actions to correct the present conditions and developed the necessary corrective actions to preclude recurrence of similar circumstances. The corrective actions identified in the letter of response have been implemented.

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. One new unresolved item identified during this inspection is discussed in paragraph 6.c.

5. Inspector Followup Items

(Closed) Inspector Followup Item 424,425/83-11-05, Use of Concrete Expansion Anchors. This item concerned the improper use of concrete expansion anchors on handrails in the fuel handling building. The improper uses of concrete expansion anchors were identified in licensee QA audit findings AFR 288 and deviation report numbers CD-3710, 3711, 3712, 3713, and 3741. A review of these reports indicates that a number of items were recorded incorrectly in terms of identification of bolt spacing and plate edge distance. One new unresolved item is generated resulting from this inspection.

6. Independent Inspection Effort (92706)

The inspector held discussions with the responsible personnel in the area of safety-related pipe support base plate designs using concrete expansion anchor bolts. It was noted that the number of safety-related pipe supports installed to date using concrete expansion anchor bolts is less than 1%. The number of concrete expansion anchor bolts used in the pipe support installations is estimated to be less than 5%. The inspector held discussions with the civil engineering personnel in the area of base plate and concrete expansion anchor bolt installation. Currently they have completed approximately 200 base plates with concrete expansion anchor bolt installations.

a. Review of Documents and Procedures

The inspector reviewed portions of the following documents and procedures pertaining to safety-related base plate and concrete anchor installations to determine whether appropriate procedures have been established and whether they comply with NRC requirements and the licensee commitments.

- GD-T-27, Installation of Concrete Expansion Anchors, Rev. 0.

- IX-1, Installation and Inspection of Concrete Anchors, Pullman Power Products, April 13, 1983

- Specification No. X2AP01 - C9.7, Furnishing, Installation and Testing of Concrete Anchors, Rev. 7.
- DC-1000-C, General Design Criteria (Civil Structural), Rev. 3.

b. Observation of Work and Work Activities

The inspector selected the following safety-related base plates and concrete expansion anchor bolts that had been QC inspected and accepted for a reinspection in order to determine the effectiveness of the licensee's inspection program.

<u>Base plate Mark No.</u>	<u>Anchor Bolt Quantity and Size</u>	<u>Results from Reinspection</u>
CAP 342	(4) ½" diameter	Acceptable
CAP 384	(4) 1" diameter	1 Bolt undertorqued
CAP 400	(4) 1" diameter	1 Bolt undertorqued

The above concrete expansion anchors were inspected against their detail drawings for configuration, identification, location, minimum spacing and edge distance. In general, the concrete anchors were installed in accordance with documented procedures with the exception of the following discrepancies:

- (1) Wedge anchors for base plate CAP 384 were tested. It was noted that the bolt on the upper right side was undertorqued. The nut on the anchor was rotated about 1½ turns during torque testing prior to reaching the specified minimum torque of 250 ft-lb.
- (2) Wedge anchor for base plate CAP 400 were examined. It was found that the bolt on the lower left side was undertorqued. The nut on the anchor was rotated about 1/3 turn during torque testing prior to reaching the specified torque of 270 ft-lb.

Results from the above reinspections indicate that portions of the concrete expansion anchors were not installed by the craftsmen in accordance with the specified procedures. Furthermore, procedure GD-T-27, installation of Concrete Expansion Anchors, paragraph 7.6.1 states that QC inspectors are required to use a calibrated torque wrench to verify that actual torque is in the range of specified value as shown in exhibit 01. The failure of QC inspectors to verify the required torque values for the two installed wedge anchors during the previous inspections is a violation of 10 CFR 50, Appendix B, Criterion V, and is identified as Violation 424/84-04-01, Failure to Follow Procedure for Concrete Expansion Anchor Inspection



## c. Review of Deviation Reports

The inspector held discussions with the licensee's responsible engineering personnel and Bechtel's civil engineering personnel in the area of concrete expansion anchor bolt design installation pertaining to civil/ structural supports. The inspector reviewed portions of the following safety-related deviation reports to determine whether they comply with NRC requirements and the licensee commitments.

<u>Deviation Report No.</u>	<u>Concrete Anchor Location</u>	<u>Specification Used</u>
CD 3710	Auxiliary Building	X2APOL, C9.7
CD 3711	Control Building	X2APOL, C9.7
CD 3712	Fuel Handling Building	X2APOL, C9.7

The above deviation reports were generated by the licensee's civil group resulting from a reinspection verification program conducted in 1983.

- (1) Deviation Report CD 3710 was reviewed with regard to anchor bolt spacing and base plate edge distance. It was noted that bolt # 2 shown on attachment 12 in the Plate Edge Distance column; bolts # 1 and #2 shown on attachment 14 in the Bolt Spacing column; and bolts #1, #2, and #3 shown on attachment 51 in the Bolt Spacing column, were incorrectly dispositioned (Acceptable yes or no) in accordance with Detail 1, Drawing AX2D08C005, Rev. 14. Furthermore, Detail 2 on attachment 53 showed inadequate information in terms of minimum bolt spacing consideration per specification X2APOL, C.9.7, Table 1 requirements.
- (2) Deviation Report CD3711 was partially reviewed. It was found that bolt #1 shown on attachment 3 in the Bolt Spacing column was incorrectly dispositioned in accordance with Detail 1 requirements on attachment 6.
- (3) Deviation Report CD 3712 was partially examined. The inspector noted that bolts #1, #2 and #3 shown on attachment 2 in the Bolt Spacing column were rejected by the licensee inspector. In accordance with Detail 26, Drawing AX2D94V002, bolt spacing for bolts #1, #2 and #3 should be acceptable. Bolt spacing for bolt #4 shown on attachment 6 was rejected by the licensee inspector. A reviewed of section A on attachment 8 indicates that bolt spacing for bolt #4 should be acceptable. In addition, bolt spacing for bolt #3 and #4 shown on attachment 15 was rejected. Based on information specified on attachment 17, bolt spacing for these two bolts should be acceptable.

Discrepancies identified from the above review indicate a significant amount of incorrect information contained in the aforementioned deviation reports. Furthermore, these discrepancies were generated by three different (licensee's) inspectors. It appears that there is some confusion on the part of the inspector who are Recording Bolt Spacing Data. Pending further evaluation by the licensee for concrete expansion anchor inspection and more training to the inspectors, this matter is identified as unresolved Item 424/84-04-02, Improper Identification of Bolt Spacing for Concrete Expansion Anchor Inspection and Training Requirements.

Within the areas inspected, one violation was identified.