



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

Report Nos.: 50-424/85-20 and 50-425/85-20

Licensee: Georgia Power Company
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: May 6 - 10, 1985

Inspectors: M. D. Hunt 5/29/85
M. D. Hunt Date Signed
T. E. Conlon for 5-29-85
A. B. Ruff Date Signed
M. D. Hunt for 5/29/85
T. D. Gibbons Date Signed

Accompanying Personnel: T. E. Conlon

Approved by: T. E. Conlon 5-29-85
T. E. Conlon, Section Chief Date Signed
Engineering Branch
Division of Reactor Safety

SUMMARY

Scope: This special, unannounced inspection involved 140 inspector-hours on site in the areas of on-site electrical design activities, cable installation activities, cable placement in raceways, raceway cleanliness and employee concerns.

Results: No violations or deviations were identified.

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REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *D. O. Foster, Vice President and Project General Manager
- *H. H. Gregory, III, General Manager, Vogtle Nuclear Construction Department
- *J. R. Downs, Electrical Discipline Manager
- *L. B. Glenn, Quality Concerns Manager
- *M. H. Googe, Project Construction Manager
- *E. D. Groover, Site Quality Assurance (QA) Manager
- *B. C. Harbin, Manager, Quality Control (QC) - Construction
- *C. W. Hayes, Vogtle QA Manager
- *W. T. Nickerson, Deputy Project General Manager

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

Other Organization

- *F. B. Marsh, Project Engineering Manager Bechtel Power Corp. (BPC)
- *S. Pietrzyk, Assistant Project Engineer - Design, BPC
- *D. W. Strohman, Project QA Engineer, BPC

NRC Resident Inspectors

- *W. Sanders, Senior Resident Inspector Construction
- *R. J. Schepens, Resident Inspector - Construction

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on May 10, 1985, with those persons indicated in paragraph 1 above. The inspectors described the areas inspected and discussed in detail the inspection findings. No dissenting comments were received from the licensee. The following new items were identified during this inspection:

Inspector Followup Item (IFI) 424, 425/85-20-01 - Examine the corrective actions relating to IEEE 384 separation concerns (paragraph 7.c).

IFI 50-424, 425/85-20-02, Review the documentation requirements for cable clamp and entry fittings (paragraph 7.d).

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) Unresolved Item 50-424, 425/85-10-02, Review the Overall Nonconformance Control Program. This item was examined in further detail and determined to be part of violation 50-424, 425/85-16-03.

4. Unresolved Items

Unresolved items were not identified during the inspection.

5. Review of Onsite Electrical Design Activities (37055B)

A discussion with onsite representatives and a review of procedures showed that class 1E electrical design activities for the Vogtle plant are performed by an Architect Engineer (A/E), BPC which is represented onsite by project field engineering (PFE) organization. Onsite class 1E electrical design activity by Georgia Power Company (GPC) and BPC is restricted to a review and recommendation process. This action is accomplished by Deviation Reports (DR), Field Change Requests (FCR), Design Change Notices (DCN) and Construction Specification Change Notices (CSCN).

The disposition of "use-as-is" and "repair" on a DR requires that the "Approved Disposition" on the form be completed by the A/E and requires the approval signature of the responsible A/E representative. Disposition for the above items requires an engineering rationale with substantiating data and can include a DCN or an FCR. The BPC electrical project field engineering (PFE) group also reviews DRs if it concerns a construction or material specification. Disposition other than "use-as-is" and "repair" are made by the GPC electrical engineering group. These categories of disposition for GPC are "reject", "void", "rework", etc. Dispositions are defined in the Bechtel's Project Reference Manual, Part C - Engineering, Section 18 - Deviation Reports, and GPC Construction Procedure GD-T-01, Nonconformance Control.

The Authorization to Continue Work (ATCW) allows construction to continue work prior to receiving full engineering review and approval. In the electrical class 1E area, this can apply to BPC drawings and specifications. The ATCW is a risk release that allows the onsite PFE to authorize the continuation of work that in their judgement is correct and proper on items that require offsite Home Office Engineering (HOE) design review and/or approval. If the home office does not concur with the PFE-approved disposition, HOE shall immediately contact PFE. Home office will discuss the reasons for rejecting the DR and followup with a letter to the PFE who will resolve the disposition with GPC. The ATCW procedural system is also discussed in Region II's Inspection Report 425/84-06.

6. Electrical (Cable and Terminations) Observation of Work and Work Activities (Unit 1)(51063B)

Cable pulling activities were observed in the field for partial pulls on class 1E cables, 1AT13005ASE, 6ASE, 7ASE and 8ASE. Cables were pulled from the cable spreading room to the control room. Sufficient manpower was assigned to make the pull and two QC electrical inspectors witnessed the pulling operation. One followed the cable as it was routed and the other observed the operations as the cable was fed thru the pullers. All actions observed were considered satisfactory. Cable installation was examined to assure compliance with the licensee's Safety Analysis Report and Construction Procedure ED-T-07, Cable Installation. The size and type cable, routing, and raceway identification were in accordance with the cable pull card. Raceway supports, raceway loading, and physical separation were examined and found to be satisfactory.

Several Class 1E cable trays were examined in various areas of the plant to ensure that no cable splices were made in trays, (Class 1E cable splices in trays are prohibited by the Final Safety Analysis Report (FSAR), paragraph 1.9.75.2 and construction specification X3AR01, paragraph E.9.5.6), to verify proper cable placement in trays and cleanliness of trays. The following cable trays in the areas indicated were examined:

<u>Cable Tray</u>	<u>Location</u>
1AE424TSAL	RA-15
1AE424TFAL	RA-15
1AE414TFAK	RA-13
1AE414TSAK	RA-13
1BE412TLCP	RB-50
1BE412TUCP	RB-50
1BE413TSCO	RB-50
1BE413TVCT	RB-50
1BE413TVCK	RB-50
1BE413TUCK	RB-50
1BE413TUCL	RB-50
1AE301TRAK	RB-69

Cable placement and cleanliness were satisfactory and no splices were found. One cable appeared to be spliced in tray 1BE413TVCT but after further investigation it was determined to be a repair of insulation damage to the cable jacket. Cable jacket repairs are permitted per construction specification X3AR01, paragraph E.9.5.6, with project engineering approval via a DR. DR 07059 was issued, approved and signed off as complete for the above repairs.

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

7. Employee Concerns

The NRC has been contacted at various times by individuals who expressed concerns relating to the construction quality control program at Plant Vogtle. As a result of these concerns, the NRC inspectors interviewed various personnel, examined QC records, personnel records, and engineering specifications and details. Numerous safety-related components related to the expressed concerns were examined during this inspection. Meetings were held with various management employees in an effort to determine if the concern expressed to the NRC were part of the ongoing Quality Concern Committee investigations. While the concerns were similar in nature, it was determined that a separate examination of the concerns was warranted. The following is a list of the concerns examined during this inspection, a discussion of the method of evaluation and the findings resulting from the examination of QA records, procedures, specification and discussion with various personnel.

a. Concern:

Employee claims his supervisor is not logging DRs into the system and that he has been discarding DRs submitted by inspectors. Employee claims that his supervisor is trying to hold down the number of DRs submitted. The employee stated that all DRs submitted should be entered into the system and after evaluation, if invalid, they should be voided.

Discussion:

The inspectors interviewed the managers at levels above those of the supervisor identified by the employee. The managers advised that they had been made aware of this concern and had conducted an interview and unannounced desk search regarding this supervisor. They did not find any DRs that were being held by this supervisor. The NRC inspectors also interviewed the supervisor. He advised that he frequently discussed DRs when submitted to determine what requirement or specification had been violated. He informed the NRC inspectors that he had never destroyed a DR or rejected a DR that he felt was valid. The NRC inspectors were advised that there is no effort on the part of management to hold down the number of valid DRs but that a screening process is used to ensure validity. It was noted during previous inspections that Procedure GD-T-01, Nonconforming Control, requires the immediate supervisor to "review the report for completeness, acceptability, and hold tag requirements before assigning it a control number." A Field Procedure Change Notice (FPCN) No. 35 dated 12/5/84 states, "For DRs which you feel should not be assigned a number, write a justification as to why, on the DR and send the original to the Assistant Manager of Quality Control." A QA Electrical Assessment Audit dated April 16, 1985, identified the fact that control measures in effect at the time of the audit did not adequately assure that all unissued DRs are

forwarded to the Assistant QC Manager and that all are maintained in the file. In addition, a QC manager's memo dated April 2, 1985, established an interim DR number system to ensure that all DRs are assigned an identifying number.

Findings:

From the interviews conducted during this and previous inspections it could not be concluded that the QC supervisor named in this concern was rejecting valid DRs in an effort to hold down their numbers. However, it was evident that the procedure did not address a method for ensuring that DRs were being accounted for until the FPCN No. 35 was issued and further enforced by the QC manager's April 2, 1985 memo. This concern is substantiated in part in that the system did not address rejected DRs and no method was evident until recently to ensure that all DRs valid or invalid were accounted for.

b. Concern:

Loss of control of documents on installations that are accomplished through use of a calibrated tool..specifically dealing with crimping tools.

Discussion:

The inspectors examined the onsite calibration shop. The records of all calibrated tools are maintained on file in this area. A random review of 12 calibration records verified the information given the inspectors that to date, only two crimping tools had been found out of calibration during the entire period starting in October 1982 when the tools were received on site. The licensee has approximately 1200 crimping tools of various models on site. The calibration check frequencies have been extended to three months from the monthly requirement based on the successful past history of crimping tool calibrations.

The documenting of the serial number (S/N) of the calibration tools used to make various termination and approved splice crimps is required when a termination card associated with the EE580 program is the controlling installation document. The licensee has no requirements to record the crimping tool S/Ns when used to make changes to terminations as the result of a FCN, rework orders or DR disposition unless the change document causes the EE580 program to issue a revised termination card.

Findings:

This concern is substantiated in that in certain instances the S/N of a crimping tool used to make termination may not be recorded. The fact that the S/N for crimping tools used to make repairs, required by discrepancy punchlists, were not being transferred from the craft

document to the QC inspection documents was identified as part of Unresolved Item No. 424, 425/84-35-04, Discrepancy Punchlists for Cable Terminations. The recording of the crimping tool S/N can be a time-saving process if or when a crimping tool is found out of calibration and it becomes necessary to re-examine all crimps made by the tool during the period that it is determined to be out of calibration. At the present time, there does not appear to be a problem with the calibration of crimping tools but only with the logging of S/N on certain documents.

c. Concern:

Violation of IEEE 384 on Separation Criteria.

Discussion:

Numerous DRs have been written addressing electrical wiring and cable separation problems. Additionally, these concerns have been submitted to the Quality Concerns Program for evaluation. Audit Findings Report (AFR) Nos. 689 and 004 identified cable separation problems. The licensee is aware of these problems and advised the NRC inspectors that corrective measures are being taken. It should be noted that in many instances separation of cables and wiring per IEEE 384 are not accomplished until the near completion of the unit when fire barriers and tray covers are installed.

Findings:

This is a valid concern as evidenced by the DRs and AFRs. The separation problems will be followed, observed and the licensee's corrective actions examined during subsequent inspections. This is identified as an Inspector Followup Item 50-424, 425/85-20-01, Examine the Corrective Actions relating to IEEE 384 Separation Concerns.

d. Concerns:

- (a) There is no procedure to inspect clamps holding armour lock cable on unistruts or other hangers.
- (b) Deficiency on inspection documents and procedures for flex conduit and items installed at points of equipment entry...conduit nipples, split tray connector, etc....

Discussion:

These concerns were reviewed during this inspection. Discussion with the licensee representatives revealed that the required information is to be further reviewed to ensure clarification for QC inspection functions.

Findings:

This item will require further examination by NRC. The fittings and clamps can be inspected and documented during the sealing of equipment openings and final equipment and area acceptance. This item will be followed during subsequent inspections and is identified as an Inspector Followup Item 50-424, 425/85-20-02, Review the documentation requirements for cable clamps and entry fittings.

e. Concern:

Specification C24-5 is not being followed on Equipment Change Orders

Discussion of Concern:

The document referred to in this concern is the Vogtle Electric Generating Plan Project Reference Manual (PRM), Part C, Engineering, Section 24, "Changes to Supplier Equipment". The PRM is a BPC engineering document which describes the method of interface between BPC, the licensee and other site organizations. The licensee's construction procedure GD-T-25, Changes to Supplier Equipment at the Jobsite is the controlling document for engineering/inspection activities for field changes to supplier equipment described as Field Equipment Change Orders (FECO). The NRC inspector determined through discussions with various engineering and inspection personnel that the procedure GD-T-25, Revision 0 was not changed to reflect an organizational change in responsibilities or the addition of field wiring revisions activities identified as "Jumper Packages". A Stop Work Notice (SWN) number SW-E-16 was issued by the QA section during an audit to require proper identification of personnel responsibilities in the procedure. The procedure was revised on May 2, 1985, to reflect the organizational changes and the SWN was lifted. The revision (number 1) corrected the QA concerns.

Findings:

The concern was substantiated in that the QA organization identified the procedure GD-T-25 as inadequate, issued a SWN and caused a procedure revision to be issued. The procedure GD-T-25 is the inspection document to be used for verification of field changes to supplier equipment. The PRM is an engineering interface document as described above and not an inspection document.

8. Inspector Followup Items (IFI)

- a. (Closed) IFI 424, 425/84-28-01, Review Deviation Reports. This item addressed the frequent use of "VOID" for dispositioning DRs. Additional problems in the dispositioning of DRs, were identified during a subsequent inspection. These problems were identified as violation 50-424, 425/85-16-03. This item is closed and is now incorporated as part of that violation.

- b. (Closed) IFI 424,425/84-28-02, Clarification of Repairs on Conductor Insulation for Class 1E circuits. This item was initially opened because of the ambiguity of X3AR01, Rev. 7, construction specification concerning repairs of individual conductors inside panels that had conductor jacket damage. This conductor insulation damage normally consists of minor nicks or gouges that usually occur as the result of removing the cable jacket that envelops the conductor and its insulation. To affect repairs when the conductor insulation was damaged the licensee cuts out the conductor in the damaged area and uses engineering approved splices. The licensee stated that the removal of the conductor portion containing conductor insulation damage and splicing as indicated above was not in conflict with the specification. Specification X3RA01, paragraph E9.5.6.B, states "Cable repair is not permitted on individual conductor insulation for class 1E circuits... Further clarification was made by FCRB 7459, Construction Specification Change Notice (CSCN), which added the following to the specification sentence quoted above: "(repair in this context is the augmenting of the damaged insulation or jacket with additional insulation such as heat shrink material per paragraph E below; it does not include splicing described in paragraph A above)". Paragraph A was also modified by this CSCN.

Since the inspection of October 1984, the licensee has amended paragraph E9.5.6.B by CSCN 279 of February 13, 1985, to allow repairs of individual conductor jacket insulation inside enclosures with engineering approval via a DR. This IFI is closed.