



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

Report No.: 50-425/87-45

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

Docket No.: 50-425

License No.: CPPR-109

Facility Name: Vogtle 2

Inspection Conducted: November 16-19, 1987

Inspector: Paul J. Fillion 12/29/87  
P. J. Fillion Date Signed

Accompanying Personnel: M. Miller

Approved by: T. E. Conlon 12/29/87  
T. E. Conlon, Section Chief  
Plant Systems Section  
Division of Reactor Safety Date Signed

SUMMARY

Scope: This routine, unannounced inspection was in the areas of electrical, and instrumentation and control construction activities.

Results: No violations or deviations were identified.

## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

- J. Adams, Lead Instrumentation Engineer, Mechanical Construction
- \*J. J. Gilmartin, Mechanical Engineer Construction
- \*L. B. Glenn, Manager of Quality Control
- \*E. D. Groover, Quality Assurance Site Manager Construction
- \*A. W. Harrelson, Electrical Discipline Manager Construction
- \*C. W. Hayes, Quality Assurance Manager, Site
- \*G. A. McCarley, Project Compliance Coordinator Construction
- R. Osbourne, Quality Control, Receipt Inspection
- \*R. H. Pinson, Vice President, Construction
- \*W. C. Ramsey, Project Engineering Manager
- \*P. D. Rice, Vice President and Project Director
- \*J. E. Sanders, Assistant Project Manager
- R. Smith, Manager Of Electrical Engineering Construction
- \*V. J. Turner, Compliance Engineer, Electrical

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

#### Other Organizations

- \*B. L. Edwards, Resident Construction Manager, Pullman Power Products (PPP)
- \*J. E. Miller, Quality Assurance Manager, PPP
- C. Roach, Westinghouse Electric Corporation

\*Attended exit interview

### 2. Exit Interview

The inspection scope and findings were summarized on November 19, 1987, 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) URI 50-425/87-35-01, Review Cable Interlacing Requirement Contained In Procedure ED-T-07.

Revision 12 of Cable Installation Procedure ED-T-07 did not reference Exhibit 10 in the procedure and identified it only as a "Checklist for Cable Pulling." Item 9 in Exhibit 10 specified "no interlacing of cables

in trays" although Electrical Construction Specification No. X3AR01-E9 permits cable interlacing where practical. ED-T-07 has been revised by Field Procedure Change Notice No. 42 dated August 12, 1987, to reference Exhibit 10 in paragraph 5.3.5.1, specified Exhibit 10 as a checklist for Non-IE cables, and changed Item 9 to read "avoid interlacing of cables in trays as much as practical." This item is closed.

4. Unresolved items

Unresolved Items were not discussed during this inspection.

5. Licensee Identified Items (Construction Deficiency Reports-CDR) 10 CFR 50.55(e)

(Closed) CDR 83-45, NSSS Protection System Relay Cards

Westinghouse Electric Corporation (WEC) notified the NRC in their letter NS-EPR-2774 dated June 1, 1983, that during seismic testing of the temperature (T) channel test card (NTC), relay contact bounce was identified. The contact bounce would result in signal saturation of the resistance temperature detector amplifier card in the T-hot and T-cold circuits of the WEC 7300 Process Protection System (PPS). WEC has designed and tested a modification for the NTC cards which required adding a daughter board with additional relays. The additional relay contacts from the daughter board are paralleled with the existing contacts. The inspectors held discussions with responsible representative from the licensee and WEC and, reviewed supporting documentation to verify that corrective action has been completed. The WEC field Change Notice No. GBEM 10636 (2X6AA19-322) has been implemented by Bechtel Field Equipment Change Order No. N-296-BF and GPC Nuclear Plant Maintenance Work Order No. 28701001 dated July 7, 1987. The field work was completed October 22, 1987, and reviewed by appropriate Bechtel and GPC project personnel. This item is closed.

6. Electrical Components and Systems-Procedure Review (51051)

The inspectors reviewed the licensee's quality assurance program to determine that it was consistent with the requirements in the Safety Analysis Report (SAR) relating to electrical and instrumentation activities. The electrical QA related procedures reviewed are identified as part of the procedures examined in the electrical instrumentation section of this report. (paragraph 9)

Construction Procedure GD-A-30, "Receipt, Receipt Inspection, Storage and Handling" Rev. 15 (general revision) dated November 15, 1987, was reviewed. The procedure is consistent with Regulatory Guide 1.38 and ANSI N 45.2.2 and FSAR commitments. Input from other groups to be used during the receiving inspection was obtained and properly utilized. "Supplier Quality Verification Documentation List - Detailed" (SQVDL-D) is included in each shipment when applicable and, is reviewed by quality control personnel responsible for the receiving inspection activities. The completed SQVDL-D sheets document that required source inspections and tests were carried out when signed by the responsible licensee engineer. "Supplier Deviation

Disposition Request" sheets are included in each shipment when applicable so that any anomalies noted during source inspections can be tracked. GD-A-30 requires for the GPC Material, Receipt and Planning Section, upon receipt of equipment to prepare an inspection checklist. This checklist indicates what physical and paperwork checks must be made on the particular equipment being received.

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

7. Electrical Components and Systems - Work Observation (51053)

The NRC inspector observed and evaluated portions of receiving inspection activities pertaining to electrical components and items. It was verified that identification appears on components and in receiving documents. Walkdowns of the equipment receiving areas and interviews with quality control personnel responsible for receiving inspections indicated that an adequate number of qualified personnel are available to perform the receiving inspection function. Receiving personnel were familiar with the requirement of procedure GD-A-30. Quality control receipt inspectors stated that inspections are performed in an area to meet the level of storage. It was observed during warehouse walkdowns that electrical equipment had sufficient markings to maintain traceability. Examples of equipment observed are as follows:

<u>Description</u>	<u>P. O. No.</u>	<u>Tag or Stock No.</u>
Heat tracing panel	PAV 2-251-C/010	2-1817-U3-007A
Cable grips	PAV 5488 c/o 123	ECNT-2306
Terminal lugs	PAV 5796	
Heat shrinkable material	PAV 4006 c/o 57	EKIT-0417

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

8. Electrical Components and Systems - Records Review (51055)

The inspector reviewed and evaluated a selected sample of receiving inspection records associated with electrical components. Records for the following equipments were reviewed:

<u>Description</u>	<u>P. O. No.</u>	<u>Tag No.</u>
Low-voltage penetration	PAV2-150	2-1818-H3-P02
4160 V SWGR 2BA03	PAV2-27	2-1804-S3-A03

<u>Description</u> (Continued)	<u>P. O. No.</u>	<u>Tag No.</u>
480 V SWGR 2AB05	PAV2-85	2-1805-S3-B05
Battery	PAV2-52	2-1806-B3-BYC
Battery Charger	PAV2-52	2-1806-B3-CAA

The following receipt records are retained for documentation purposes:

- Receipt Inspection Reports
- Supplier Quality Verification Documentation List - Detailed
- Certificate of Conformance
- Copies of Test Results
- Supplier Deviation Disposition Request
- Packing List

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

9. Electrical Cable - Procedure Review (51061)

Instrumentation Components and Systems - Procedure Review (52051)

The inspector examined the requirements for the control and installation of safety-related instrumentation which are electrical and mechanical. Electrical instrumentation, including electrical instruments and components, systems, cables, terminations, and associated items, is installed, inspected, and documented by Georiga Power Company (GPC) using their quality assurance program and construction procedures. The mechanical instrumentation is installed, inspected and documented by the mechanical instrumentation contractor, Pullman Power Products Corporation (PPP) which has its own quality assurance program and construction procedures. The inspector examined documentation where GPC reviewed and approved PPP quality assurance program and construction procedures.

The inspector reviewed the following licensee's (GPC) quality assurance procedures applicable to both electrical and mechanical instrumentation:

<u>Procedure</u>	<u>Revision</u>	<u>Title</u>
QA-01-01	12	Organization and Responsibilities of the QA Department
QA-03-02	14	Training and Personnel Qualification
QA-03-C5	6	Qualification of Auditors

<u>Procedure</u> (Continued)	<u>Revision</u>	<u>Title</u>
QA-04-06	9	Supplier/Bidder QA Manual Review and Approval
QA-05-01	16	Field Audits
QA-05-02	16	Corporate/Supplier Audits
QA-05-16	4	Stop Work Orders
QA-05-17	3	QA Surveillance
QA-05-21	2	Supplier Qualifications and Surveillance

The inspector reviewed the construction specifications to determine if the technical requirements contained in the FSAR for safety-related instrumentation and associated electrical items had been adequately incorporate with sufficient detail and clarity. In addition, the specifications were reviewed for quality assurance requirements and the requirements for field construction procedures. The following two construction specifications were reviewed:

- (1) Electrical Construction Specification No. X3AR01, Revision 33 dated February 23, 1987.
- (2) Plant Design and Construction Specification No. X4AZ01
  - (a) Division P1 General Requirements, Revision 18 dated May 11, 1987
  - (b) Division P2 Instrumentation - Installation of Instrument Piping Tubing and Instrument Hook-Up, Revision 19 dated October 7, 1987.

Construction Specification Change Notices (CSCN) and field change requests already implemented to the mechanical Construction Specification No. X4AZ01 were noted but not reviewed.

The inspector reviewed construction procedures by GPC for electrical instrumentation and by PPP for mechanical instrumentations. These procedures were reviewed to determine if the NRC requirements, SAR commitments, and construction specifications were properly incorporated for adequate work performance, inspection, and control. The following procedures were reviewed:

GPC	GD-A-30 Rev. 15	Receipt, Receipt Inspection, Storage and Handling	11/15/87
PPP	X-5	Field Receiving Inspection Procedure	07/16/87

PPP	III-1	Identification of Materials, Parts and Components	06/11/87
PPP	XIII-5	Field Storage	12/10/86
PPP	XIII-19	Storage, Control and Usage of Materials with Shelf Life	08/04/86
GPC	ED-T-34 Rev. 0	Electrical Instrumentation Installation	01/23/87
PPP	IX-40	Instrumentation Installation Inspection and Testing	10/21/87
PPP	XII-2	Procedure for the Calibration of Tools, Measurement, and Test Equipment	10/21/87
PPP	II-4	Inspection and Testing Personnel Control and Administration of Training Examination, Qualification and Certification	01/14/87
PPP	X-4	Final Inspection Procedure	09/23/87
PPP	X-28	Procedure for Evaluation of Inspections	09/15/84
PPP	JS-IX-77	Supplemental Design Change Procedure (Greenlining)	03/12/87
PPP	III-4	Drawing and Design Control Procedure	09/02/87
PPP	XVI-2	Corrective Action Procedure	05/14/86
PPP	X-24	Procedure for As-Built Piping Systems and Related Components	10/07/87
PPP	SI 11	Site Instruction for "As-Building of Installation Drawings	05/21/87
PPP	SI 88	Design Change Impact Review	08/20/87
PPP	SI 100	Site Instruction for Reporting Infringements of Spacing Requirements	07/01/87

These construction procedures were reviewed to ensure each contained the following requirements:

- (1) The purpose for safety-related installations was clearly stated where applicable.
- (2) All applicable references were listed.

- (3) Responsibilities are specifically defined.
- (4) Inspection requirements, acceptance criteria and QA/QC responsibilities are included where applicable.

These procedures and documentation were found adequate for the activities they addressed.

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

10. Instrument Components and Systems - Work Observation (52053)

The inspector performed a walkdown for two instrumentation storage facilities. The main storage facility is identified as the "Instrument Warehouse" and is under the direction of GPC. The second facility is identified as "Troy 3" and is under the direction of PPP. The storage conditions, temperature, humidity and cleanliness are monitored and controlled as specified. The instruments and components are all clearly identified and located (stored) to meet the in-storage requirements. The personnel operating these facilities appear to be qualified and perform their duties in a professional manner. Within the areas examined, no violations or deviations were identified.

11. Instrument Components and Systems - Records Review (52055)

The inspector reviewed two audits of PPP for mechanical instrumentation performed by GPC Quality Assurance Department and the qualifications of the auditors. Both auditors met the requirements of quality assurance procedure QA-03-05, Revision 6, Qualification of Auditors. The audits performed are listed by File No. X7BG17-C-CP21 and are:

QA Audit of Mechanical Instrumentation (PPP) CP21-87/18 Corr.  
No. QA-5028 dated May 21, 1987.

QA Audit of Mechanical Instrumentation (PPP) CP21-87/51 Corr.  
No. QA-5168 dated October 29, 1987.

Audit QA-5168 results indicated the PPP instrumentation program is adequate and satisfactorily implemented to ensure necessary quality requirements are met. Audit QA-5028 results indicated overall compliance by PPP to applicable procedures with one exception. The one exception was four welders examined had not received training per PPP Procedure IX-40 as required. There was no direct impact on hardware, as the IX-40 training for welders is "For Information Only." All IX-40 requirements (except welding) are performed by fitters and QC inspectors.

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