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

Report No.: 50-425/89-37

Licensee: Georgia Power Company
P. O. Box 1295
Birmingham, AL 35201

Docket No.: 50-425 License No.: NPF-81

Facility Name: Vogtle 2

Inspection Conducted: October 30 - November 3, 1989

Inspector: R. Moore 11/22/89
R. Moore Date Signed

Approved by: F. Jape 11/22/89
F. Jape, Section Chief Date Signed
Quality Performance Section
Operations Branch
Division of Reactor Safety

SUMMARY

Scope:

This routine, unannounced inspection was conducted in the areas of Measuring and Test Equipment, Surveillance Testing and Calibration Control, and Test and Experiments. The programatic controls for these quality related activities were inspected prior to the issuance of the Unit 2 operating license (NRC Inspection Report No. 50-425/88-25). This inspection reviewed the implementation of these controls for Unit 2.

Results:

The overall Unit 2 implementation of the programs for these safety related activities was adequate. One violation was identified related to a failure to perform evaluations validating previous usage of measuring and test equipment found to be out of calibration, lost, or stolen. (paragraph 2). An inspector follow-up item was identified related to the incomplete status of the calibration program for installed instrumentation utilized to verify Technical Specification requirements. (paragraph 3). At the exit meeting, licensee management stated this identified instrumentation would be entered into a calibration program by January 1, 1990.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

*J. Aufdenkampe, Technical Support Manager
M. Dugan, Unit 2 Surveillance Tracking Coordinator
*G. Frederick, Quality Assurance Site Manager
D. Gustafson, Maintenance Engineering Supervisor
*H. Handfinger, Maintenance Manager
*M. Horton, Engineering Support Manager
*W. Kitchens, Operations Assistant General Manager
*M. Lackey, Outage and Planning Manager
*G. McCarley, Independent Safety Engineering Group, (ISEG) Supervisor
*L. Mansfield, Engineering Nuclear Steam System Supplier, (NSSS) Supervisor
*A. Mosbough, Plant Support Assistant General Manager
W. Nicklin, Regulatory Compliance Supervisor
L. Noblett, Instrumentation and Control (I&C) Supervisor
L. Richardson, Maintenance Measuring and Test Equipment,(M&TE) Foreman
J. Sutpin, I&C Supervisor
*J. Swartzwelder, Operations Manager
R. Vaught, Senior Plant Engineer
*T. Webb, Senior Plant Engineer

Other licensee employees contacted during this inspection included craftsmen, engineers, technicians, and administrative personnel.

NRC Resident Inspectors

*J. Rogge
*R. Starkey

*Attended exit interview

2. Measuring and Test Equipment (35750)

References:
a. 10 CFR 50, Appendix B, Quality Assurance Criteria for Nuclear Power Plants

b. VEGP FSAR Amendment 35

c. Regulatory Guide 1.33, Quality Assurance Program Requirements (Operations)

d. ANSI N18.7-1976, Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants

e. Regulatory Guide 1.30 Quality Assurance Requirements for the Installation, Inspection and Testing of Instrumentation and Electrical Equipment

f. ANSI N45.2.4-1972 IEEE Standard, Installation, Inspection, and Testing Requirement for Instrumentation and Electrical Equipment During the Construction of Nuclear Power Generating Stations

The Inspector reviewed the implementation of the M&TE program required by references (a) through (f) to determine if the program had been implemented in accordance with regulatory requirements and industry guides and standards. The following criteria were used during this review to determine the overall acceptability of the program implementation:

- Responsibility was delegated and criteria established to assign and adjust calibration frequency for each type of M&TE.

- An equipment inventory list identified each specific piece of M&TE, its location, and the reference standard used for calibration.

- Documentation of M&TE calibration history including:

  Traceability to the calibration source
  As-found and as-calibrated data
  Identification of calibration procedure used
  Date of calibration
  Date of next calibration
  Name of person performing calibration.

- Identification of calibration standard used and their traceability to nationally recognized standards or basis for calibration if no national standard exists.

- Each piece of equipment was calibrated on or before the date specified or stored in a location separate from inservice M&TE.

- When M&TE was found out of calibration, documented evaluations to determine the cause of the out-of-calibration condition and the acceptability of items previously tested were performed.

Inspection of program implementation for M&TE was accomplished by verification of specific program requirements to a selected sample of M&TE. There was no dedication of M&TE for a particular unit therefore program implementation as applied to both Unit 1 and 2 was reviewed. The M&TE from two M&TE maintenance groups, Instrumentation and Control (I&C) and Mechanical/Electrical (M/E) provided the equipment sample reviewed. Although program controls were similar, these two M&TE activities, I&C and M/E, were administered independently. The following M&TE were utilized to verify implementation of program requirements:

VP	2266	VP-2-1053
VP	3002	VP-2-1280
VP	3018	VP-3-2018
VP	9030	VP-3-2078
VP	2451	VP-3-2078
VP	4007	VP-3-2179
VP	5055	VP-3-2496
VP	7005	VP-4-1076
VP	8003	
VP	9129	
VP	9100	
VP	5113	

The two M&TE programs reviewed indicated that implementation was in compliance with programatic controls with the exception of out-of-calibration evaluation performance. It was notable that the two programs operated at different levels of effectiveness. For example the I&C M&TE program utilized a manual tracking system for equipment while the M/E program utilized a computer based system. The I&C sample contained numerous cases of M&TE which were not calibrated on the calibration due date and, in several of these cases, calibration was performed up to six months after the due date. It appeared that the equipment was removed from service although no documentation was available indicating the equipment was removed to a holding area or calibration facility. In contrast, the M/E equipment sample documentation demonstrated calibration performance on or before the calibration due date. A broad review of plant surveillance activity was performed to verify appropriate M&TE usage and documentation. This usage review provided assurance that plant measuring and testing activities, was performed with calibrated equipment depite the different effectiveness levels of plant M&TE programs.

Review of M&TE calibration documentation activity identified an extension to an equipment calibration interval which was inadequately documentated. An interoffice memorandum dated February 20, 1989, extended the calibration interval for 15 Genisco Velocity Transducers to allow usage of this equipment for Unit 2 start-up and power ascension testing. The documentation provided no basis for extending the calibration interval other than the need for the equipment. Discussion with responsible personnel indicated that the storage conditions, usage frequency, and calibration history provided a justifiable basis for extension, however no documentation verified that these issues had been addressed.

The implementation deficiency identified in M&TE activity was the performance of evaluations for equipment found to be out of calibration, lost, or stolen. This deficiency was identified primarily in the I&C program for M&TE. Approximately 150 evaluations were outstanding, many dating from 1987 and 1988. The age and volume of this backlog indicated a programmatic deficiency. The M&TE administrative procedure required the evaluations be performed; however, there was no timeliness requirement or assigned tracking mechanism to assure completion.

Subsequently, 40 of the evaluations which were designated for engineering review were not performed. Another 50 of the 150 outstanding evaluations had not received internal review and assignment for evaluation by I&C personnel. The remainder were in various stages of review.

Evaluation requests were transmitted via interoffice memorandum and were not assigned to a tracking system internal to the engineering organization. An example of an evaluation notification was for M&TE VP-2284 which was transmitted on May 27, 1987. Due to apparent lack of response, another notice was sent one year later on May 20, 1988. The M&TE notices did not state a time limit for response or indicate a requested date of response. The lack of a procedural timeliness requirement and lack of an adequate tracking mechanism were major contributors to the failure to perform evaluations of M&TE discovered to be out of calibration, lost, or stolen. This failure to perform out of calibration evaluations as required by ANSI N45.2.4-1972 and the licencee approved QA Program as described in the FSAR, Section 17.2, is identified as violation 89-37-01.

Review of licensee audits of this activity did not indicate specific audit program deficiency although the licensee did not identify this problem. Licensee M&TE audit activity focused primarily on equipment usage and documentation which were strong performance areas by plant personnel. Out-of-calibration evaluation activity was not reviewed comprehensively. Evaluations required within M&TE sample selection by audits did not identify problems in this function therefore it was assumed the program was effective. The frequency and scope of M&TE audits was adequate to review primary aspects of program performance and there did not appear to be sufficient precursors to identify deficiencies in this area.

3. Surveillance Testing and Calibration Control (35745)

References:

a. 10 CFR 50, Appendix B, Quality Assurance Criteria for Nuclear Power Plants

b. ANSI N18.7-1976, Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants

c. Regulatory Guide 1.33, Quality Assurance Program Requirements (Operations)

d. VEGP-FSAR, Section 17, Amendment 35

e. VEGP-QA Manual, Section 11, Test Control, Revision 10

The inspector reviewed the implementation of the licensee's surveillance testing and calibration control program required by references (a) through (e) to determine if the program had been implemented in accordance with regulatory requirements, industry guides and standards, and Technical Specifications (TS).

The surveillance program implementation was reviewed with respect to tracking and performance of surveillances. A sample of TS requirements was selected to verify the following; implementing procedures incorporated associated TS requirements as acceptance criteria, surveillances were adequately performed and documented, and the specified performance frequency was maintained. Overall, the surveillance program was adequately implemented. The scheduling and tracking system for surveillances was a programatic strength. A weakness was identified related to the incorportion into a calibration program of installed measuring equipment used to verify technical specification requirements.

The following TS surveillance requirements were reviewed for incorporation into the surveillance program:

4.4.4.1A	4.6.1.7.1
4.4.4.2	4.6.2.1
4.5.1.1	4.6.2.3
4.5.2.b	4.6.4.2
4.5.2.f	4.7.1.2.1
4.6.1.5	

The following implementing procedures were reviewed to verify surveillance task performance fully met associated TS requirement:

14825-1	Quarterly Inservice Valve Test, Revision 2
14860-2	PORV Cold Shutdown Inservice Test, Revision 1
142228-2	Operations Monthly Surveillance Logs, Revision 2
14460-2	ECCS Flowpath Verification, Revision 3
14804-2	Safety Injection Pump Inservice Test, Revision 2
14808-2	Centrifugal Charging Pump, Revision 3
14805-2	Residual Heat Removal Pump & Check Valve Test, Revision 3
14000-2	Shift and Daily Surveillances, Revision 5
14806-2	Centainment Spray System and check valve Inservice Test, Revision 2
14490-2	Containment Cooling System Operability Test, Revision 1
14970-2	Hydrogen Recombiner Functional Test, Revision 1
14546-2	Turbine Driven Auxilary Feedwater Pump Operability Test, Revision 2

The procedures provided adequate quidance for task performance. Specific TS requirements were incorporated into the associated procedures as acceptance criteria and the procedure data sheets provided adequate documentation to task performance. Review of completed task performance sheets indicated that surveillances were performed at TS required frequencies.

The frequency and scope of licensee audits of the surveillance program demonstrated the capability of the licensee to identify problems in this activity. Audit OP09-89/37 reviewed the technical adequacy of implementing procedures for required surveillances. Audit OP09-89/23 reviewed documentation of specific surveillances' performance, including timeliness of performance, tracking information, required reviews, and verification of acceptance criteria. Audit OP09-89/03 reviewed the Unit 2 surveillance program prior to licensing. This review compared the Unit 2 draft TS requirements against Unit 1 TS requirements and implementing procedures. Completed surveillances were reviewed for accuracy and documentation. The acceptability of construction acceptance tests for meeting surveillance requirements was also examined. Audit OP16-89/08 reviewed performance and documentation for initial fuel load.

The scope, depth, and frequency of licensee surveillance audit activity demonstrated adequate monitoring of the Unit 2 surveillance program. The technical content of the audits indicated the capability of the auditing organization to identify programatic problems in this area. Corrective action for identified problems was adequate and timely.

With the following minor exception, the licensee has adequately implemented the Unit 2 surveillance testing and calibration control program. ANSI N45.2.4-1972 requires that installed instrumentation utilized to verify TS requirements be entered into a calibration program. Actions to fulfill this requirement had not been completed for Unit 2. An example of this instrumentation would be a level detector for a safety related tank, or the dischange pressure guage for an ECCS pump. A sample of this instrumentation was selected from TS to verify incorporation into a surveillance program.

Discussion with responsible plant staff personnel indicated this instrumentation would be entered into the surveillance program for calibration or the preventive maintenance program. The instrumentation designated for the PM program had not yet been incorporated into this program, primarily due to a reevaluation of the PM program which was in progress. A review of the instrumentation not yet in a program indicated that the instruments were within acceptable calibration intervals since the Construction Acceptance Test calibration. Acceptable calibration interval was based on Unit 1 equivalent instrument calibration interval. This provided assurance that the use of the instrument for surveillance verification was acceptable. Plant management stated this installed instrumentation, utilized to verify TS requirements, would be incorporated into a calibration program January 1, 1990.

This item is identified as an Inspector Follow-up Item, 89-37-02, Incorporation of Installed Technical Specificatin Verification Instrumentation into a Calibration Program.

4. Test and Experiments (35749)

References: a. 10 CFR 50, Appendix B, Quality Assurance Criteria for Nuclear Power Plants

b. 10 CFR 50.59, Changes, Tests and Experiments

c. Regulatory Guide 1.33, Quality Assurance Requirements (Operations)

d. ANSI N18.7-1976, Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants.

e. ANSI N45.2.8-1985, Supplementary Quality Assurance Requirements for Installation, Inspection and Testing of Mechanical Equipment and Systems for the Construction Phase of Nuclear Power Plants

f. FSAR Section 17 and 14, QA Program and Start-up Test Procedures, Amendment 35

g. VEGP QA Manual, Revision 10

The inspector reviewed the licensee's test and experiments program required by references (a) through (g) to verify program implementation conformance with regulatory requirements and industry guides and standards.

Evaluation of the Test and Experiment program implementation was accomplished by reviewing special test development and performance documentation applicable to Unit 2. The special tests reviewed primarily consisted of information gathering functions which were not safety related; however, the examples demonstrated utilization of program controls. Test and experiment activity not described in the FSAR was accomplished via an engineering procedure, 50014-C, Test or Experiment Request, Revision 2, in conjunction with an administrative procedure, 00053-C, Temporary Procedures, Revision 1. The following Test/Experiment requests were reviewed:

TER 89-005	Operability Test of the Condensate Demineralizer Transfer and Filter Cycles.
TER 89-011	Baseline Secondary Plant Performance Test.
TER 89-03	Functional Test of Security Related Modification.
TER 89-013	Investigation of Reactor Coolant System Flow Anomaly.
TER 89-008	Investigation of Ambient Temperature Effect on MSIV Operation.

The safety evaluations and reviews required by applicable procedure controls were adequately performed and documented. Special Test and Experiment Program activity for Unit 2 had not been audited by the licensee QA organization. Based on the reviewed test/experiment sample, this program has been adequately implemented for Unit 2.

5. Exit Interview

The inspection scope and results were summarized on November 3, 1989, with those persons indicated in paragraph 1. The inspector described the areas inspected and discussed in detail the inspection results listed below. Plant management stated the instrumentation addressed by the IFI would be entered into a calibration program by January 1, 1990. Proprietary information is not contained in this report. Dissenting comments were not received from the licensee.

Item Number	Description and Reference
425/89-37-01	Violation - Failure to perform M&TE out of calibration Evaluations. paragraph 2.
425/89-37-02	IFI - Technical Specification verification instrumentation not in calibration program paragraph 3.