



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

Report No. 50-425/88-18

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

Docket No.: 50-425

License No.: CPPR-109

Facility Name: Vogtle

Inspection Conducted: March 28-31, 1988

Inspector: *Arthur J. Szczepaniec* 4/14/88
 A. Szczepaniec Date Signed

Approved by: *Frank Jape* 4/14/88
 F. Jape, Section Chief Date Signed
 Engineering Branch
 Division of Reactor Safety

SUMMARY

Scope: This routine, unannounced inspection was in the areas of preoperational testing, including test procedure review and test procedure witnessing.

Results: No violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *E. D. Groover, Quality Assurance Site Manager - Construction
- *S. M. Hall, Procedures Superintendent
- *H. M. Handfinger, Project Startup Manager
- *C. W. Hayes, Vogtle Quality Assurance Manager
- *R. H. Pinson, Vice President
- *P. D. Rice, Vice President and Project Director

Other licensee employees contacted included engineers, technicians, operators, mechanics, and office personnel.

NRC Resident Inspector

- *R. Schepens, Senior Resident Inspector - Construction

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on March 31, 1988, 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 material provided to or reviewed by the inspector during this inspection.

3. Licensee Action on Previous Enforcement Matters

This subject was not addressed in the inspection.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Preoperational Test Program Review (70301)

An overall review was made of the Vogtle Unit 2 preoperational test program in the areas of Test Program Administration; Temporary Modifications, Jumpers and Bypasses; and Training.

In the area of Test Program Administration, formal methods have been established for the test organization to receive jurisdiction over systems, components, and instrumentation, before these items are begun to be tested. Formal administrative measures have been established for administrative control of system, components or instrumentation status

before, during and subsequent to testing. Formal methods and measures have also been established for governing the control of testing, controlling scheduling of test activities and evaluating test results. These controls, methods and measures are included in the Startup Manual (SUM) Chapters 7, 9, 12A, 12C and 13.

Written administrative controls have also been established for controlling temporary modifications, jumpers and bypasses. A formal log is maintained on the status of jumpers, etc. and is under the responsibility of the test supervisor. The color purple is used as a means of readily identifying temporary jumper physical appearance. Controls have been established for assigning responsibility for determining when independent verification is required during installation or removal of temporary bypasses on fluid system modifications. Controls also assign responsibility for determining when functional testing is required for installation or removal of jumpers, lifted leads or fluid system modifications. Temporary Modification Control is covered by Chapter 10 of the Vogtle Unit 2 SUM.

Training requirements have been established in the SUM for all personnel involved in test procedure preoperation, test procedure approval, test performance and documentation, and test results review and approval. The required training includes administrative controls for testing, QA/QC for testing, and technical objectives. Individual certification is required and is kept on file. Initial Test Program certification is controlled by the Vogtle Unit 2 SUM Chapter 24. The certification records of three individuals involved in the test program were reviewed and found to be satisfactory.

No violation or deviations were observed in this area.

6. Test Procedure Review (70300, 70336)

Preoperational Test Procedure 2-3BC-01, Residual Heat Removal (RHR) System, was reviewed. The procedure meets Final Safety Analysis Report (FSAR) requirements, stated in Chapter 14, that are within the scope of this test. The procedure had proper management review and approval and the test objectives were clearly stated. Pertinent prerequisites and required plant systems were identified, calibration checks were completed and test equipment was specified. Acceptance criteria against which the test will be judged are clearly identified, although a large number of complicated calculations are required to be made after testing data is obtained. The procedure does require comparison of results with acceptance criteria. Even though some graphical acceptance criteria is provided, the graph used was not logically graduated and therefore, not easily useable; in the attachments, a change in 50 psi is graduated in six increments, a change in 1000 psi in 35 increments and a change in 300 GPM in four increments, making plotting of intermediate values difficult.

Furthermore, even though the pump curves used in the test are those provided by the vendor, and apparently correct for the pump installed, it was also observed that the curve provided in the FSAR in Figure 5.4.7-3, as the

RHR pump curve does not adequately represent the actual pump curve as shown in the test procedure.

Initial test conditions were specified, these included valve lineups, electrical power and control requirements, and temporary installations. The procedure included references to FSAR sections, drawings and specifications. Step by step instructions appeared to be complete to the extent necessary to assure that test objectives are met. Provisions are available for documenting all items are verified as having been performed. Provisions are also made for recording details of the conduct of the test. The procedure recognizes restoration of temporary jumpers and provides for the identification of personnel conducting the testing and evaluating the test data. The procedure also provides for independent verification of critical steps.

7. Test Procedure Witnessing (70312, 70436)

During the inspection, Section C.19 of Preoperational Test Procedure 2-3BC-01, RHR System, was witnessed by the inspector. The procedure had been reviewed earlier as discussed in Paragraph 6 above. Section 6.19 of the procedure was titled "Train A RHR Pump (P6-001) and System Performance Verification and Cold Leg Recirculation". The testing witnessed was conducted in accordance with the approved procedures. The test results that were obtained, that could be independently verified, were found to be acceptable. The pump flows and valve timing test data which were reviewed met the acceptance criteria provided.

Test prerequisites sampled were verified to be met and proper plant systems were in service. As discussed in Paragraph 5, training records of three selected test personnel were reviewed and found to include training in administrative controls for testing, QA/QC indoctrination, and technical training. Approved procedures were available to personnel conducting the test. A test log was utilized by the test supervisor to document test interruptions and changes to the procedures, but it was observed that the log entries did not provide any detail into the numerous delays encountered during the test.

A number of the delays observed could have been avoided or minimized. During the course of performing Section 6.19, three change requests needed to be written. One involved flow path isolation and the other two involved proper valve position sequencing due to logic requirements. One other delay involved a concern over installation of test equipment. Mechanics were called to check the equipment installation. Arrangements to have an electrician available during the test for test jumper installation, appeared not to have been made, and could have caused a delay, but did not only due to the chance availability of a nearby electrician. One other delay was caused by a problem which developed on a system which was needed to support Procedure 2-3BC-01. The support system was allowed to be worked on and the occurrence of that problem caused a delay in continuing 2-3BC-01. The problem was eventually corrected and the test completed.

Although none of these problems would have had any safety significance during the test, they did cause unnecessary delays and required additional effort diverted from the main objective of performing the test. It was also noted however, that all of the situations were handled professionally, and were adequately resolved, and lead to the satisfactory completion of the test.

Crew actions were correct and timely during the performance of the test, and adequate coordination existed among crew members to conduct the test properly. Data was collected by the proper personnel. Test results indicated that the portion of the test observed was performed correctly and, pending further computations required in the procedure itself, the test acceptance criteria appears as though they would be met.

No violation or deviation were observed in this area.

8. Licensee Action In Previously Identified Inspection Findings (92701)

(Closed) Inspector Followup Item 425/88-15-02

Followup of compliance of resolution of findings 2RR-03A-005 in Section 6 of Readiness Review Module 03A, to meet FSAR requirements 14.2.8.1.57 regarding air dryer dewpoint capability.

The licensee had provided a commitment to revise Section 9.3.1 of the FSAR to make it consistent with ANSI/ASI standards and with the system design criteria. This will therefore change the Chapter 14 testing requirements, allowing the test procedure to be consistent with the FSAR.