



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

Report No.: 50-424/88-15

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

Docket No.: 50-424

License No.: NPF-68

Facility Name: Vogtle 1

Inspection Conducted: February 27 - March 25, 1988

Inspectors:	<u>Charles A. Patten</u>	<u>4/8/88</u>
for	J. F. Rogge, Senior Resident Inspector	Date Signed
	<u>Charles A. Patten</u>	<u>4/8/88</u>
for	C. W. Burger, Resident Inspector	Date Signed
Approved By:	<u>M. V. Sinkule</u>	<u>4/11/88</u>
	M. V. Sinkule, Section Chief	Date Signed
	Division of Reactor Projects	

SUMMARY

Scope: This routine, unannounced inspection entailed resident inspection in the following areas: plant operations, radiological controls, maintenance, surveillance, fire protection, security, and quality programs and administrative controls affecting quality.

Results: No violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *G. Bockhold, Jr., General Manager Nuclear Operations
- R. M. Bellamy, Plant Manager
- *T. V. Greene, Plant Support Manager
- *J. E. Swartzwelder, Nuclear Safety & Compliance Manager

- *W. F. Kitchens, Manager Operations
- M. A. Griffis, Maintenance Superintendent
- C. C. Echert, Manager Chemistry and Health Physics
- *A. L. Mosbaugh, Assistant Plant Support Manager
- H. M. Handfinger, Assistant Plant Support Manager
- F. R. Timmons, Nuclear Security Manager
- R. E. Lide, Engineering Support Supervisor
- H. Varnadoe, Plant Engineering Supervisor
- R. E. Spinnatu, ISEG Supervisor
- *E. M. Dannemiller, Technical Assistant to General Manager
- C. W. Hayes, Vogtle Quality Assurance Manager
- G. R. Frederick, Quality Assurance Site Manager - Operations
- W. E. Mundy, Quality Assurance Audit Supervisor
- R. M. Odom, Plant Engineering Supervisor
- *K. Pointer, Regulatory Specialist
- S. F. Goff, Regulatory Specialist

Other licensee employees contacted included craftsmen, technicians, supervision, engineers, operations, maintenance, chemistry, QC inspectors, and office personnel.

*Attended Exit Interview

2. Exit Interviews - (30703)

The inspection scope and findings were summarized on March 25, 1988, with those persons indicated in paragraph 1 above. The inspector described the areas inspected and discussed in detail the inspection results. 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 inspector during this inspection. Region based NRC exit interviews were attended during the inspection period by a resident inspector. This inspection closed five Violations, one Unresolved Item, four Inspector Followup Items (IFI), and eight Licensee Event Reports. One Licensee Identified Violation (LIV) was identified in paragraph 5(g).

One item in the area of flood protection was identified as follows:

IFI 50-424/88-15-01 "Review Maintenance Program For Flood Level Switches And Watertight Doors To Verify Component Operability" - Paragraph 7.

3. Licensee Action on Previous Enforcement Matters - (92702)

- a. (Closed) Violation 50-424/87-12-02 "Failure To Establish An Adequate Program For The Collection And Evaluation Of The Collection And Evaluation Of Transient Or Operating Cycles." This item concerned the development of an adequate program to meet the requirements of the Technical Specification 5.7. Corrective action consisted of working with Westinghouse to further designate the key parameters which should be recorded to perform stress and fatigue evaluations. The inspector reviewed the proprietary material provided by Westinghouse and Revision 1 of procedure 50040-C. The inspector determined the corrective actions as designated in the licensee response letter dated May 1, 1987, have been accomplished.
- b. (Closed) Violation 50-424/87-27-01 "Failure To Place The Turbine Driven Auxiliary Feedwater Pump In Standby Readiness." The corrective actions were verified complete. In addition, a June 3, 1987 report of valve mispositioning was reviewed.
- c. (Closed) Violation 50-424/87-31-01 "Inadequate Work Instructions/ Procedures For Emergency MSIV Work." Corrective actions for this event were described in LER 87-27. Procedure 350-C was revised to clarify urgent and emergency work requests. Procedure 26854-C was revised to include cautions for performing MSIV work with the valves open.
- d. (Closed) Violation 50-424/87-31-02 "Failure To Declare Both RHR Trains Inoperable And Comply With Technical Specification 3.5.2" and violation 50-424/87-37-01 "Failure To Place The Unit In Hot Standby Within six Hours Per Action 10 Of TS 3.3.1." These two violations resulted in a civil penalty. The inspector reviewed the GPC response dated October 5, 1987, and determined that the response was consistent with the corrective actions taken at the time of the event. The inspector has no further questions regarding this event.

4. Operational Safety Verification - (71707)

The plant began this inspection period in Power Operation (Mode 1) and remained in this Mode throughout the period.

a. Control Room Activities

Control Room tours and observations were performed to verify that facility operations were being safely conducted within regulatory requirements. These inspections consisted of one or more of the following attributes as appropriate at the time of the inspection.

- Proper Control Room staffing
- Control Room access and operator behavior
- Adherence to approved procedures for activities in progress
- Adherence to Technical Specification (TS) Limiting Conditions for Operations (LCO)
- Observance of instruments and recorder traces of safety related and important to safety systems for abnormalities
- Review of annunciators alarmed and action in progress to correct
- Control Board walkdowns
- Safety parameter display and the plant safety monitoring system operability status
- Discussions and interviews with the On-Shift Operations Supervisor, Shift Supervisor, Reactor Operators, and the Shift Technical Advisor to determine the plant status, plans and to assess operator knowledge
- Review of the operator logs, unit log and shift turnover sheets

No violations or deviations were identified.

b. Facility Activities

Facility tours and observations were performed to assess the effectiveness of the administrative controls established by direct observation of plant activities, interviews and discussions with licensee personnel, independent verification of safety systems status and LCOs, licensee meetings and facility records. During these inspections the following objectives are achieved:

- (1) Safety System Status (71710) - Confirmation of system operability was obtained by verification that flowpath valve alignment, control and power supply alignments, component conditions, and support systems for the accessible portions of the ESF trains were proper. The inaccessible portions are confirmed as availability permits. Additional indepth inspection of the remote shutdown capability was performed to review the system response procedure with the plant drawings and as-built configurations, compare valve remote and local indications, and electrical equipment interiors. A walkthrough using three licensed operators was performed to demonstrate that the procedure could be executed in a timely manner.

- (2) Plant Housekeeping Conditions - Storage of material and components and cleanliness conditions of various areas throughout the facility were observed to determine whether safety and/or fire hazards existed.
- (3) Fire Protection - Fire protection activities, staffing and equipment were observed to verify that fire brigade staffing was appropriate and that fire alarms, extinguishing equipment, actuating controls, fire fighting equipment, emergency equipment, and fire barriers were operable.
- (4) Radiation Protection (71709) - Radiation protection activities, staffing and equipment were observed to verify proper program implementation. The inspection included review of the plant program effectiveness. Radiation work permits and personnel compliance were reviewed during the daily plant tours. Radiation Control Areas (RCAs) were observed to verify proper identification and implementation.
- (5) Security (71881) - Security controls were observed to verify that security barriers were intact, guard forces were on duty, and access to the Protected Area was controlled in accordance with the facility security plan. Personnel were observed to verify proper display of badges and that personnel requiring escort were properly escorted. Personnel within Vital Areas were observed to ensure proper authorization for the area. Equipment operability or proper compensatory activities were verified on a periodic basis.
- (6) Surveillance (61726)(61700) - Surveillance tests were observed to verify that approved procedures were being used; qualified personnel were conducting the tests; tests were adequate to verify equipment operability; calibrated equipment was utilized; and TS requirements were followed. The inspectors observed portions of the following surveillances and reviewed completed data against acceptance criteria:

<u>Surveillance No.</u>	<u>Title</u>
14410-1	Control Rod Operability Test
14980-1	Diesel Generator Operability Test
14825-1	Quarterly Inservice Valve Test
55003-C	Incore/Excore Detector Calibration
14000-1	Operations Shifts and Daily Surveillance Logs
14225-1	Operations Weekly Surveillance Logs

- (7) Maintenance Activities (62703) - The inspector observed maintenance activities to verify that correct equipment clearances were in effect; work requests and fire prevention work permits, as required, were issued and being followed; quality control personnel were available for inspection activities as required; retesting and return of systems to service was prompt and correct; TS requirements were being followed. Maintenance Work Order backlog was reviewed.

5. Review of Licensee Reports (90712)(90713)(92700)

a. In-Office Review of Periodic and Special Reports

This inspection consisted of reviewing the below listed reports to determine whether the information reported by the licensee was technically adequate and consistent with the inspector knowledge of the material contained within the report. Selected material within the report was questioned randomly to verify accuracy and to provide a reasonable assurance that other NRC personnel have an appropriate document for their activities.

Monthly Operating Report - The report dated March 10, 1988, was reviewed. The inspector had no comments.

Annual Reports for 1987 - The report dated February 29, 1988, was reviewed. This report was submitted pursuant to TS 6.8.1.2.

Radial Peaking Factor Limit Report - The report dated March 9, 1988, was reviewed. The inspector verified the presence of the report was in the Control Room.

b. Licensee Event Reports and Deficiency Cards

Licensee Event Reports (LER) and Deficiency Cards (DC) were reviewed for potential generic impact, to detect trends, and to determine whether corrective actions appeared appropriate. Events which were reported pursuant to 10 CFR 50.72, were reviewed as they occurred to determine if the technical specifications and other regulatory requirements were satisfied. In-office review of LERs may result in further followup to verify that the stated corrective actions have been completed, or to identify violations in addition to those described in the LER. Each LER is reviewed for enforcement action in accordance with 10 CFR Part 2, Appendix C. Review of DCs was performed to maintain a realtime status of deficiencies, determine regulatory compliance, follow the licensee corrective actions, and assist as a basis for closure of the LER when reviewed. Due to the

numerous DCs processed only those DCs which result in enforcement action or further inspector followup with the licensee at the end of the inspection are listed below. The LERs and DCs denoted with an asterisk indicates that reactive inspection occurred at the time of the event prior to receipt of the written report.

(1) Deficiency Card reviews:

*DC 1-88-595 "Failure To Perform Time Response Of Transmitters." On March 1, 1988, the licensee identified that transmitters 1 LT-0527 and 1 PT-0458 had not been response time tested. The response times were obtained and found to be within tolerance. This item will receive additional review when submitted as an LER pursuant to 10 CFR 50.73 (a)(2)(i)(B).

DC 1-88-588 "Failure To Install Matched Parts." On February 29, 1988, the licensee identified that during the repair of IFI0021, that only one of two calibrated and matched parts was installed. The meter section was installed without the new transmitter. Investigation revealed that due to separate packing of the two sections that the maintenance personnel were not issued both parts. This item will receive additional review when submitted as an LER pursuant to 10 CFR 50.73 (a)(2)(i)(B).

(2) The following LERs were reviewed and are ready for closure pending verification that the licensee's stated corrective actions have been completed.

(a) 50-424/87-72, Rev 1 "Inadequate Training Causes A Surveillance To Be Improperly Performed." This LER was reviewed in NRC Rpt. 50-424/88-09 and a Licensee Identified Violation was identified. This LER reported the results of the corrective action conducted to determine if earlier events of this type had occurred. The licensee concluded that a similar event had occurred on March 19, 1987. This LER remains open pending completion of simulator upgrading.

(3) The following LERs were reviewed and closed.

(a) 50-424/87-22, Rev. 0 and 1 "Containment Ventilation Isolation Caused By Radiation Monitor Loss Of Power." On May 3, 1987, a Plant Equipment Operator opened the breaker providing power to Radiation monitor 1RE-2565. Upon re-energization, a CVI was received. Following the actuation, the licensee identified that five "A" train components associated with relay K528 failed to respond correctly. Subsequent testing and two additional actuations since the event have not identified the source of failure. The licensee attributes the failure to have been random. The inspector has no further questions.

- (b) *50-424/87-45, Rev. 0 "Centrifugal Charging Pumps Removed From Service Due To Personnel Error." On July 2, 1987, while performing preventive maintenance on the "A" centrifugal charging pump, the cooling water to the "B" charging pump was erroneously isolated. The "B" pump ran for approximately 2 hours and 44 minutes prior to being secured. The isolation of cooling water was intended for the "A" pump, but personnel preparing the clearance utilized the "B" train valve numbers. Upon discovery of the potential damage to the "B" pump, the plant personnel restored the "A" train pump to service within 52 minutes. The positive displacement pump was utilized to provide charging flow until the "A" train pump was in service. Numerous tests were performed on the "B" train pump to demonstrate that no damage had resulted. The inspector reviewed the results of this test data to verify that the "B" train pump was operable.
- (c) 50-424/87-63, Rev. 0 "Reactor Trip Following Turbine Trip Caused By Vibration Monitor Cable Movement." This LER was reviewed in NRC RPT. 50-424/87-70. Procedure change to 13800-1 "Main Turbine Operations" and 00350-C "Maintenance Program" were verified complete. Labels have been installed to inform workers to contact the Control Room prior to performing work near the Turbine Protection Circuitry. These labels are considered the permanent labels, however, more durable metal labels are on order. Corrective actions regarding a design change to the Advanced Turbine Supervisory Instrumentation (ATSI) and the plant management evaluations will not result in changes.
- (d) 50-424/87-71, Rev. 1 "Miscommunication Causes Inadequate Analysis Of Unit 1 Diesel Fuel Oil." This LER was reviewed in NRC Rpt. 50-424/88-09 and LIV 50-424/88-09-01 was identified. Procedure 30080-C Rev 11, was reviewed to verify implementation of the procedure change.
- (e) *50-424/88-03, Rev. 0 "Personnel Error Causes A High Steam Generator Water Level And An ESF Actuation." On February 1, 1988, at 8:29 a.m., a feedwater isolation actuation occurred due to a high-high level in steam generator No. 1. The unit was in Mode 4 with the reactor coolant temperature at approximately 323 degrees F and the condensate and main feedwater system aligned for long cycle recirculation. One condensate pump was running and the Bypass Feedwater Regulating Valves (BFRVs) were open. Maintenance personnel were troubleshooting a problem with the nitrogen accumulator for the steam generator No. 1 Main

Feedwater Isolation Valve (MFIV) and requested that the MFIV be stroked. The Balance Of Plant Operator opened the MFIV and the level in steam generator No. 1 rapidly increased from 57% to the High-High level setpoint (78%) initiating a feedwater isolation signal which closed the MFIV and the BFRVs. The corrective actions have been completed.

- (f) 50-424/88-04, Rev. 0 "Containment Hydrogen Level Indication Inoperable Due To Personnel Error." On February 1, 1988, at approximately 12:30 p.m. with the Unit in Mode 4, an instrument and control technician discovered that the channel B containment hydrogen monitor control room indication and alarm was inoperable. Further investigation revealed that the channel B control room hydrogen indication and high hydrogen alarm had been inoperable for approximately 31 days and exceeded the associated Technical Specification action statement requirements. A violation was issued regarding this LER in NRC Rpt. 50-424/88-09. The procedure revisions were verified complete by the inspector.
- (g) 50-424/88-05, Rev. 0 "Personnel Error Leads To Exceeding Technical Specification Time Interval For An Action Requirement." On February 2, 1988, at 6:15 p.m., it was discovered that a required grab sample for the control building sump effluent discharge had not been performed. The sample was required at least once per 12 hours by Technical Specification when the effluent monitor (IRE-17646) was declared inoperable on November 5, 1987. The samples had been taken on a 12 hour basis until February 2, 1988, when a sample had been scheduled for 2:30 p.m. After it was discovered that a sample had been missed, a sample was taken at 7:50 p.m. and no radioactivity was found. In addition, the LER notes that a sample for the turbine building drain liquid effluent discharge was taken at 5:30 p.m. and no activity was found. Since the turbine building drain discharge enters the drain system downstream of the control building sump discharge, this sample could also meet the sampling requirement for RE-17646. The inspector has no further questions regarding this item. This item represents a violation of NRC requirements where the licensee has met the criteria for no citation. To track this item, the following is identified:

LIV 50-424/88-15-01 "Failure To Comply with TS 3.3.3.9 Radioactive Liquid Effluent Monitoring Instrumentation - LER 88-05"

(h) *50-424/88-06, Rev. 0 "Reactor Trip Which Resulted From A Generator Field Ground Caused By A Personnel Error." On February 15, 1988, the reactor tripped from 100 percent of rated thermal power when the turbine tripped. The turbine trip was due to the improper taking of vibration readings. This event was reviewed at the time of occurrence and the inspector has no further questions regarding this event.

6. Followup on Previous Inspection Items - (92701)

- a. (Closed) URI 50-424/86-99-01 "Natural Circulation Test." This item concerned the issue of when the test should be performed (e.g. low power or high power). The issue was resolved prior to the issuance of the operating license to allow the test to be performed at high power. The inspector witnessed the performance of the test.
- b. (Closed) IFI 50-424/86-99-02 "Refueling Canal Boron Concentration." This item was resolved by a TS change to the NPF-61 license. During the initial fuel load, the licensee was not required to sample the refuel canal.
- c. (Open) IFI 50-424/86-111-02 "Review Plant Review Board Procedure For Proper Incorporation Of Technical Specifications." Procedure 00002-C, Revision 7 was reviewed and inspector concerns regarding consistency with Technical Specifications have been resolved. However, FSAR changes remain pending. FSAR change No. 35 is expected to contain the necessary revisions.
- d. (Closed) IFI 50-424/87-12-05 "Review Corrective Action Due To Use Of Inadequate Procedure No. 22220-C." This item was identified to follow recalibration of instruments with a correct procedure. MWOs 1806183 and 18706272 were completed to calibrate the following controllers: 1-PC-15250, 1-PC-5238, 1-PC-5239, 1-PC-5241, 1-PC-10271, 1-PC-3556, 1-PC-6160, 1-PC-6205, 1-PC-5814, 1-PC-4446, and 1-PC-5759.
- e. (Closed) IFI 50-424/87-12-07 "Review Licensee's Investigation Results Of CVI Reset Capability For Containment Post - LOCA Purge Isolation Valves." This item concerned the capability to open the isolation valves with high radiation conditions present. The inspector reviewed a special test, T-ENG-87-15 Rev. 1, which tested the capability to open HV-262413 under high radiation conditions. The test demonstrated that the retentive memory allows for valve opening with a reset CVI.
- f. (Open) IFI 50-424/87-44-03 "Review Licensee Procedure And FSAR Changes Regarding The Fire Protection Program." The inspector reviewed procedure 92035-C, "Fire Protection Operability Requirements" and determined that appropriate changes were incorporated. Changes to the FSAR remain pending.

7. Inspection Of Licensee's Actions Taken To Implement NRC Guidelines For Protection From Flooding Of Equipment Important To Safety (TI 2515/88)

This inspection was performed to verify that equipment important to safety will not be damaged by flooding caused by the rupture of a non-class I system component or pipe to the extent that engineered safety features will not perform their design functions. This inspection was accomplished by reviewing the applicable documents such as the FSAR, SER, and the Bechtel Design Bases and conducting a plant tour specific to the features of flood protection.

Documents Reviewed

FSAR Sections 3.4.1, 3.6.1, 3.6.2, 3F, 9.3.3
 SER Sections 3.4.1, 3.6.1, 3.6.2, 9.3.3
 SER Supplement 4 Section 3.4.1, 3.6.2
 Design Criteria - 1001 "Separation Criteria"
 Design Criteria - 1003 "Flooding Criteria"
 Design Criteria - 1001-A "Penetrations"
 Design Criteria - 2505 "Watertight Doors"
 Design Criteria - 1218 "Auxiliary Building Flood Retaining Rooms, Alarms and Drains"
 Design Criteria - 1619 "Annunciator System"
 Penetration Seal Drawing
 Auxiliary Building Drains & Alarms P & ID
 Watertight Door Drawings
 Calculation Sheet For The CCW Pump Room, Train "A"
 Response Procedure - 17061-1

Design Review

The overall design features for protection from flooding were reviewed. The design utilizes watertight doors, compartmentalization, drains system, and level alarms as the main features to mitigate the effects from flooding.

Facility Tour

The inspector performed a tour of the Auxiliary Building, Control Building, Auxiliary Feedwater Building, and Diesel Generator Building. These tours focused on verifying the room configuration with respect to flood protection features (e.g. access doors, alarms, curbing, drains, and equipment location).

Administrative Controls

Flooding response procedure 17061-1 was reviewed. Maintenance regarding surveillance of the flood level switch and watertight doors could not be determined. Daily checks of the watertight doors are contained as part of the operator rounds. Review of the maintenance

procedures for the flood level switches and watertight doors will be tracked as an IFI - 50-424/88-15-01 "Review Maintenance Program For Flood Level Switches And Watertight Doors To Verify Component Operability."

Conclusion

Based upon the above review, the inspector determined that the licensee has implemented measures to mitigate the effects of flooding from non class I systems; except for the area of maintenance as indicated above.