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

Report No.: 50-424/87-71

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

Docket No.: 50-424 License No.: NPF-61

Facility Name: Vogtle 1

Inspection Conducted: December 8-11, 1987

Inspector: G. R. Wiseman 1/27/88
G. R. Wiseman Date Signed

Accompanying Personnel: D. C. Ward

Approved by: T. E. Conlon 1-28-88
T. E. Conlon, Section Chief Date Signed
Engineering Branch
Division of Reactor Safety

SUMMARY

Scope: This routine, unannounced inspection was in the areas of Fire Protection/Prevention and follow-up on previously identified inspection items.

Results: Three violations were identified: Failure to Properly Document Onshift Plant Operations and Fire Brigade Assignments - Paragraph 5.c.(1); Failure to Maintain Fully Qualified Five-Man Fire Brigade on Site at All Times - Paragraph 5.c.(1); and Inability to Implement Alternate Remote Shutdown While Simultaneously Combatting the Fire for Control Room Fire - Paragraph 5.c.(1)

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REPORT DETAILS

1. Persons Contacted

Licensee Employees

*J. Aufdenkampe, Engineering Superintendent
*R. Bellamy, Plant Manager
*G. Bockhold, General Manager
*P. Cail, Senior Methods and Training Specialist
C. Cross, Sr. Regulatory Spec.
*E. Eckert, Technical Assistant to Plant Manager
*S. Ewald, Manager, Health Physics/Chemistry
*D. Hallman, Chemical Superintendent
*T. Harkins, Engineer
*A. Mosbaugh, Assistant Plant Support Manager
*W. Mundy, Training Manager
*R. Odona, Plant Engineering Superintendent
*D. Smith, Construction Engineer
*R. Spinnato, ISEG Superintendent
*R. Sprankle, Senior Engineer, FPE
*J. Swartzwelder, Manager, NSAC
*M. Varnadoe, Plant Engineering Superintendent

Other licensee employees contacted included construction craftsmen, engineers, technicians, operators, mechanics, security force members, and office personnel.

Other Organizations

*G. Jones, Utility Support Corporation
*G. VanGelder, General Physics Corporation

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on December 11, 1987, 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:

a. Inspector Follow-up Item (424/87-71-01) - 18 Month Fire Pump Surveillance Does Not Include Recording Driver Speed as Required by NFPA 20, Paragraph 5.b.

b. Violation Item (424/87-71-02) - Failure to Properly Document On Shift Plant Operations and Fire Brigade Assignments - Paragraph 5.c.(1).

c. Violation Item (424/87-71-03) - Failure to Maintain Fully Qualified Five-Man Fire Brigade On Site At all Time - Paragraph 5.c.(1).

d. Violation Item (424/87-71-04) - Inability to Implement Alternate Remote Shutdown While Simultaneously Combatting the Fire for a Control Room Fire - Pargaraph 5.c.(1)

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

a. (Closed) Violation (424/87-02-02): Failure to Properly Implement the Fire Protection Evaluation for Maintenance Work Orders Involving the Removal of Radiant Energy Shields for Instruments PT-403 and LT-459: The licensee's response (Letter SL-2127) of March 13, 1987, to this violation and the following corrective actions were reviewed and found to be acceptable:

(1) Maintenance Work Order Nos. 18624488 (ILT-0459) and 18700599 (IPT-403) were initiated to restore the radiant energy shields on the affected transmitters. This work was completed in January 1987.

(2) Procedure 92026-C, Fire Protection Work Evaluation, was revised to include explicit instructions for identifying those safe shutdown components provided with radiant energy shields.

b. (Closed) Violation (424/87-19-03): Failure to Implement Fire Protection Procedures: The licensee's response (Letter SL-2299) of April 27, 1987, to this violation and the following corrective actions were reviewed and found to be acceptable:

(1) A memo was issued by the Plant Manager on March 6, 1987, to all personnel entering the protected area, which emphasized the smoking, eating, and drinking policy.

(2) Procedure 92010-C (Revision 3) was revised to establish a five-day timeframe for required corrective actions from identified housekeeping discrepancies.

(3) Procedure 00253-C (Revision 3) was revised to clarify the plant smoking, eating and drinking policy.

In addition, a meeting was held between the Manager, General Support and Site Fire Protection Engineers to coordinate assignment of responsibilities to correct any identified housekeeping discrepancies. This action has demonstrated a marked improvement in timely correction of discrepancies identified by the licensee's weekly housekeeping inspections.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Fire Protection/Prevention Program (64704)

a. Fire Prevention/Administrative Control Procedures

The inspectors reviewed the following Fire Prevention/Administrative Procedures:

Procedure No.	Title
00705-C (Rev. 2)	Fire Protection Training Program
10001-C (Rev. 4)	Log Keeping
10003-C (Rev. 5)	Manning the Shift
92000-C (Rev. 3T)	Fire Protection Program
92010-C (Rev. 3)	Weekly Fire Inspection
92015-C (Rev. 1)	Control of Transient Combustibles
92020-C (Rev. 2)	Control of Ignition Sources

Except as noted in Paragraph 5.c.(1), it appears that the above procedures meet the NRC guidelines of NUREG-0800, Section 9.5.1, "Standard Review Plan - Fire Protection Program", and the licensee's commitments in Section 9B of the Vogtle FSAR.

b. Fire Protection Surveillance Procedures

The inspectors reviewed the following Fire Protection System Surveillance Procedures:

Procedure No.	Title
92405-C (Rev. 4)	Fire Brigade Equipment Monthly Inspection
92410-C (Rev. 1)	Fire Suppression System Quarterly Main Drain Test
92422-C (Rev. 2)	Halon System Semiannual Pressure and Weight Verification
92424-C (Rev. 7T)	Fire Door Semiannual Inspection
92430-C (Rev. 3)	Normally Accessible Fire Suppression System Valves Annual Cycle and Lubrication

The above surveillance procedures were reviewed to determine if the various test outlines and inspection instructions adequately implement the surveillance requirements of the plant's Fire Protection Technical Specifications. In addition, these procedures were reviewed to determine if the inspection and test instructions followed general industry fire protection practices, NRC fire protection program guidelines and the guidelines of the National Fire Protection Association (NFPA) Fire Codes. Based on this review, it appears that the above procedures are satisfactory, except Procedure 92437-C. This procedure tests the three fire pumps at no flow, 100% of rated flow, and 150% of rated flow to determine pump performance compared to the initial acceptance test. The test is required by NFPA Std. 20, Centrifugal Fire Pumps, Section 11-3 to determine the pumps' ability to continue to attain satisfactory performance. In Appendix A of NPFA 20, the test data required to satisfy this requirement is identified. The test data required includes pump driver speed. Procedure 92437-C does not include recording the pump driver speed. This is identified as Inspector Follow-up Item 424/87-71-01, 18 Month Fire Pump Surveillance Does Not Include Recording Driver Speed as Required by NPFA 20.

c. Alternate Remote Shutdown/Fire Brigade

(1) Manning

During the week prior to and subsequent to this inspection, a NRC QA team inspection (Report No. 50-424/87-69) was conducted at the Vogtle Plant. During the course of this QA inspection discrepancies were noted in the areas of fire brigade manning and alternate shutdown capability which substantiated or were in addition to the findings of this routine fire protection inspection. In order to avoid duplication, the findings of the QA inspection as they relate to fire brigade manning and alternate shutdown capability are contained in this report.

A review of the Shift Supervisors log entries for the period from 1/16/87 to 11/30/87 revealed the following discrepancies:

- Procedure 10001C, Section 2.2.1, requires each member of the shift's operating staff to be logged and their assignments documented. Section 2.1.2 of this procedure also requires the Shift Supervisors log to be complete. On at least 50 shift periods the Shift Supervisors Log was found to be incomplete in that personnel were not assigned in the log to positions required for the minimum operating staffing requirements and fire brigade staffing requirements of the Technical Specifications.

  This is identified as Violation Item 424/87-71-02, Failure to Properly Document On Shift Plant Operations and Fire Brigade Assignments.

- FSAR Section 9.5.1.5.3 states, inpart, "fire team manning requirements will be met without impacting the minimum onshift operating staff requirements as described in the VEGP Technical Specifications." However on numerous occasions during this period shift personnel were assigned collateral duties as part of the onshift operating staff and onshift fire brigade in the Shift Supervisors Log. These collateral duties are contradictory during a fire emergency. For example, on one occasion the shift supervisor was also assigned fire brigade leader duty. In an emergency involving a control room fire resulting in the evacuation of the control room, the shift supervisor would be responsible for coordinating fire fighting activities in the control room while also being required to oversee the plants shutdown from the alternate remote shutdown panels. Concurrent fulfillment of the responsibilities of these two duties by one individual is not considered physically possible.

  A licensee representative acknowledged their failure to maintain the Shift Supervisors Log accurately and stated that they were unaware of this FSAR commitment to man the fire brigade exclusive of the Technical Specification (TS) minimum shift compliment. The licensee stated further that although not properly documented in the log, they had performed an evaluation which proved that in most cases, the fire brigade could have been manned exclusive of the minimum shift compliment. The licensee's evaluation was performed using attendance records to establish all available personnel on each shift. These personnel were then assigned positions on the minimum shift compliment and fire brigade in the evaluation based on their qualifications. The licensee's evaluation revealed 25 cases where the fire brigade could not be manned exclusive of the minimum shift compliment. The inspector's review of the licensee's evaluation confirmed these findings. Of the 25 cases, 20 were the result of not having a qualified fire brigade leader, and 5 were the result of not having a qualified five-man brigade available onsite. This is identified as Violation Item 424/87-71-03, Failure to Maintain a Fully Qualified Five-Man Fire Brigade Onsite At All Times.

The staff subsequently reviewed the above findings in relation to the licensees ability to safely shutdown the plant in the event of a Control Room fire of a magnitude which would result in Control Room evacuation. Such an event would require the licensees personnel to shutdown the plant using the Alternate Remote Shutdown Panels as described in Abnormal Operating Procedure, AOP 18038-1 and simultaneously undertake fire fighting activities. Abnormal Operating Procedure 18038-1 has

designated duties for six trained personnel from the onshift compliment. During plant startup testing, the licensee on April 8 and April 14, 1987 successfully demonstrated operations from the remote shutdown panels utilizing the actions of six personnel (minimum shift crew) and procedure 18038-1. This procedure has never been successfully implemented with less than 6 trained personnel. Based on the above it was determined that concurrent fulfillment of the duties of both operations from the remote shutdown panels and fire brigade firefighting is not considered physically possible on those occassions when members of the Technical Specification minimum onshift compliment were assiged collateral duties as fire brigade members. The failure of the licensee to properly assign shift personnel specific duties and the fact that in many cases personnel were assigned collateral duties brings the staff to the conclusion that a great deal of confusion would have existed if such a fire event had occurred. The confusion over personnel responsibilities would have resulted in significant delay or inability of the licensee's staff to implement the actions required by Procedure 18038-1 to safely accomplish shutdown of the reactor and simultaneously combat the fire. This is identified as Violation Item 50-424/87-71-04, Inability to Implement Alternate Remote Shutdown While Simultaneously Combating the Fire for Control Room Fire.

Prior to this inspection, the licensee had previously initiated immediate corrective action for the manning deficiencies through a letter order from the Plant Manager to ensure adequate shift manning to satisfy the Vogtle Licensee Condition and FSAR commitment. The inspector also verified that the licensee had initiated temporary procedure changes to 10003C, Manning the Shift, and 92000C, Fire Protection Program to incorporate the requirements of the Plant License Condition and FSAR commitment to man the fire brigade exclusive of the TS minimum shift compliment. In addition, the inspector attended a shift turnover meeting to ensure these corrective actions were being adequately implemented. The immediate corrective actions taken by the licensee appeared to be adequate.

(2) Fire Brigade Training

The inspector reviewed the training and drill records for five brigade leaders and seven brigade members for the fourth quarter 1986 and 1987 to date. The records reviewed indicated that each of these leaders and members had attended the required training and participated into the required number of drills. The inspector also verified that a fire brigade drill had been conducted quarterly for each shift for 1987. The fire brigade training records which were inspected were found satisfactory.

In addition, the inspector reviewed the licensee's initial fire brigade training program initiated in 1987 to verify that the following training topics are being covered:

- Indoctrination of the plant fire fighting plan with specific identification of each individual's responsibilities.

- Identification of the type and location of fire hazards and associated types of fires that could occur in the plant.

- The toxic and corrosive characteristics of expected products of combustion.

- Identification of the location of fire fighting equipment for each fire area and familiarization with the layout of the plant, including access and egress routes to each area.

- The proper use of available fire fighting equipment and the correct method of fighting each type of fire. The types of fires should include fires in energized electrical equipment, fires in cables and cable trays, hydrogen fires, fires involving flammable and combustible liquids or hazardous process chemicals, fire resulting from construction or modifications (welding), and record file fires.

- The proper use of communication, lighting, ventilation and emergency breathing equipment.

- The proper method for fighting fires inside buildings and confined spaces.

- The direction and coordination of the fire fighting activities (fire brigade leaders only).

- Detailed review of fire fighting strategies and procedures.

- Review of the latest plant modifications and corresponding changes in fire fighting plans.

Based on this review, it appears that the licensee's initial fire brigade training program covers the above required training topics. In addition, it appears that the licensee's fire brigade training program repeats the basic fire fighting skills of the initial program to qualified fire brigade members every two years.

(3) Fire Brigade Drills

During this inspection, the inspector witnessed an unannounced fire brigade drill. The drill fire scenario was a diesel fuel oil fire in the Diesel Generator Building which was apparently caused by a broken flange downstream of the A train diesel day tank.

Nine fire brigade members responded to the pending fire emergency. Initially a "first responder" Plant Equipment Operator (PEO) reported outside the diesel generator building. This individual verified the fire emergency and reported initial information to the control room from a plant telephone in the redundant B train diesel generator room not involved in the fire. He then advanced a 2½ inch hose from an exterior fire hose house up to the exterior of the B train diesel generator room. The brigade assembled outside the Diesel Gererator Building in full protective fire fighting turnout clothing and self contained breathing apparatus. An initial size-up of the fire condition was made by the fire brigade leader and two 1½ inch fire attack hose lines were advanced into the room. The fire attack hose lines were placed in service on the fire and the fire was placed under control in 35 minutes. In addition, the fire brigade initiated fire victim search and rescue, smoke control, and water control operations.

The inspectors expressed the following comments concerning the drill exercise relative to fire brigade efficiency:

(a) The "first responder" PEO lacks backup radio communication capability. During a fire emergency the first responder must locate an operable telephone in an adjacent fire area to respond to the control room. This action may result in a time delay in activation of the fire brigade to the fire scene.

(b) The fire brigade is not provided manual fire fighting foam capability to efficiently fight a potential combustible liquids fire which might be encountered in the diesel generator building.

The licensee stated that they will take the comments under consideration. These will be reviewed during a future NRC inspection.

Other than noted above the fire brigade utilized proper manual firefighting methods and reacted to the fire drill scenario in an effective manner.

d. Plant Tour and Inspection of Fire Protection Equipment

(1) Outside Fire Protection Walkdown

The inspectors verified that the plant's two fire protection water storage tanks contained sufficient water to meet the operability requirements of the FSAR. The three fire pumps were inspected and found to be in service. The diesel fuel tanks for the diesel driven fire pumps were approximately 3/4 full of fuel which met the operability requirements of the FSAR.

The following sectional control valves in the outside fire protection water supply system were inspected and verified to be properly aligned and locked in position:

Valve	Description
TO4	Electric Fire Pump Suction Isolation
HV-7930	Fire Protection Water Tank Isolation
HV-7932	Fire Protection Water Tank Isolation
HV-7940	Diesel Fire Pump #2 Suction Isolation
014	Diesel Fire Pump #2 Discharge Isolation
112	Fire Loop Isolation
114	Diesel Generator Bldg. Isolation
616	Fire Loop Isolation
768	Fire Loop Isolation

The following fire hydrants and fire hydrant equipment houses were inspected:

FHH-500
FHH-501
FHH-587
FHH-589
FHH-590
FHH-591

The equipment houses contained the minimum equipment requirements of that specified by NFPA-24, Private Fire Service Mains and Their Appurtenances, and the FSAR commitments. The equipment appeared to be adequately maintained.

A tour of the exterior of the plant indicated that sufficient clearance was provided between permanent safety-related buildings and structure and temporary buildings, trailers, and other transient combustible materials. The general housekeeping of the areas adjacent to the permanent plant structures was satisfactory.

(2) Permanent Plant Fire Protection Features

A plant tour was made by the inspector. During the plant tour, the following safe shutdown related plant areas and their related fire protection features were inspected:

Auxiliary Feedwater Pump House
Control Building Levels A and 1 through 4
Diesel Generator Building

The fire/smoke detection systems, manual firefighting equipment (i.e., portable extinguishers, hose stations, etc.) and the fire area boundary walls, floors and ceiling associated for the above plant areas were inspected and verified to be in service or functional, except the preaction sprinkler system protecting the Train B motor driven auxiliary feedwater pump which was under "clearance."

The automatic sprinkler systems installed for Train A and C auxiliary feedwater pumps and the Halon fire suppression system installed in Train A and B remote shutdown panel rooms were inspected and found to be in service.

Based on this inspection, it appears that the fire protection features associated with the above plant areas are satisfactorily maintained.

The plant tour also verified the licensee's implementation of the fire prevention administrative procedures. The control of combustibles and flammable materials, liquids and gases, and the general housekeeping were found to be satisfactory in the areas inspected.

(3) NUREG-0800 Fire Protection Features

The inspector made a walkdown of the NUREG 0800 related sprinkler protection in the following plant areas:

Fire Area	Location
1-CB-L3-H	Level 3 Control Building
2-CB-L2-B	Level 2 Control Building
1-CB-L2-B	Level 2 Control Building
1-CB-L3-J	Level 3 Control Building
1-CB-L3-M	Level 3 Control Building

Based on this walkdown, the inspector determined that the sprinkler protection provided for the areas identified above provided sufficient protection with respect to controlling an exposure fire.

The following eight-hour emergency lighting units were inspected:

Unit No.	Location
29-1-1	Level A Control Building
29-1-3	Level A Control Building
29-1-4	Level A Control Building
36-18-4	Level 3 Control Building
42-11-1	Level 4 Control Building
42-11-3	Level 4 Control Building

These units were in service, lamps properly aligned and appeared to be properly maintained.

Except as noted above, within the areas inspected, no additional violations or deviations were identified.

6. Inspector Follow-up Items

(Closed) Inspector Follow-up Item (424/87-19-02) - Incorporate Inspection of Both Sides of Temporary Fire Barriers Between Unit 1 and Unit 2 Into Procedure 92445-C:

The licensee issued Maintenance Work Order (MWO) C8700200 to provide signs on the Unit 2 side of the temporary fire barriers for notification to plant management of any physical damage to the barrier walls. In addition, visual inspection of these walls was included in the licensee's weekly housekeeping inspection. The inspector verified that the signs were in place and the inspections were being conducted on a weekly basis. Based on these actions, this item is considered closed.