



UNITED STATES
NUCLEAR REGULATORY COMMISSION
 REGION II
 101 MARIETTA STREET, N.W., SUITE 2900
 ATLANTA, GEORGIA 30323-0199

Report Nos.: 50-424/95-27 and 50-425/95-27

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

Docket Nos.: 50-424 and 50-425

License Nos.: NPF-68 and NPF-81

Facility Name: Vogtle 1 and 2

Inspection Conducted: October 22 through November 18, 1995

Inspector:	<u>FOR</u> <u>R. W. Wright</u>	<u>12/1/95</u>
	C. R. Ogle, Senior Resident Inspector	Date Signed
	<u>FOR</u> <u>R. W. Wright</u>	<u>12/1/95</u>
	P. C. Hopkins, Resident Inspector	Date Signed
	<u>FOR</u> <u>R. W. Wright</u>	<u>12/1/95</u>
	M. T. Widmann, Resident Inspector	Date Signed

Approved by: P. H. Skinner 12/1/95
 P. H. Skinner, Chief
 Reactor Projects Branch 2
 Division of Reactor Projects
 Date Signed

SUMMARY

Scope: This routine inspection entailed inspection in the following areas: plant operations, surveillance, maintenance, onsite engineering, plant support, evaluation of licensee self-assessment capability, and follow-up. Backshift inspections were performed on October 24, 1995; and on November 5-7, 9, and 14, 1995.

Results: One violation, one non-cited violation, and two unresolved items were identified.

Operations:

In general, the performance in the operations area was satisfactory. A non-cited violation was identified for a mispositioned emergency diesel generator air system instrument root valve discovered by the inspectors (paragraph 2.d). An unresolved item was identified concerning a motor operated nuclear service water system (NSCW) valve which serves as an isolation valve for a closed system inside containment. Due to a material deficiency, the valve will not fully shut (paragraph 2.f).

Maintenance:

The methodology used by the licensee to establish reactor protection and engineered safety features actuation system trip setpoints could potentially allow trip setpoints inconsistent with technical specification values. Pending further NRC review, this was identified as an unresolved item (paragraph 3.b). No other problems or concerns were identified by the inspectors in this area.

Engineering:

A violation was identified for inadequate corrective actions taken by the licensee in response to partially obstructed NSCW system orifices in January 1995. Partial orifice blockages occurred again in August and September 1995 (paragraph 7.a).

The licensee identified that the calorimetric program to calculate thermal power did not compensate for heat lost through the excess letdown system. The licensee's identification, evaluation, and correction of an overpower condition when excess letdown was placed in service were good (paragraph 2.e).

Overall, the inspectors concluded that the licensee's performance in the engineering area was adequate.

Plant Support:

An inspector review concluded that the licensee's fire protection is adequately implemented (paragraph 6.)

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- J. Beasley, General Manager Nuclear Plant
- S. Bradley, Reactor Engineering Supervisor
- *W. Burmeister, Manager Engineering Support
- *C. Christiansen, SAER Supervisor
- *R. Dorman, Manager Training and Emergency Preparedness
- *W. Dunn, Unit 2 Superintendent
- *J. Gasser, Assistant General Manager Plant Operations
- M. Griffis, Manager Plant Modifications & Maintenance Support
- *K. Holmes, Manager Maintenance
- *D. Huyck, Manager Nuclear Security
- *W. Kitchens, Assistant General Manager Plant Support
- *I. Kochery, Health Physics Superintendent
- R. LeGrand, Manager Health Physics and Chemistry
- T. Parton, Chemistry Superintendent
- P. Rushton, Manager Operations
- M. Sheibani, Nuclear Safety and Compliance Supervisor
- *M. Slivka, ISEG Engineering Group Supervisor
- *C. Stinespring, Manager Plant Administration
- *J. Swartzwelder, Manager Outage and Planning
- *C. Tippins, Nuclear Specialist, NSAC
- R. Waters, Material Supervisor, Plant Administration
- *T. Webb, Senior Engineer, NSAC

Other licensee employees contacted included technicians, supervisors, engineers, operators, maintenance personnel, quality control inspectors, and office personnel.

Oglethorpe Power Company Representative

- *J. Sharpe, Site Representative

NRC Inspectors

- *C. Ogle, Senior Resident Inspector
- P. Hopkins, Resident Inspector
- *M. Widmann, Resident Inspector

- *Attended Exit Interview

An alphabetical list of abbreviations and acronyms is located in the last paragraph of the inspection report.

2. Plant Operations (71707)

a. General

The inspection staff reviewed plant operations throughout the reporting period to verify conformance with regulatory requirements, TSs, and administrative controls. Control logs, shift supervisors' logs, shift relief records, LCO status logs, night orders, standing orders, and clearance logs were routinely reviewed. Discussions were conducted with plant operations, maintenance, chemistry, health physics, engineering support and technical support personnel. Daily plant status meetings were routinely attended.

Activities within the control room were monitored during shifts and shift changes. Actions observed were conducted as required by the licensee's procedures. The complement of licensed personnel on each shift met or exceeded the minimum required by TS. Direct observations were conducted of control room panels, instrumentation, and recorder traces important to safety. Operating parameters were verified to be within TS limits.

Plant tours were taken during the reporting period on a routine basis. They included, but were not limited to the auxiliary building, control building, electrical equipment rooms, cable spreading rooms, NSCW towers, DG buildings, AFW buildings, MSIV rooms, turbine building and the low voltage switchyard. During plant tours, housekeeping and equipment status were observed.

The inspectors did not identify any problems or concerns during these observations.

b. Unit 1 Summary

The unit operated at full power until October 22, when power was reduced to approximately 97% to make repairs to the MSR C drain tank manway. The unit returned to full power on October 23, and remained there throughout the inspection period.

c. Unit 2 Summary

The unit operated at full power throughout the inspection period.

d. Diesel Generator 1A Air Start Root Valve Mispositioned

On October 27, 1995, during a routine tour of the Unit 1 Train A diesel generator room, the inspectors observed that the DG A number 1 air start receiver pressure gauge root valve, 1-2403-X4-010, was incorrectly positioned. The inspectors noted that this normally opened valve was closed. This discrepancy was identified to the Unit Shift Supervisor and following confirmation of the

inspectors' observation, the valve was opened. The inspectors were informed that a follow-up valve lineup of all air receiver pressure gauge root valves in both Unit 1 and 2 DG rooms by the licensee revealed no other mispositioned valves.

The inspectors reviewed the DC generated in response to the event. They also reviewed the last work order associated with the valve and portions of a maintenance procedure used to verify dew point measurements of the air receiver tanks. The inspectors interviewed the technician involved in the maintenance work and cognizant operations management regarding the licensee's investigation of the issue.

The inspectors were informed that the valve probably had been mispositioned since the completion of a starting air receiver tank dew point check performed approximately three hours before the inspectors' observation. The licensee attributed the mispositioned valve to a failure to properly implement the restoration valve lineup contained in the maintenance checklist following completion of the dew point check. The inspectors concluded that the licensee's explanation was plausible. The inspectors noted that with the valve shut, only local indication was affected, thereby minimizing the safety significance of the mispositioning. While the safety significance of this mispositioning was minor, the inspectors noted that this is the fourth valve found in the wrong position during the last three resident inspection report periods.

As corrective action, the licensee stated their intention is to enhance Procedure SCL00166, Generator Air Start Dryer Maintenance, to clearly identify the requirement to open the root valve following the dew point check. This enhancement will help ensure that the pressure gauge isolation valve is properly repositioned following performance of a dew point check.

The inspectors concluded that the mispositioned air start receiver tank isolation valve was contrary to the restoration requirements of the Procedure SCL00166. This is identified as NCV 50-424/95-27-01, Diesel Generator 1A Air Start Receiver Pressure Gauge Root Valve Mispositioned, consistent with Section IV of the NRC Enforcement Policy.

e. Thermal Power Limit Exceeded

On November 1, 1995, the licensee determined that Unit 1 had been operated in excess of its maximum allowed reactor power license condition of 3565 Mwt by one Mwt for an eight hour period from 9:00 a.m. to 5:00 p.m. on October 31, 1995. The cause of this overpower condition was the failure of the licensee's calorimetric program to compensate for thermal power lost through the excess letdown system. Excess letdown was placed in service at 12:24 a.m. on October 30, 1995, to permit maintenance on the normal

letdown system. Upon discovery of the condition, reactor power was reduced accordingly and administratively limited by approximately three Mwt (0.1 percent). Pursuant to the requirements of license condition 2.C (1) a 24-hour notification was made to the NRC to document the overpower condition.

It was determined by the licensee that the calorimetric calculation for reactor power does not consider CVCS excess letdown flow because it is not instrumented and the heat losses associated with that line are not fed into the calculation. A review by the licensee of an eight-hour rolling average period for power operation, after reactor power was corrected manually for the heat losses in excess letdown, identified the reactor power condition in excess of 100 percent. The licensee determined that an oversight in the original validation of the computer calorimetric software did not consider the excess letdown system in operation. This oversight resulted in a failure of the operating procedures to take into account the realignment impact on the reactor power calorimetric equation.

The inspectors reviewed the licensee's calculations of the power adjustment necessary to compensate for placing excess letdown in service. The licensee determined that reactor power deviated by approximately two Mwt higher from that calculated by the plant computer. The inspectors' independent calculation agreed with the licensee's magnitude of this deviation. The inspectors also reviewed the licensee's actions in response to this event. The licensee has revised Procedure 14030, Power Range Calorimetric Channel Calibration, to include steps to add three Mwt to the reactor thermal determinations and the ten minute average indicated power when calculating reactor power with excess letdown in service.

Overall, the inspectors concluded that the licensee's actions in identifying and resolving the technical aspects of this issue were good.

f. NSCW System Review

Following a partial walkdown and review of the operation of the NSCW system, the inspectors questioned the operability of valve 1-HV-1806, NSCW Containment Cooler 1 and 2 Supply valve. This valve serves as the isolation valve for the NSCW supply into containment for containment coolers 1 and 2. Currently, due to mechanical deficiencies, the valve will not fully shut.

This isolation valve is equipped with a motor operator and is located in an auxiliary building penetration area, immediately adjacent to the containment. It is normally open and receives a signal to open on a safety injection. The valve is identified as a containment isolation valve on the system drawing and in the FSAR. However, it is specifically exempted from the requirements

of TS 3.6.3, Containment Isolation, by a footnote to FSAR Table 16.3-4, and no limits are assigned for valve stroke time in the FSAR.

Based on an examination of the Standard Review Plan 6.2.4, Containment Isolation System, the FSAR, and the General Design Criteria, the inspectors concluded that the valve is established as a closed system isolation valve pursuant to the requirements of General Design Criteria 57. Pending further review by the NRC, this item is identified as URI 50-424/95-27-02, Adequacy of NSCW Valve as Closed System Isolation Valve.

One non-cited violation was identified.

3. Surveillance Observation (61726)

a. General

Surveillance tests were reviewed by the inspectors to verify procedural and performance adequacy. The completed tests were examined for necessary test prerequisites, instructions, acceptance criteria, technical content, data collection, independent verification where required, handling of deficiencies, and review of completed work. The tests witnessed, in whole or in part, were inspected to determine that approved procedures were available, equipment was calibrated, prerequisites were met, tests were conducted according to procedure, test results were acceptable, and system restoration was completed.

The inspectors witnessed or reviewed the following surveillance activities:

<u>SURVEILLANCE NO.</u>	<u>TITLE</u>
14611-2	SSPS Slave Relay K602 Train B Test Safety Injection
14613-2	SSPS Slave Relay K603 Train B Test Safety Injection
14806-2	Containment Spray Pump B Inservice Test
14842-2	MSIV Partial Stroke Test, 2HV-3006A/B (SG Loop 1) and 2HV-3036A/B (SG Loop 4)
14980-1	Diesel Generator 1B Operability Test
24504-1	Steam Generator Blowdown Pipe Break Room Protection Analog Channel Operational Test
24810-1	$\Delta T/T$ Average Loop 1 Protection Channel I IT-411 Channel Operability Test & Calibration

The inspectors did not identify any problems or concerns during the observation of these surveillance activities.

b. Reactor Trip System Instrumentation Trip Setpoints

The inspectors were directed by NRC regional management to review the licensee's calibration procedures for reactor trip system and ESFAS instrumentation trip setpoints. The review was conducted to determine if tolerances used in establishing these setpoints could potentially allow trip setpoints to be set inconsistent with TS values.

The inspectors reviewed several examples of licensee components' ACOT data sheets for both reactor trip system and ESFAS trip setpoints. The review verified that the licensee's expected trip setpoints met TS requirements. However, a review of the setpoint tolerances revealed setpoint ranges that could allow an instrument to be calibrated to greater than or less than nominal value specified in TS.

Pending further review by the NRC, this item is identified as URI 50-424,425/95-27-03, Proper Calibration of Reactor Trip System and ESFAS Trip Setpoints.

No violations or deviations were identified.

4. Maintenance Observation (62703)

Maintenance activities were observed or reviewed during the reporting period to verify that work was conducted in accordance with approved procedures, TSs, and applicable industry codes and standards. Activities, procedures, and work orders were examined to verify proper authorization to begin work, fire hazard provisions, cleanliness, and exposure controls, proper return of equipment to service, and adherence to limiting conditions for operation were met.

The inspectors witnessed or reviewed the following maintenance activities:

<u>MWO NOS.</u>	<u>WORK DESCRIPTION</u>
19501678	Change Out RCS Filter 1-1204-F4-001
19501749	CVCS Letdown, Chiller Heat Exchanger - Lap Valve Seat 1-1208-X4-186
19502813	Implement MDC 95-VAM063, Modify Control Wiring for Trip and Throttle Valve, To Provide Separation Between Control Circuit and Valve Indication
19502997	SI Pump 1B - Flush NSC/Motor Cooler Flow Orifice

19503022	Replace Light Socket in Reactor Head Vent Hand Switch IHS-8905A/B
19503098	Troubleshoot DRPI B Data Failure on Control Rod F-14, Bank B Group 2 Rod
29501271	Rebuild Atmospheric Relief Valve 2PV-3020 Actuator
29502575	Repair CCW Pump Room Cooler Drain Valve Missing

The inspectors did not identify any problems or concerns during the observation of these maintenance activities.

No violations or deviations were identified.

5. Onsite Engineering (37551)

During the inspection period, the inspectors assessed the effectiveness of onsite engineering processes by reviewing engineering evaluations, root cause determinations, modifications, and engineering testing. The inspectors also reviewed DCs to determine whether the licensee was appropriately documenting problems and implementing corrective actions.

The inspectors did not identify any problems or concerns during these inspection activities.

No violations or deviations were identified.

6. Plant Support (71750)

a. General

Plant support activities were observed and reviewed to ensure that licensee programs were implemented in conformance with facility policies and procedures and in compliance with regulatory requirements. Activities reviewed included radiological controls, physical security, emergency preparedness, and fire protection.

The inspectors did not identify any problems or concerns during these inspection activities.

b. Fire Protection/Prevention Program

The inspectors reviewed portions of the licensee's Fire Protection Program. This included administration of program requirements as well as observation of program performance attributes.

The Fire Protection Program is outlined in Section 9.5 of the VEGP FSAR. The inspectors reviewed the program surveillance procedures and found them to be consistent with the FSAR requirements. The inspectors noted that several licensee document change requests are being processed to reflect VEGP organizational changes.

Equipment utilized by the Fire Brigade team was inspected and found to be well maintained and stored properly for easy access. The inspectors performed a walkdown of portions of the plant to verify housekeeping practices; compliance with fire protection administration and implementing procedures; and operability of fire detection and suppression systems, emergency lighting, fire doors, and dampers. These attributes were found to be acceptable.

The inspectors observed a fire brigade drill conducted on October 11, 1995. The drill simulated a fire in a cooling unit for the auxiliary relay panels which spread to an adjacent cable tray. Response to the fire consisted of a Fire Captain, one fire team leader, several operational fire brigade members, and two security personnel. The response was timely and well coordinated.

The inspectors also witnessed some fire brigade training and considered it to be very professional.

The inspectors reviewed fire protection quality assurance audits VSAER-95-075, QA Triennial Audit of Fire Protection and VSAER-95-062, QA Audit For Fire Protection. These audits were thorough and identified a few minor problems for which the licensee initiated immediate corrective actions.

Based on the review outlined above, the inspectors concluded that the licensee's fire protection program is adequately implemented.

No violations or deviations were identified.

7. Follow-up (92700) (92902)

The following items were reviewed using licensee reports, inspections, record reviews, and discussions with licensee personnel, as appropriate:

- a. (Closed) URI 50-424,425/95-21-04, NSCW Debris Obstructs System Orifices

IR 50-424,425/95-21 documents the inspectors' review of degraded NSCW flows to safety related components as a result of foreign material obstructing small bore orifices in the system. Pending a NRC review of the adequacy of previous licensee corrective actions, URI 50-424,425/95-21-04 was opened.

The NRC has completed this review and concluded that the licensee's corrective actions to the January 25 and 31, 1995, NSCW flow reduction events were not adequate to preclude repetition. This is contrary to the requirements of 10 CFR 50 Appendix B Criteria XVI and is identified as VIO 50-424,425/95-27-04, Partially Obstructed NSCW System Flow Orifice Corrective Actions Inadequate to Preclude Repetition.

This item is closed based on upgrading this issue to a violation.

- b. (Closed) Violation 50-424,425/94-26-02 and LER 50-424/1-94-08, Piping Penetration Area Filtration and Exhaust System Rendered Inoperable

This inoperability resulted from an improperly accomplished design change to the Electrical Penetration HVAC system in October 1994. The inspectors reviewed licensee corrective actions generated in response to this event. This review included both documentation provided by the licensee to demonstrate corrective action accomplishment as well as an independent verification of several individual procedure and drawing changes.

Based on this review, these items are closed.

- c. (Closed) LER 50-424/1-95-04, Feedwater Pump Speed Control Failure Results in Reactor Overpower

LER 50-424/1-95-04 documents a minor power excursion in Unit 1 to approximately 102.1 percent as a result of an erratic MFP controller. The inspectors review of this event is documented in IR 50-424,425/95-24 (paragraph 2.g).

Based on this review, this item is closed.

- d. (Closed) LER 50-424/1-95-05, ESF Chillers' Inoperability Leads To Unit Operation Per Technical Specification: 3.0.3

LER 50-424/1-95-05 details two entries into TS 3.0.3 coincident with testing and troubleshooting of the Unit 1 Train B ESF Chiller. The inspectors' review of this issue is documented in IR 50-424,425/95-25 (paragraph 5.b).

Based on this review, this issue is closed.

- e. (Closed) LER 50-425/2-95-02, Automatic Feedwater Isolation Due to Steam Generator High-High Level

LER 50-425/2-95-02 dealt with leakage past a MFIV, 2HV-5228, resulting in an elevated steam generator level and ultimately an automatic feedwater isolation. The MFIV leakage was the result of an improperly set limit switch that resulted in the valve not fully closing. The inspectors review of this event is documented in IR 50-424,425/95-06 (paragraph 2.d).

The inspectors reviewed the licensee's corrective actions and concluded they are adequate. This item is closed.

- f. (Closed) LER 50-425/2-95-05, Incorrect Train Identification Results in Missed Technical Specification Surveillance Test

LER 50-425/2-95-05 dealt with a Unit 2 NSCW Train A transfer pump number 8 TS quarterly surveillance being identified as missed. The

TS surveillance was missed due to personnel error when the wrong train test was signed off as being successfully completed. The inspectors review of this event is documented in IR 50-424,425/95-17 (paragraph 3.b).

The inspectors reviewed the licensee's corrective actions and concluded they are adequate. This item is closed.

One violation was identified.

8. Exit Meeting

The inspection scope and findings were summarized on November 20, with those persons indicated in paragraph 1. 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 inspectors during the inspection.

<u>Item No.</u>	<u>Status</u>	<u>Description and Reference</u>
NCV 50-424/ 95-27-01	Closed	Diesel Generator 1A Air Start Receiver Pressure Gauge Root Valve Mispositioned (paragraph 2.d)
URI 50-424/ 95-27-02	Open	Adequacy of NSCW Valve As Closed System Isolation Valve (paragraph 2.f)
URI 50-424,425/ 95-27-03	Open	Proper Calibration of Reactor Trip System and ESFAS Trip Setpoints (paragraph 3.b)
VIO 50-424,425/ 95-27-04	Open	Partially Obstructed NSCW System Flow Orifice Corrective Actions Inadequate to Preclude Repetition (paragraph 7.a)
URI 50-424,425/ 95-21-04	Closed	NSCW Debris Obstructs System Orifices (paragraph 7.a)
LER 50-424/ 1-95-05	Closed	ESF Chillers' Inoperability Leads To Unit Operation Per Technical Specification 3.0.3 (paragraph 7.d)
LER 50-425/ 2-95-05	Closed	Incorrect Train Identification Results in Missed Technical Specification Surveillance Test (paragraph 7.f)

LER 50-424/ 1-95-04	Closed	Feedwater Pump Speed Control Failure Results in Reactor Overpower (paragraph 7.c)
LER 50-425/ 2-95-02	Closed	Automatic Feedwater Isolation Due to Steam Generator High-High Level (paragraph 7.e)
VIO 50-424,425/ 94-26-02	Closed	Inadequate Minor Design Change Process Results In Degradation Of PPAFES (paragraph 7.b)
LER 50-424/ 1-94-08	Closed	Piping Penetration Area Filtration and Exhaust System Rendered Inoperable (paragraph 7.b)

9. Acronyms and Abbreviations

ACOT	- Analog Channel Operational Test
AFW	- Auxiliary Feedwater System
CCW	- Component Cooling Water
CFR	- Code of Federal Regulations
CVCS	- Chemical and Volume Control System
ΔT	- Differential Temperature
DC	- Deficiency Card
DG	- Diesel Generator
DRPI	- Digital Rod Position Indication
ESF	- Engineered Safety Feature
ESFAS	- Engineered Safety Features Actuation System
FSAR	- Final Safety Analysis Report
HVAC	- Heating, Ventilating and Air Conditioning
IR	- Inspection Report
ISEG	- Independent Safety Engineering Group
LCO	- Limiting Condition for Operation
LER	- Licensee Event Report
MDC	- Minor Design Change
MFIV	- Main Feedwater Isolation Valve
MFP	- Main Feedwater Pump
MSIV	- Main Steam Isolation Valve
MSR	- Moisture Separator Reheater
MWO	- Maintenance Work Order
Mwt	- Megawatt Thermal
NCV	- Non-Cited Violation
NPF	- Nuclear Power Facility
NRC	- Nuclear Regulatory Commission
NRR	- Nuclear Reactor Regulation
NSAC	- Nuclear Safety and Compliance
NSCW	- Nuclear Service Cooling Water System
NUREG	- Nuclear Regulations
PDR	- Public Document Room
PPAFES	- Piping Penetration Area Filtration and Exhaust
QA	- Quality Assurance
RCS	- Reactor Coolant System

SAER	- Safety Audit And Engineering Review
SSPS	- Solid State Protection System
T	- Temperature
TS	- Technical Specifications
URI	- Unresolved Item
VEGP	- Vogtle Electric Generating Plant
VIO	- Violation
SAER	- Vogtle Safety Audit And Engineering Review