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

Report Nos.: 50-424/90-05 and 50-425/90-05

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 Nuclear Station Units 1 and 2

Inspection Conducted: February 17 - March 30, 1990

Inspectors: _____ 4/26/90
R. F. Aiello, Acting Senior Resident Inspector Date Signed

_____ 4/26/90
R. D. Starkey, Resident Inspector Date Signed

Accompanied By: Milt Hunt and Leigh Trocine

Approved By: _____ 4-26-90
K. E. Brockman, Section Chief Date Signed
Division of Reactor Projects

SUMMARY

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

Results: One cited violation and three non-cited violations were identified. The cited violation was in the area of operations for failure to mechanically secure valve 1-1208-U4-176 during Mode 5 (Cold Shutdown) as required by TS 3.4.1.4.2.C (paragraph 2.a). Two of the non-cited violations were in the area of operations for failure to properly review and approve a revision to refueling procedure 93271-C (paragraph 3.b.(1)(g)) and failure to incorporate adequate cautions in SSPS procedures regarding simultaneous loss of both SRNIs when placing both SRNIs in inhibit error inhibit (paragraph 2.a). The third non-cited violation was in the area of maintenance for failure of persons performing maintenance activities to notify QC as required by administrative procedure 00201-C paragraph 4.5.2 when QC holdpoints were reached (paragraph 3.b.(1)(e)).

One weakness was identified in the area of refueling concerning inattention to detail. See paragraph 2.b.(8) for details.

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DETAILS

1. Persons Contacted

Licensee Employees

*J. Aufdenkampe, Manager Technical Support
*G. Bockhold, Jr., General Manager Nuclear Plant
C. Coursey, Maintenance Superintendent
*G. Frederick, Safety Audit and Engineering Group Supervisor
*H. Handfinger, Manager Maintenance
*W. Kitchens, Assistant General Manager Plant Operations
*R. LeGrand, Manager Health Physics and Chemistry
G. McCarley, Independent Safety Engineering Group Supervisor
*A. Mosbaugh, Assistant General Manager Plant Support
R. Odom, Nuclear Safety and Compliance Manager
*J. Swartzwelder, Manager Operations

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

*Attended Exit Interview

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

2. Operational Safety Verification - (71707)(93702)

The facility began this inspection period with Unit 1 at 96% power and coasting down in preparation for 1R2 and Unit 2 at 100% power.

Unit 1:

On February 23, 1990, at 5:55 p.m. EST, with the unit at 88% power, a NUE was declared due to the discovery by the licensee of missing core clamp bolts on seismically qualified switchgear and the subsequent deenergizing of a containment isolation valve (paragraph 3.b.(1)(c)). To comply with the TS action statement, the licensee began a shutdown of the unit and although the bolts were replaced and the CIV was reenergized before the shutdown was completed, plant management elected to complete the shutdown and enter into a planned refueling outage. The reactor was manually tripped from approximately 15% power on February 23, 1990, at 8:58 p.m. EST, and the unit entered refueling outage 1R2.

On March 13, 1990, at approximately 12:00 a.m. EST, an ESF actuation occurred when the standby train of the Fuel Handling Building Post accident HVAC auto started. One train was already in service to support refueling activities. No alarm of the actuation was received in the control room. The cause of the actuation is under investigation.

On March 20, 1990, at 9:20 a.m. EST, with the unit in Mode 6 (Refueling), a truck backed into an insulator support for the "A" Reserve Auxiliary Transformer subsequently causing a loss of power to the "A" 4160 VAC emergency bus. Thirty-six minutes later, on the third start attempt, the 1A DG was started and supplied power to the "A" emergency bus. During this event, the "B" Reserve Auxiliary Transformer and the 1B DG were down for maintenance. Power was still being supplied to the non-vital buses through the main transformers backfeeding to the Unit Auxiliary Transformers.

The "B" emergency bus was being fed from the "A" RAT through an alternate supply breaker. When the undervoltage was sensed at the "A" emergency bus, DG 1A started and sequenced the loads to the "A" Bus. Eighty seconds after the DG output breaker closed, DG 1A tripped. DG 1A did not restart due to a starting logic lock up which required the sequencer to be manually reset before a restart could be attempted.

Operators were dispatched to DG 1A and the sequencer. When the sequencer was reset the engine started and the required loads sequenced onto the bus. After 70 seconds, the engine tripped again and did not restart due to another starting logic lock up. Fifteen minutes after the second trip, the DG was started from the engine control panel using the emergency start push button. It was subsequently manually loaded and continued to run until the "B" RAT was energized to supply power to the 4160 volt 1E bus.

Because there was a loss of power to both Unit 1 vital buses for more than 15 minutes, a Site Area Emergency was declared at 9:40 a.m., EST on March 20, 1990. On March 21, 1990, an AIT from NRC was dispatched to the site to review the events surrounding the SAE. On March 25, 1990, the AIT was upgraded to an IIT. The IIT will issue a report, NUREG-1410, upon completion of their investigation.

A region based inspector arrived on site on March 27, 1990, to assist the IIT in observation of the Unit 1 DG testing. The inspector witnessed the air leakage testing of the sensors for DG 1B. The purpose of this test was performed to verify the operability of the pneumatic controls for the engine. All tests were successfully completed. A UV test was performed, the engine started, the loads sequenced onto the generator, and the generator remained loaded to ensure that the controls were functioning properly. An operational surveillance was then performed and DG1B was declared operational. This permitted DG 1A to be removed from service for testing. The IIT requested that a UV test be performed on DG 1A to determine the cause for its failure on March 20, 1990.

The pneumatic logic for the engine control system was then reexamined by the licensee and representatives of the diesel manufacturer. This examination also included an air leakage test of the sensing elements which measure the various operating parameters of the engine. During this test, two jacket water temperature sensors were found to be either out of

calibration or defective and were replaced. On March 20, 1990, following restoration of "B" RAT, the licensee replaced the three lube oil pressure sensors after finding one defective or out of calibration. The engine was then successfully started and loaded three times. The logic testing witnessed by the inspector included five starts and was concluded with another UV start.

The licensee then had the sensor vendor representative review the calibration methods used by the licensee to determine if the cause of the sensor failures was due to either calibration practices or a problem with the sensors themselves. The licensee also contracted with an independent testing firm to conduct test on the defective sensors.

Details of the testing program and its results will be incorporated in the IIT inspection report.

Unit 2:

On March 20, 1990, the unit tripped and entered Mode 3 (Hot Standby). This was due to an electrical transient being sensed during the event on Unit 1 (see above). Troubleshooting and repairs continued for the following two days. The final resolution of the trip was an improperly set differential overcurrent relay. On March 22, the unit entered Mode 2 (Startup), tied to the grid, and entered Mode 1 (Power Operations). The unit remained at 100% power until the end of this inspection 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 Limiting Conditions for Operations
- 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 Shift Superintendent, Shift Supervisor, Reactor Operators, and the Shift Technical Advisor (when stationed) to determine the plant status, plans, and to assess operator knowledge
- Review of the operator logs, unit logs, and shift turnover sheets

On February 26, 1990, while Unit 1 was in Mode 5 with RCS level at 195 feet, 5 inches, the inspector discovered that RMWST discharge valve, 1-1208-U4-176, was closed but was not mechanically secured, as required by TS 3.4.1.4.2.c. Instead of a chain and lock, the valve had a clearance hold tag which provided only administrative control to preclude valve operation.

The licensee stated that procedure 10019-C, Control of Safety Related Locked Valves, Rev. 5, step 5.1.4, permits use of a hold tag in cases where it is not feasible to physically lock an apparatus. Valve 1-1208-U4-176 has a small diameter, solid wheel type valve handle and cannot be mechanically secured with a typical chain and lock. However, the valve handle does have two small holes drilled into it through which a wire or cable can be routed to secure the valve. Following notification that the valve was unsecured, the licensee routed and crimped a steel cable through the drilled holes which mechanically secured the valve as required by TS. The licensee was encouraged to reevaluate their locked valve program and determine if there are other required locked valves that fit in this same category. Failure to mechanically secure valve 1-1208-U4-176 is a violation of TS 3.4.1.4.2.c. This item is identified as:

VIO 50-424/90-05-01, "Failure To Mechanically Secure Valve 1-1208-U4-176 During Mode 5 As Required By TS 3.4.1.4.2.c."

On March 22, 1990, with Unit 1 in Mode 5, during performance of procedure 24831-1, Reactor Trip Bypass ESF Logic Response Time Test, the source range NIs, NI-31 and NI-32, were rendered inoperable when both trains of SSPS were selected to the Inhibit Error Inhibit position. A similar event occurred on March 27, 1990, while performing T-ENG-90-12, B-Train Undervoltage Test. In both cases, the operators quickly identified the problem and the SRNIs were restored to service within approximately 30 seconds. Neither procedure 24831-1 nor T-ENG-90-12 contained a caution to alert operators that placing both SSPS switches to Inhibit Error Inhibit would cause both NIs to be inoperable. Furthermore, T-ENG-90-12 did not contain any steps to restore SSPS to its normal configuration. Failure to establish, implement and maintain an adequate engineering procedure for nuclear instrumentation is a violation of TS 6.7.1.a.

The licensee has initiated corrective action by requiring that all SSPS procedures which use the Inhibit Error Inhibit switches be reviewed for adequacy. A memorandum concerning these events was placed in the Operations Required Reading Book in the control room. Licensed operator requalification training on SSPS will be updated to reflect these events concerning SSPS. This licensee identified violation is not being cited because criteria specified in Section V.G.1 of the NRC Enforcement Policy were satisfied. In order to track this item, the following is established.

NCV 50-424/90-05-02, "Failure To Incorporate Adequate Cautions In SSPS Procedures Regarding Simultaneous Loss Of Both Source Range NIs When Placing Both SRNIs In Inhibit Error Inhibit."

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 were 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.

(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.

On March 15, 1990, an inspector toured the Unit 1 containment building with the Manager-Health Physics and Chemistry and the Manager-Maintenance. Topics of discussion included housekeeping, HP practices, and maintenance activities. In particular, the method by which HP will decontaminate the containment pool when the pool water level is lowered in preparation for reinstallation of the reactor vessel head was discussed. Also observed was the installation of the reactor vessel level sight gages which are to replace the existing tygon tube and will be used for reactor vessel indication in Mode 5 and Mode 6 during RCS drain down to mid-loop operation. The Manager - Maintenance also answered questions concerning the snubber reduction effort and, in particular, the seismic snubbers which have been removed from the SGs during the current refueling outage.

No deficiencies were noted by the inspector.

(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.

On February 22, 1990, the inspectors observed an announced fire drill. The simulated fire occurred in the Unit 2 AFW sump pump room. Fire team members responded quickly and appropriately during the drill. Other plant staff were on hand to assist the fire team in laying out hoses and staging other support equipment. The inspectors noted that, as in previous fire drills, the fire team was not permitted to charge the fire hoses to simulate actual hose handling conditions. Consequently, the hoses, once inside the building, were looped and bent into positions which would not have been possible if the hoses had been fully charged with water. The inspectors were informed by the fire protection system engineer that plant management has forbidden the charging of fire hoses during drills.

Plant management has subsequently revised its position and has directed that the training objectives of drills be rewritten to include grading criteria to evaluate the fire team's placement and simulated charging of fire hoses. Additionally, a fire drill scenario has been developed for use in one of the site support buildings which will include actual charging of the hoses. The licensee's response adequately addressed the inspector's concern.

(4) Radiation Protection - 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 were observed to verify proper identification and implementation.

(5) Security - 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.

After a recent housekeeping tour of Unit 1 and Unit 2 auxiliary buildings, the inspector observed that signs posted on inactive card readers can be confusing to the user and cause unnecessary phone calls to either Security or Health Physics. For example, the posting on a Unit 1 charging pump room door inactive card reader stated, "Card Reader Inoperable - Call Security/Health Physics." Numerous other inactive card readers had signs which

read, "Card Reader Not In Use - Call HP (4016) for Access." The Manager Health Physics and Chemistry stated that he was not aware of a need or requirement for these postings. He stated that he would work with the Manager-Security to properly identify inactive card readers. As a result of their initiative, inactive card readers in the auxiliary buildings and control building have been reposted with signs which simply state "NOT IN SERVICE."

(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/or reviewed completed data against acceptance criteria:

Surveillance No.	Title
14805-1, Rev. 9	RHR Pump And Check Valve IST
14825-2, Rev. 4	Quarterly Inservice Valve Test
24805-1, Rev. 4	Steam Pressure Loop 4 (Protection IV) 1P-546 ACOT and Channel Calibration
24831-1, Rev. 5T	Reactor Trip And ESF Logic Response Time Test
54065-1, Rev. 5	Train "B" DG And ESFAS Test
T-ENG-90-11/12, Rev. 1/1	A/B Train Undervoltage Test

On March 29, 1990, the Resident inspector examined the integrated leak rate test data acquisition process under the guidance of the Manager - Maintenance. The inspector noted that the electrical test equipment was supplied by non safety related 125V inverters and all process equipment (precision manometers and data acquisition systems) were connected to mitigate single point failures from rendering the ILRT invalid. The inspector had no further comments.

(7) Maintenance Activities (62703) - An 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, and TS requirements were being

followed. The Maintenance Work Order backlog was reviewed. Maintenance was observed and/or work packages were reviewed for the following maintenance activities:

MWO No.	Work Description
18801635	Repair SG Blowdown HX Flange Leak And Pressure Test Tubes For Leaks
18903586	Inspect Worm Gear For Casting Porosity On 1-HV-11605
18905202	Perform Motor Control Center (MCC 1NBJ) Maintenance
19000222	Installation Of DCP 89-VCN0115 Which Installs And Feeds Disconnect Switches In Containment
19000840	Main Steam Supply To TDAFW Pump HV-3019 Exceeded Its Maximum Stroke Time
19001511	DG 1B Calibration Of Lube Oil High Temperature Trip Switch

(8) Refueling Activities (60705) (60710) - New fuel receipt, core alterations, and fuel shuffle evolutions were observed to verify program effectiveness, approved procedures were being used, and personnel were qualified. The inspector observed portions of the following evolutions:

93300-C, Rev. 5, Conduct of Refueling Operations
93330-C, Rev. 4, Development and Implementation of the Fuel Shuffle Sequence Plan
93010-C, Rev. 5, Unloading, Inspection and Storage of New Fuel
93020-C, Rev. 4, Technical Inspection of New Fuel

While observing core alterations in the containment building and fuel shuffling in the spent fuel pool, one weakness, inattention to detail, was identified due to the following incidents:

- On March 2, 1990, the fuel handling system transfer tube access plug clearance, required per procedure 93300-C, was not hung prior to spent fuel movement through the transfer tube.

- On March 3, 1990, spent fuel storage rack location U-3 was damaged due to a misalignment while conducting core alterations.

- On March 4, 1990, fuel bundle 5C36 was loaded into spent fuel pit location Y8 instead of location Y9.

- On March 6, 1990, new fuel assembly G-7, in lieu of G-5, was placed in the spent fuel pool by error.

Prompt corrective action addressing these fuel handling problems was noted by the inspector. They included the following:

- All fuel handling crews were counseled on the importance of procedural compliance associated with fuel handling activities.

- Three of the individuals involved were removed from fuel handling activities.

- Additional Quality Assurance coverage has been added. Four hours coverage will be provided in each 12 hours.

- Additional Supervisory surveillance has been added to ensure procedural compliance. Additionally, Outage Management attention has been increased.

- To reduce fatigue as a contributing factor, shifts have been changed from 10, 10, 13, to three 9's.

- A fuel pool map will be made prior to commencing fuel load to ensure the pool is in accordance with the shuffle sheets.

- As the fuel is transferred from the Fuel Handling Building to the Containment, a serial number check will be made while the fuel is in the upender as a final verification.

- The bundles associated with the bent fuel rack have been inspected by camera. Results were reviewed by onsite personnel and sent to the Westinghouse fuels group for review. No problems have been identified.

The licensee's preparation and execution of placing the unit into mid-loop operation was accomplished in a safe and pre-planned manner. The inservice testing of the steam generators proceeded in an effective manner. The plugging of four tubes was indicative of good chemistry practices. Only one of these tubes actually exceeded the plugging limit (40% of nominal tube wall thickness) and was required to be plugged. The other three tubes did not exceed the plugging limit, but were plugged as a precautionary measure. The Unit 1 snubber

inspections went satisfactorily. Of the 188 snubbers tested, only 10 failed. All 10 failures were previous failures from 1R1 and did not require a scope increase. Scheduling and coordination meetings were conducted on a frequent basis with appropriate levels of management in attendance.

On March 20, Unit 1 experienced a loss of all AC to the safety related 4.16kv buses which resulted in elevated temperatures occurring in the RCS while in a mid-loop status. See paragraph 2 for details.

(9) Calibration (56700) - The inspector reviewed the licensee's implementation of the Analog Channel Operational Test and Calibration surveillance program to ensure conformance with license requirements, technical specifications, licensee commitments, and industry guides and standards. The inspector examined selected surveillance procedures for technical content, verified that calibration frequency met TS requirements, reviewed completed surveillances, and witnessed the performance of two surveillances. The inspector also reviewed the licensee's program for surveilling non-technical specification components associated with safety-related systems or functions. The licensee utilized the Surveillance Tracking System for tracking both the TS required surveillances and those non-technical specification surveillances associated with safety-related systems or functions.

The inspector reviewed the following surveillance procedures for technical content and verified that their calibration frequency meets TS requirements. The inspector also reviewed the most recently completed of each of these surveillances to verify that the acceptance criteria had been met, that the proper approved test procedure had been used, and that procedural steps had been signed off and all necessary values entered.

24493-1, Rev. 2	Pressurizer Level Control L-459 Channel Calibration
24571-1, Rev. 3	Containment Wide Range Pressure 1P-10942 Channel Calibration
24750-1, Rev. 4	SG Level (Narrow Range) Protection Channel II, 1L-519 Analog Channel Operability Test And Channel Calibration
24782-1, Rev. 8	Reactor Coolant Flow Loop 1 Protection Channel I, 1F-414 Analog Channel Operability Test And Channel Calibration

Eight additional procedures in the areas of reactor protection, ECCS, and plant auxiliary systems were reviewed to ensure TS required testing frequency was correctly stated. The inspector also observed performance of portions of the following surveillances:

24805-1, Rev. 4	Steam Pressure Loop 4 (Protection IV) 1P-546 ACOT And Channel Calibration
24831-1, Rev. 5T	Reactor Trip And ESF Logic Response Time Test

During these observations, the inspector questioned the technicians concerning their experience and qualifications and was satisfied that they met industry standards.

No violations or deviations were identified.

3. 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 reports 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 12, 1990, was reviewed. The inspector had no comments.

Annual Report - The 1989 annual report dated February 26, 1990, was reviewed. Part 2 of this report will be submitted by May 1, 1990. The inspector had no comments.

Special Report - The following special reports were reviewed.

(a) 1-90-02, "SG Tubes Plugged During 1R2." This special report dated March 22, 1990, regarding the number of SG tubes plugged during 1R2 was reviewed. The inspector had no comments.

(b) 2-90-02, "Valid Diesel Generator Failures." The inspector questioned the licensee regarding a sentence in this report which stated that both diesel generators were out of service simultaneously for a period of 1 hour and 56 minutes. After a review by the inspector and the licensee, it was determined that this statement was totally in error.

This Special Report was revised by the licensee on March 12, 1990 to state that "at no time were both diesels out of service simultaneously.

b. Deficiency Cards and Licensee Event Reports

Deficiency Cards and Licensee Event Reports 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 following occurrence 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 was reviewed for enforcement action in accordance with 10 CFR Part 2, Appendix C, and where the violation was not cited the criteria specified in Section V.G of the Enforcement Policy were satisfied. 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 DCs and LERs denoted with an asterisk indicates that reactive inspection occurred following the event and prior to receipt of the written report.

(1) The following Deficiency Cards were reviewed:

(a) DC 1-90-0030, "Train A And B Sequencer Loss Of Power Relay Was Not Properly Tested."

On February 15, 1990, the licensee identified that the Train A And B Sequencer Loss of Power Relay was not properly tested in accordance with TS. No surveillance test has verified that the relay operation will result in a Train "C" AFW actuation. This item will be further followed up when submitted as an LER.

(b) DC 1-90-0031, "DG Surveillance Requirement Was Not Completely Satisfied During 1R1."

On February 16, 1990, the licensee discovered that a DG surveillance requirement had not been completely satisfied during the first Unit 1 refueling outage. The DG electrical trips that are automatically bypassed upon loss of voltage on the emergency bus concurrent with an SI signal were not verified to actually be bypassed. This item will be further followed up when submitted as an LER.

(c) *DC 1-90-0034, "Missing Seismic Bolts On Transformers Leads To TS Required Unit Shutdown."

On February 23, 1990, a system engineer found core clamp bolts missing on seismically qualified switchgear. The switchgear was deenergized as was one of its loads, a Containment Isolation Valve. After the four hour time period had expired for reenergizing the valve, unit shutdown was initiated as required by Technical Specifications. Although the bolts were replaced and the CIV was reenergized before shutdown was completed, plant management elected to complete the shutdown and enter into a planned refueling outage approximately four hours early. Two related DC's, 1-90-0035 and 2-90-0021, concerning steel hold down wedges on seismically qualified switchgear were also written. Based on GE type test results, the licensee concluded that the transformers without the upper support wedges meet the operability requirements at Vogtle and are safe for continued operation.

(d) DC 1-90-0050, "Source Range Monitor Inoperable At Time Of Entry Into Mode 6."

On March 1, 1990, the licensee was in a refueling outage on Unit 1. Mode 6 was re-entered with the commencement of fuel reload. At the time of the Mode 6 entry, one of the required two SRNIs was under an LCO for performance of an I&C surveillance. The SRNI was in test and a channel calibration was in progress. This item will be further followed up when submitted as an LER.

(e) DC 1-90-0081, "Missed QC Holdpoints."

During the performance of MWO 19001152, a QC holdpoint to inspect the "B" RHR pump motor rotor was inadvertently missed. The cause was due to QC and maintenance personnel not being cognizant of the holdpoints as work was being performed. A similar event occurred on March 11, 1990, when safety related leads on MCC 1BB0(67) were relanded without QC notification (DC 1-90-0094). This licensee identified violation is not being cited because the criteria specified in section V.G.1 of the NRC enforcement policy were satisfied. In order to track this item, the following is established.

NCV 50-424/90-05-03, "Failure Of Persons Performing Maintenance Activities To Notify QC As Required By Administrative Procedure 00201-C Paragraph 4.5.2 When QC Holdpoints Were Reached."

(f) *DC 1-90-0102, "Inadvertent Actuation Of Fuel Handling Building Post Accident HVAC Train B."

On March 13, 1990, the standby train of the Fuel Handling Building Post Accident HVAC auto started. One train was already in service to support refueling activities. No alarm of the actuation was received in the control room. The cause of the actuation was believed to have been caused by a low negative pressure signal. This item will be further followed up when submitted as an LER.

(g) DC 1-90-0103, "Failure To Properly Review And Approve A Revision To Refueling Procedure 93271-C."

On March 14, 1990, the licensee discovered that procedure 93271-C, Sigma Refueling Machine Programming Instructions, was revised from Rev. 0 to Rev. 1 without the approval of the General Manager, or review by the PRB, as required by procedure 00051-C, Procedure Review and Approval, Rev. 12. Technical Specification 6.4.1.6.a. requires that the PRB be responsible for review of fuel handling procedures. Furthermore, Tables 1 and 2 of procedure 00051-C, require General Manager approval PRB review of all fuel handling procedure revisions. The licensee initiated prompt corrective action on March 14, 1990, by having procedure 93271-C properly reviewed and approved. Therefore, this licensee identified violation is not being cited because criteria specified in Section V.G.1 on the NRC Enforcement Policy were satisfied. In order to track this item, the following is established.

NCV 50-424/90-05-04 and 50-425/90-05-01, "Failure To Properly Review And Approve a Revision To Refueling Procedure 93271-C."

(h) *DC 1-90-0123, "Loss Of All Offsite And Onsite A.C. Power To The Unit 1 Vital Buses For More Than 15 Minutes."

This event, which occurred on March 20, 1990, is discussed under paragraph 2 and will be followed up when the LER is issued.

(i) DC 1-90-0126, "Liquid Waste Discharge Made While Radiation Monitor (1RE-0018) Inoperable."

On March 17, 1990, with the liquid radwaste effluent line radiation monitor (1RE-0018) isolated under a work order clearance, a liquid waste release was made. The release was authorized under a release permit without complying with TS 3.3.3.9, Action 37. This item will be further followed up when submitted as an LER.

(j) DC 2-90-0022, "Surveillance Not Completely Performed On Containment Integrity Valves Outside Containment."

On January 3, 1990, and February 1, 1990, a partial surveillance was performed on containment integrity valves outside containment. All but two of the required valves were "NA'd" on the surveillance data sheets. There was no record in the surveillance that the remaining valves were verified closed as required by the surveillance requirement. This item will be further followed up when submitted as an LER.

(k) *DC 2-90-0026, "Unplanned Reactor Trip Due To Electrical Transient As A Result Of A Loss Of Power Event On Unit 1."

This event, which occurred on March 20, 1990, is discussed under paragraph 2 and will be followed up when the LER is issued.

(2) The following LER was reviewed and closed.

(a) *50-424/90-01, Rev. 0, "Reactor Trip Due To Inadvertent Closure Of Main Steam Isolation Valve."

On January 24, 1990, partial stroke testing of a Main Steam Isolation Valve was in progress. During a previous test, the valve had failed to reopen automatically at the 10% closed position as designed. As a result, plant personnel were prepared to install a jumper to reopen the valve if it failed to reopen automatically. The test began and an indicator illuminated at approximately 10% closed; however, unknown to the personnel involved, there were two limit switches which were not adjusted to actuate concurrently. Consequently, when the indicator illuminated, the other limit switch had not yet actuated and it appeared that the valve would not reopen automatically. The jumper was installed to initiate valve reopening; however, position indication was lost and the MSIV went fully closed. MSIV closure resulted in a rapid decrease in water level in Steam Generator #4 to the low-low level setpoint and an automatic reactor trip occurred. The MSIV closed when its actuator fuses blew. Although a simulation of the event failed to duplicate the blown fuses and MSIV closure, an engineering judgement has determined that the Georgia Power Company electricians inadvertently created a momentary electrical short which led to the fuses blowing. This apparent cognitive personnel error was not the result of failing to follow approved procedures or the result of any

unusual characteristics of the work location. Corrective actions include: a) fuse replacement, b) procedure revision to include a caution that the indicator may light prior to the valve receiving the reopen signal, c) limit switch adjustment to obtain concurrent actuation and d) counselling of the electricians involved regarding the necessity of exercising caution when testing circuits having the potential for causing reactor trip. The inspector has no further comments.

4. Actions on Previous Inspection Findings - (92701)(92702)

a. Part 21 Reports

(1) (Closed) 50-424/P21-89-03, "Deficiencies In Control Room Emergency Filtration System And Isolation Of The Normal Control Room HVAC System."

Corrective actions taken included the addition of backdraft dampers to eliminate the potential for system backflow identified on July 2, 1987, and the deactivation of two outside air intake dampers to preclude postulated spurious damper actuation on July 4, 1987. The inspector has no further comments.

(2) (Closed) 50-424 & 50/425/P21-89-04, "American Air Filter Seismic Door Tabs Found To Be Missing From ESF Unit Coolers. Without Tabs, Access Doors May Not Operate During Seismic Event And Could Negate Function Of Coolers."

Without the seismic retaining tabs, the access doors of the unit coolers may fail open during a seismic event. Under this circumstance, the return air may bypass the cooling coils and, depending on which access door opened, could negate the cooling function of the coolers. The resulting increase in the room temperature could adversely affect the safe shutdown of the plant. The lack of retaining tabs on the access doors could lead to the inoperability of the coolers in the event of an earthquake. The licensee has reinstalled the seismic tabs (or used a lock and hasp) on both units. The inspector has no further comments.

(3) (Closed) 50-424 & 50-425/P21 89-16, "Cooper-Bessemer Standby DG At Susquehanna Had A Crankcase Explosion Which Originated From The Thrust Side Of The Number Seven Left Piston Skirt."

The engine in question is a KSV-16-T. KSV DGs are not used at Plant Vogtle. Therefore, this part 21 is not applicable. The inspector has no further questions.

(4) (Closed) 50-424 & 50-425/P21-89-18, "PT21 From Limitorque RE SMB Actuators Found To Have Melamine Torque Switches That Undergo Post Mold Shrinkage And Causes Cam Binding. Melamine Torque Switch Found Not To Be Qualified."

The licensee's review regarding Limitorgue SMB actuations for Unit 2 has now been completed and identified 22 effected motor-operated valves. These valves are part of the MOV Test Program and will require Movat tests to establish new baseline data after the required maintenance. The licensee's review for the effected valves on Unit 1 is still in process. The inspector has no further comments.

(5) (Closed) 50-424 & 50/425/P21-89-19, "PT21 From Dresser Industries RE Pressure Reducing Sleeves Manufactured By Pacific Pumps, Part Of The Dresser Pump Division, May Have A Brittle Crack Failure Upon Start Due To Sleeves Being Through Hardened Vice Surface Hardened."

Pacific Pumps stated that some pressure reducing sleeves were "through hardened "vice" surface hardened" which could result in a brittle crack failure within one hour after operation. Pacific Pumps has identified the following three Georgia Power Company orders on which these "through hardened" sleeves may have been provided:

G.O. AT-70093, Customer Order No. PAV-27380, CN2, Charging/Safety Injection Pump. Three sleeves were provided, two each on Item 036 and one as part of an internal assembly, Item 057.

G.O. AT-70135, Customer Order No. PAV-27380, CN13, Safety Injection Pump. Two sleeves were provided on Item 083.

G.O. AT-70345, Customer Order No. PAV-28100, CN69, Safety Injection Pump Sleeve provided as part of an internal assembly.

Pacific Pumps has stated that there is no concern if the sleeves have been installed on an operating pump, since failure, if it was to occur, would happen within the first hour of operation. Pacific Pumps later advised Westinghouse that the above identified sleeves provided to Georgia Power Company are acceptable and there are no further actions required. The inspector has no further comments.

(6) (Closed) 50-424 & 50-425/P21-89-20, "PT21 From Cooper-Bessemer Concerning The EDG Intake Rocker Arm Assembly. Potential Interference Between The Connector Push Rod And The End Socket Of The Rocker Arm. Submittal References A Similar Notification From Gulf States Utilities On October 31, 1989."

Bessemer stated that there is a potential interference between the connector push rod and the end socket of the rocker arm. Cooper's investigation showed results similar to those identified in the investigation by GSU. Any interference would show up in assembly or during maintenance start-up runs. This is significant when the engine is still in a maintenance or assembly mode and not yet operational. This is a replacement parts concern, since equipment installed on engines that have been operated or tested (site or factory) have demonstrated that no interference exists and are, therefore, not affected.

Vogtle's parts issues history has been reviewed and it was determined that the warehouse has not issued these items for maintenance. The assemblies in question were placed on warehouse hold January 25, 1990, pending QC inspection. The inspector has no further comments.

5. Release from CAL

On April 9, 1990, GPC management briefed the Regional Administrator and the regional staff concerning the event review which the licensee had conducted after the March 20, 1990, Site Area Emergency event. The short-term corrective actions which the site had implemented were considered to be adequate to allow the plant to start up. This released them from Item #1 of CAL-50-424/90-01. Long-term corrective actions will be presented to the Region no later than May 15, 1990.

6. Exit Interviews - (30703)

The inspection scope and findings were summarized on March 29, 1990, with those persons indicated in paragraph 1 above. The inspectors 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 six 10 CFR Part 21 Reports, and one Licensee Event Report. The items identified during this inspection were:

VIO 50-424/90-05-01 "Failure To Mechanically Secure Valve 1-1208-U4-176 During Mode 5 As Required By TS 3.4.1.4.2.c" - paragraph 2.a.

NCV 50-424/90-05-02, "Failure To Incorporate Adequate Cautions In SSPS Procedures Regarding Simultaneous Loss Of Both Source Range NIs When Placing Both SRNIs In Inhibit Error Inhibit" - paragraph 2.a.

NCV 50-424/90-05-03, "Failure Of Persons Performing Maintenance Activities To Notify QC As Required By Administrative Procedure 00201-C Paragraph 4.5.2 When QC Holdpoints Were Reached" - paragraph 3.b.(1)(e).

NCV 50-424/90-05-04 and 50-425/90-05-01, "Failure To Properly Review And Approve a Revision To Refueling Procedure 93271-C" - paragraph 3.b.(1)(g).

7. Acronyms And Initialisms

ACOT	Analog Channel Operability Test
AFW	Auxiliary Feedwater System
AIT	Augmented Inspection Team
CFR	Code of Federal Regulations
CIV	Containment Isolation Valve
DC	Deficiency Cards
DCP	Design Change Package
DG	Diesel Generator
ECCS	Emergency Core Cooling System
EDG	Emergency Diesel Generator
ESF	Engineered Safety Features
ESFAS	Engineering Safety Features Actuation System
EST	Eastern Standard Time
GE	General Electric
GSU	Gulf Station Utilities
HP	Health Physics
HV	High Voltage
HX	Heat Exchanger
HVAC	Heating, Ventilation and Air Conditioning
IIT	Incident Investigation Team
ILRT	Integrated Leak Rate Test
IST	Inservice Testing
KSV	(trade name)
LCO	Limiting Conditions for Operations
LER	Licensee Event Report
MCC	Motor Control Center
MOV	Motor Operated Valve
MSIV	Main Steam Isolation Valve
MWO	Maintenance Work Order
NCV	Non-cited Violation
NI	Nuclear Instrumentation
NPF	Nuclear Power Facility
NRC	Nuclear Regulatory Commission
NUE	Notice of Unusual Event
PRB	Plant Review Board
QC	Quality Control
RAT	Reserve Auxiliary Transformer

RCS	Reactor Coolant System
Rev	Revision
RHR	Residual Heat Removal System
RMWST	Reactor Makeup Water Storage Tank
SAE	Site Area Emergency
SG	Steam Generator
SI	Safety Injection System
SMB	(prefix to melamine torque switches)
SRNI	Source Range Nuclear Instrumentation
SSPS	Solid State Protection System
TDAFW	Turbine Driven AFW Pump
TS	Technical Specification
UAT	Unit Auxiliary Transformer
UV	Under Voltage
VAC	Voltage-Alternating Current
VIO	Violation
1R1	Unit 1 First Refueling Outage
1R2	Unit 1 Second Refueling Outage