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

Report Nos.: 50-424/92-18 and 50-425/92-18

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: July 26 - August 22, 1992

Inspector: _____ 9.15.92
for B. R. Bonser, Senior Resident Inspector Date Signed

for _____ 9.15.92
R. D. Starkey, Resident Inspector Date Signed

for _____ 9.15.92
P. A. Balmain, Resident Inspector Date Signed

Accompanied by J.L. Starefo.

Approved by: _____ 9-16-92
P. Skinner, Chief Date Signed
Reactor Projects Section 3B
Division of Reactor Projects

SUMMARY

Scope: This routine inspection entailed inspection in the following areas: plant operations, surveillance, maintenance, review of a Shearon Harris event for applicability to Vogtle, and followup on previous inspection findings,

Results: One violation and one non-cited violation were identified.

The violation involved three examples of failure to follow procedure. One example was a second occurrence of a recent similar event which involved an incorrect Instrumentation and Control (I&C) surveillance procedure and a failure to follow the procedure. The inspectors reviewed the previous event and found the corrective actions could not reasonably be expected to have prevented this most recent event. The inspectors also reviewed the licensee's I&C procedure revision process and found no programmatic problems. There has been a general decline in procedural adherence deficiencies. This violation does not appear

to be a reversal of that trend, however management attention should be given to this area to assure that the decline in procedural deficiencies continues (paragraphs 2d, 2f, &).

The non-cited violation involved a failure to perform a valve stroke test on two accumulator sample isolation valves within the required surveillance interval. This violation exposed a surveillance tracking system weakness for In-Service Test surveillances. Tracking had been initiated from the final completion date of the procedure rather than the start date. These procedures, which can involve several independent tasks, can be open for several weeks which may allow valves to exceed their required testing frequency (paragraph 3b).

A strength was noted in the licensee walkdowns of the auxiliary building to examine leaks previously identified with work request tags. The walkdowns were effective in reducing the number of contaminated systems with leaks; reducing the number of catch basins in the auxiliary building; reducing the number of maintenance work orders (MWO) generated; and providing a better description of equipment problems to Work Planning prior to generating MWOs for leaks that could not be repaired during the walkdown (paragraph 4).

The inspectors reviewed a Shearon Harris event (LER 50-400/91-008) for applicability to Vogtle. The event involved a common cause failure of the high head safety injection alternate miniflow line. The licensee had already responded to an Institute for Nuclear Power Operations Safety Event Report (INPO SER) which addressed this event and the issue of a potential water hammer. The inspectors also found that procedural guidance in place did not address the failure of the centrifugal charging pump alternate miniflow path, however potential damage from water hammer is precluded by actions taken in response to the INPO SER (paragraph 5).

REPORT DETAILS

1. Persons Contacted

Licensee Employees

*H. Beacher, Senior Plant Engineer
J. Beasley, Assistant General Manager Plant Operations
*W. Burmeister, Manager Engineering Support
S. Chesnut, Manager Engineering Technical Support
*C. Christiansen, SAER Supervisor
W. Copeland, Supervisor - Materials
C. Coursey, Maintenance Superintendent
R. Dorman, Manager Training and Emergency Preparedness
*G. Frederick, Manager Maintenance
*J. Gasser, Operations Unit Superintendent
M. Hobbs, I&C Superintendent
*K. Holmes, Manager Health Physics and Chemistry
*G. Hooper, Performance Engineering Supervisor
D. Huyck, Nuclear Security Manager
W. Kitchens, Assistant General Manager Plant Support
R. LeGrand, Manager Operations
G. McCarley, ISEG Supervisor
*M. Sheibani, Nuclear Safety and Compliance Supervisor
*W. Shipman, General Manager Nuclear Plant
C. Stinespring, Manager Administration
*J. Swartzwelder, Manager Outage and Planning
*C. Tynan, Nuclear Procedures Supervisor

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

Oglethorpe Power Company Representative

T. Mozingo

NRC Resident Inspectors

*B. Bonser
*D. Starkey
*P. Balmain
*J. Starefos

*Attended Exit Interview

An alphabetical list of abbreviations 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, Technical Specifications, 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 and 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 observed to verify they were within TS limits. The inspectors also reviewed DCs to determine whether the licensee was appropriately documenting problems and implementing corrective actions.

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

During plant tours, housekeeping, security, equipment status and radiation control practices were observed.

The inspectors verified that the licensee's health physics policies and procedures were followed. This included observation of HP practices and review of area surveys, radiation work permits, postings, and instrument calibration.

The inspectors verified that the security organization was properly manned and security personnel were capable of performing their assigned functions; persons and packages were checked prior to entry into the PA; vehicles were properly authorized, searched, and escorted with the PA; persons within the PA displayed photo identification badges; and personnel in vital areas were authorized.

b. Unit 1 Summary

The unit began the period operating at 100% power and operated at full power throughout the inspection period.

c. Unit 2 Summary

The unit began the period operating at 100% power and operated at full power throughout the inspection period.

d. Radiation Monitor 2RE-12116 Left In Block Following ACOT

On July 21, at 4:51 pm, the Unit 2 Control Room Air Intake Process Radio Gas Monitor (2RE-12116) went into a low alarm due to a detector failure. The channel would not respond and when an operator proceeded to place the monitor in "block" (disable the monitor), he discovered that it was already in "block." A review of the USS log determined that the most recent activity concerning 2RE-12116 was the performance of procedure 24634-2, Control Air Intake (2RE-12116) Process Radio Gas Monitor 2RX-12116 Analog Channel Operational Test and Channel Calibration. This procedure was authorized by the USS on July 20 at 11:49 pm, and was completed on July 21 at 12:12 am. At the completion of 24634-2, 2RE-12116 had apparently been left in "block" for approximately 17 hours. There are a total of four Control Room Air Intake Monitors. The remaining three monitors were operable and TS requirements were met.

Procedure 24634-2, step 4.3.11, directs the technician performing the procedure to notify the RO that the monitor has been returned to service and that the RO should place the monitor in the desired position (block switch position to "off", i.e., monitor enabled). The technician who performed the ACOT stated that he notified the RO that the test was complete and the technician then initialed the procedure checklist indicating that the RO had been informed of the completion. The technician recalled that the RO was alone in the "at the controls" area at the time and was unable to leave the control area immediately to restore the 2RE-12116 block switch which is located in a back panel cabinet. The RO did not recall being notified by the technician. The USS subsequently exited the TS LCO, which had been entered at the beginning of the ACOT, when informed by I&C that the channel was back in operation. The USS did not verify with the RO or personally check that the monitor had been returned to service but relied on the statement of the I&C technician that the channel was back in operation. Step 4.3.12 of procedure 24634-2 requires that the USS be notified of the completion of the work, including the test results, and that the USS sign the Completion Sheet. The USS was notified and signed the Completion Sheet on July 21, at 12:12 am.

The cause of this event was the failure of the RO and USS to follow procedure 24634-2 which would have ensured that 2RE-12116 was returned to service upon completion of the ACOT. This event is identified as one example of Violation 50-424, 425/92-18-01: Failure to Follow Procedure.

e. 2B Diesel Generator Frequency Slow To Respond During Surveillance Test

On August 19, 1992, Unit 2 operators performed the 2B DG routine monthly surveillance per procedure 14980-2, Diesel Generator Operability Test. TS 4.8.1.1.2.a and procedure 14980-2 require that the DG voltage and frequency reach 4160 +170, -135 volts and 60 ± 1.2 Hz within 11.4 seconds after the start signal. When the DG was started, operators observed a slow response by the frequency meter and were hesitant to stop their stop watches until the meter stabilized in the acceptable frequency range. Common practice among operators is to time from the start signal until the meters first indicate operation in the required range rather than waiting for the meter to stabilize. The voltage meter was also slow to respond. The operator tapped on it several times before there was any movement. For this test, frequency was timed at 13.56 seconds, which exceeded the TS requirement of 11.4 seconds. A valid voltage time was not recorded because the voltage meter did not respond until 28 seconds after the start signal. Approximately 2 hours later a second start was attempted and the recorded times for frequency and voltage were acceptable.

The licensee organized a critique team to evaluate the cause of the apparent failure of the 2B DG. The investigation which followed tested the generator field flash relay, cylinder air start valves, control room voltmeter and frequency meter. The tests showed no problems in either the field flash relay or air start valves. The frequency meter was determined to be out of calibration by 0.4 Hz. Operator interviews also revealed possible meter sticking on both meters.

Results of the licensee's critique found two causes for the event: 1) Procedure 14980-2 did not adequately define when to end timing of the frequency response. The operators did not understand that proper frequency and voltage are achieved when the meters first indicate operation in the required range, rather than when the meters indicate a steady state operation in the required range. 2) Erratic meter indication led operators to believe that the DG was not operating within TS requirements. Subsequent tests did not identify any signs of meter failure and verified that the DG was operating within the TS limits. Except for the two erratic meter indications, there was no evidence to indicate that DG 2B would not have been able to start and accept loads as designed. Neither the frequency meter nor the voltage meter provide any control or logic function. They are solely used for indication and thus did not effect DG operability.

The licensee has initiated the following corrective actions: 1) The voltmeter has been replaced and the frequency meter will be replaced when a new meter is received on site. 2) The proper method of timing frequency and voltage will be discussed with licensed operators. 3) Proper timing methods will be discussed in

operator initial and requalification training. 4) Procedures 14980-1/2 were changed to more clearly define the proper methods for timing frequency and voltage response. Also added to these procedures was the requirement to time RPM. The additional RPM data will facilitate the investigation into any future similar events by allowing the licensee to differentiate between an engine versus a generator problem.

f. Overflow of Unit 1 Turbine Building Drain System Oily Waste Separator

At approximately 8:05 am on July 23 a PEO was performing his routine outside area inspection when he observed that the Unit 1 Turbine Building Drain System oily waste separator was overflowing. The oily waste separator receives the discharge of the turbine building sumps, separates the oil and water mixture, and discharges the filtered water to the waste water retention basin prior to eventual discharge to the Savannah River. The PEO determined that one of the separator valves was misaligned and took immediate action to open the outlet valve on the separator which quickly stopped the overflow condition by directing the water to the WWRB.

The licensee estimated that approximately 50,000 gallons of monitored non-radioactive water entered the storm drain and discharged to the Savannah River. Only a small amount of oil was determined to be present in the oily waste separator overflow.

The licensee determined that at 5:44 am on July 23, a PEO had been directed to release clearance 1-92-00662 in order to align the valves for the Unit 1 oily waste separator to a normal alignment following maintenance. The alignment included opening valve 1HV-17652 which is the outlet from the separator to the Unit 1 WWRB. The PEO initialed the clearance sheet indicating that he had opened the valve, although the valve was closed as evidenced by the overflow condition. The PEO later stated that he believed that he had opened the valve, but that the valve position indicator had been difficult to see due to its height (approximately 6 feet) above ground.

This is another example of Violation 50-424,425/92-18-01: Failure to Follow Procedure.

g. Containment Ventilation Isolation

On July 26 the containment ventilation area low range radiation monitor, 2RE-002, failed which resulted in a containment ventilation isolation. The licensee determined that no actual high radiation conditions existed, blocked 2RE-002, and restored the containment ventilation to its normal lineup. The licensee

subsequently determined that a failure of the count logic circuit board in the DPM caused the actuation.

The licensee has documented this event and corrective actions in LER 425/92-11. The inspectors will review the licensee's corrective action as part of the LER followup. The inspectors noted that radiation monitor failures continue to result in frequent ESF actuations. The inspectors reviewed LERs issued since 1990 and noted that 12 ESF actuations have occurred involving radition monitor problems during this time frame.

h. Emergency Drill

On August 13, the licensee conducted a semi-annual HP drill. The objectives of the drill were to complete all onsite and offsite notifications, to timely activate all onsite and offsite notifications, to timely activate all onsite ERFs, to respond to simulated elevated radiation measurements in the environment, to perform onsite personnel accountability, to classify an abnormal event, to properly respond to a security event involving a disgruntled employee, and to properly respond to a medical emergency. The inspector observed the drill from the location of the simulated emergency.

The drill scenario involved a bomb in one of the Emergency Diesel Generator buildings. The simulated event was initiated when security received a bomb threat by telephone.

The licensee failed to satisfactorily demonstrate the ability to perform protected area assembly and accountability. The inspector reviewed the licensee's drill critique and found all the identified weaknesses addressed and the corrective actions to be adequate. Specifically, the following deficiencies were noted by the licensee: 1) Not all personnel in the PA heard the signals or announcements for the Alert; 2) Forty minutes after declaration of the Alert fifty-seven persons were still missing; and, 3) The 911 paging system was not activated properly (operations personnel were slow to activate system and did not put 911 after the extension number to signify an emergency).

The inspector will monitor future drills to verify corrective actions have been successfully implemented.

One 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 reviewed were examined for necessary test prerequisites, instructions,

acceptance criteria, technical content, data collection, independent verification when required, handling of identified deficiencies, and review of completed work. The tests were witnessed, in whole or in part, to determine that approved procedures were available, equipment was calibrated, prerequisites were met, tests were conducted according to procedure, test results were acceptable and systems restoration was completed.

Listed below are surveillances which were either reviewed or witnessed:

Surveillance No.	Title
14802-1	NSCW Pump & Discharge Valve IST
24911-1	Delta T/T AVG Loop 1 Protection Channel II 1T-421 - ACOT
24811-2	Delta T/T AVG Loop 1 Protection Channel II - ACOT
24807-1	Refueling Water Storage Tank Level 1L 991 - ACOT

b. Missed Quarterly IST Surveillance

On July 29 during an ANII review of inservice test data, the licensee identified two valves which were not stroke tested within the surveillance interval required by TS 4.0.5. Valves 2HV-10951, Accumulator 2 sample isolation, and 2HV-10953, Accumulator 4 sample isolation valve, were tested under procedure 14825-2, Quarterly Valve Inservice Valve Test, on March 16 during a Unit 2 refueling outage. The next 14825-2 surveillance for these valves was completed on July 19. The interval between these surveillances was 124 days, which exceeds the 115 day allowable quarterly inservice testing frequency plus the maximum allowable extension.

The cause of exceeding the interval for this surveillance was inadequate procedural guidance for scheduling and tracking surveillance tasks which are performed simultaneously to meet both 18 month and quarterly surveillance requirements. Procedure 14825-2 is performed on an 18 month frequency to verify valve position indication, which also fulfills the requirements for the quarterly valve exercise test. This procedure was performed during the refueling outage. Testing for 2HV-10951 and 2HV-10953 was completed on March 16, while testing for the remaining valves on the data sheet was completed on April 23. This was completed well within the allowable interval for the 18 month surveillance. Scheduling of the next quarterly surveillance was based on the completion date of the 18 month surveillance, which did not

consider the start date for individual valves within the procedure.

The licensee reviewed current IST surveillance history and the surveillance history for the last refueling outage and did not identify additional missed surveillances. Several instances were identified where valves exceeded the required frequency but remained within the allowable extension period. The licensee initiated a revision to administrative procedure 00404-C, Surveillance Test Program, to require plant personnel to date surveillance procedures based on when the first independent task within the surveillance was completed. Scheduling of the next due date will then be based on this date. The licensee will document this event in LER 92-12.

Exceeding the maximum allowable inservice testing frequency for valves 2HV-10951 and 2HV-10953 is a violation of TS 4.0.5. This violation is not being cited because criteria specified in section VII.B of the NRC Enforcement Policy were satisfied. This violation is identified as NCV 50-425/92-18-02: Missed Quarterly IST Surveillance On Accumulator Isolation Sample Valves. The inspectors noted that these missed surveillances exposed a weakness in surveillance scheduling of IST surveillances. Tracking of these surveillances has been based on the completion date of a surveillance procedure and not based on completion of the independent surveillance tasks within a procedure. The inspectors determined that these missed surveillances were isolated instances and the overall surveillance scheduling program was adequate.

One non-cited violation was identified.

4. Maintenance Observation (62703)

a. General

The inspectors observed maintenance activities, interviewed personnel, and reviewed records to verify that work was conducted in accordance with approved procedures, TSs, and applicable industry codes and standards. The inspectors also frequently verified that redundant components were operable, administrative controls were followed, clearances were adequate, personnel were qualified, correct replacement parts were used, radiological controls were proper, fire protection was adequate, adequate post-maintenance testing was performed, and independent verification requirements were implemented. The inspectors independently verified that selected equipment was properly returned to service.

Outstanding work requests were reviewed to ensure that the licensee gave priority to safety-related maintenance activities.

The inspectors witnessed or reviewed the following maintenance activities:

MWO No.	Work Description
29202532	Fault On Inverter 2DD1I4
29201709	Replace Power Supply on PERMS Comm Console

b. Auxiliary Building Leak Walkdown

On August 12, the inspectors observed the licensee walkdown a portion of the auxiliary building to examine leaks previously identified with WRTs. The walkdowns are performed to control contamination and to minimize the number of active catch basins in the auxiliary building. The walkdowns are conducted when a sufficient number of leaking component WRTs are submitted to Work Planning (approximately every 2-4 weeks). Maintenance, Decon/HP, and Operations personnel participate in the walkdowns. Leaks which can be worked without a MWO are repaired during the walkdown. The repairs may include tightening of packing on manual valves or removal and reinstallation of threaded pipe caps. In lieu of packaging leak WRTs as MWOs, WRTs are initially assigned a tracking number (C1 MWO no.) to ensure a work history is maintained for these repairs. A WRT is converted to a MWO if the leak cannot be repaired during the walkdown, or if the mechanic performing the walkdown determines that the WRT requires a MWO or clearance to repair the leak.

A total of approximately eighteen leaks were inspected on the walkdown; of these approximately six leaks were repaired and placed in observation status, one was voided due to no leakage, and the remainder were returned to Work Planning to be processed as routine MWOs. The inspectors noted that the walkdowns were effective in reducing the number of contaminated systems with leaks; reducing the number of catch basins in the auxiliary building; reducing the number of MWOs generated; and providing a better description of equipment problems to Work Planning prior to generating MWOs for leaks that could not be repaired during the walkdown. The inspector considers this process a licensee strength.

No violations or deviations were identified.

5. Review of Shearon Harris LER 50-400/91-008, Common Cause Failure of High Head Safety Injection Alternate Miniflow

On August 12, 1992, the resident inspectors were advised by NRC Region II of an event at Shearon Harris Nuclear Plant which was potentially applicable to Vogtle. The event at Harris was documented in Harris LER 50-400/91-008, Common Cause Failure of High Head Safety Injection Alternate Miniflow. The alternate miniflow lines at both Harris and

Vogtle are designed to protect the high head injection pumps from accidents where the RCS repressurizes after safety-injection is actuated such as in a secondary break. During normal operation the charging pumps/high head injection pumps are protected from deadhead operation by normal miniflow lines. Upon receipt of a SI signal the normal miniflow automatically isolates to ensure that all SI flow is directed to the RCS and the alternate miniflow line MOVs automatically open. The alternate miniflow path for each pump is through the MOVs to a relief valve which is set to open at 2300 psig (Harris setpoint) and recirculate to the RWST. The event at Harris concerned damage to the relief valves and to test connections immediately upstream of the relief valves. The arrangement of the alternate miniflow piping at Harris is such that an air void existed between the relief valve and an upstream motor operated valve which is normally closed. The normally closed MOV automatically opens on a SI signal with a resulting water hammer due to the air void in the piping. This water hammer is believed to be the cause of damage to both the relief valve and the piping connection at Harris during pre-operational testing in 1986 and during an inadvertent safety injection in 1987.

The inspectors reviewed the Harris LER for applicability to Vogtle and determined through system drawings and discussions with the licensee that Vogtle has a similar high head injection system alternate miniflow piping arrangement. Vogtle, however, had addressed the Harris event in their response to INPO SER 91-20 which dealt with that event. On November 27, 1991, Vogtle revised procedures 13006-1/2, Chemical and Volume Control System, to include steps for filling and venting the section of the alternate miniflow piping between the relief valve and the MOV which opens on a SI signal (HV-8508A/B). Vogtle considered this action adequate to address the issue of potential water hammer. The inspectors also reviewed the maintenance history of the relief valves in question and performed a plant walkdown of the high head alternate miniflow piping. No maintenance problems were identified during the walkdown or MWO review which would indicate water hammer damage.

The inspectors did note that there were several failures of the relief valve bellows. Discussions between the licensee and the valve vendor have not determined a cause for the bellows failures; however, the bellows are scheduled to be removed during a future refueling outage on each unit. The bellows serve to prevent fluid from the outlet side of the relief valve from going up into the spring portion of the valve assembly. If fluid leaks by the bellows it flows out the valve bonnet via a drain hole which is normally unplugged. If the drain hole is plugged then a bellows failure results in an increased lift setpoint for the relief valve because the valve outlet side pressure becomes additive to the lift setpoint of the valve. An example of this would be; if the setpoint of the valve is 2200 ± 66 psig, as is the case at Vogtle, and the pressure at the outlet of the valve is 60 psig maximum (design limit of the bellows), the lift setpoint of the relief valve then becomes 2260 ± 66 psig if the bellows fails. It should also be noted that the discharge pressure of the highhead pumps is approximately 2700 psig. As a result, bellows failure does not affect the operation of the relief

valve except as described above when a drain plug is installed which is an abnormal alignment (i.e., plugged).

On August 14, during a walkdown of the alternate miniflow piping on both units, the inspectors discovered that two of the four relief valves had the drain plugs installed. The licensee was notified and urgent MWOs were written initiating drain plug removal. The licensee could not determine when or why the drain plugs were installed.

On August 13, the licensee discussed the Harris event and the applicability of the event to Vogtle at the control room shift turnover briefings. The briefing were given to all licensed operators at shift briefings to advise them of the potential for flow diversion through the high head alternate miniflow line if the relief valve should fail. The licensee has also requested the assistance of Westinghouse to evaluate the alternate miniflow piping arrangement at Vogtle. Operators will be briefed on the results of that evaluation upon its completion.

The inspectors reviewed the Vogtle EOPs to evaluate guidance to operators if a Harris type event were to occur. The EOPs do not specifically require operators to check if the CCP alternate miniflow relief path has failed following a SI. Procedure 19000-C, Reactor Trip Or Safety Injection, provides operator actions to verify proper response of the automatic protection systems following manual or automatic actuation of a reactor trip or safety injection, to evaluate plant conditions, and to identify the appropriate recovery procedure. Subsequent Operator Actions, step 17a of 19000-C, is performed if a SI is required. This step requires operators to check for BIT flow indication. BIT flow is high head safety injection flow into the reactor. There are three indicators in the Control Room available to verify BIT flow. All are based on a 0 to 1000 gpm range and include an analog gauge and chart recorder on the main control board, and a digital computer point indication on the ERF display. The inspectors reviewed the ability of these instruments to indicate low injection flow rates, since the Harris small break LOCA analysis was sensitive to small injection flow diversions. The inspectors observed these indications and determined that there is not an adequate resolution below 200 gpm on the analog gauge or chart recorder. Resolution below 200 gpm on computer display would also have minimal reliability.

Operator actions required by 19000-C would not allow for identification or prevention of the diversion of injection flow through the alternate miniflow path if a Harris-type failure occurred. However, if operators continued through 19000-C without transition to another EOP, step 28 of 19000-C requires initiation of critical safety function status tree monitoring. Entering the transition procedures available following step 4, prior to reaching step 28, also would require initiation of critical safety function status tree monitoring.

The failure of the alternate miniflow path and diversion of ECCS flow from the reactor could result in a loss of core cooling which would cause an increase in core exit thermocouple temperatures and a decrease

in RCS subcooling. The critical safety function status tree indications are displayed on the SPDS, which is safety-related. Either of these conditions would require operators to respond with procedures 19221-C and 19222-C (degraded or inadequate core cooling procedures). The shift briefing discussed above included the requirements for operators to examine the CCP alternate miniflow path if degraded or inadequate core cooling conditions are reached.

Based on this review the inspectors concluded that procedural guidance and the shift briefing information would require operators to take actions to check if the CCP alternate miniflow path has failed, even though there is no direct method to initially detect a failure similar to the failures observed at Harris. Revisions to the EOPs were determined to be unnecessary for this specific failure since the licensee's method for filling and venting this system developed in response to the INPO SER precludes potential damage due to water hammer.

No violations or deviations were identified.

6. Followup On Previous Inspection Findings (92701) (92702) (42700)

(Closed) URI 424,425/92-14-02, I&C Procedure Revised With Incorrect Data and Failure to Follow I&C Procedure.

On July 16, 1992, an I&C technician performed the delta-I portion of procedure 24811-2, Delta T/Tavg Loop 2 Protection Channel II 2T-421 ACOT and Channel Calibration. A subsequent review of the calibration data on July 17 found that the "as-left" voltage calibration values were outside allowable limits. This resulted in the loop 2 over temperature delta temperature function being inoperable and the Unit operating in a condition prohibited by TS because the inoperable loop had not been tripped within 6 hours as required. The details of the event were discussed in NRC IR 92-14. The inspectors determined that additional review of this event and a review of the licensee's procedure revision program was necessary. The inspectors also reviewed the corrective action related to a recent similar event (NRC IR 92-02).

In an effort to understand how the procedure revision error occurred, the inspector evaluated the I&C procedure revision process and interviewed appropriate supervisors and procedure writers. The inspector determined that the revision process was effective and that this event is an isolated case. Nevertheless, the licensee has made several changes to the revision program which should prevent future mistakes of this type. The following paragraphs describe the breakdown of the revision process related to procedures 24811-2 and 24813-2 and the licensee's corrective actions to prevent recurrence.

In June 1992, procedures 24810-2, 24811-2, 24812-2, and 24813-2, were revised as a group. During this revision the input values on the calculation sheet for Loop 3, 24812-2, were inadvertently typed on the calculation sheets for Loop 2, procedure 24811-2, and Loop 4, procedure 24813-2. The licensee was unable to determine how the errors were made

since the "marked up" revision documents had been destroyed and the contract procedure writer who initiated the procedure changes is no longer employed at Vogtle. After the procedure changes were typed by the "typing pool," they were reviewed by two I&C procedure writers. Each reviewer verified only those portions of the procedures where changes were anticipated. They did not review the entire procedure and had no reason to believe that other parts of the procedure had been changed. Procedures 24811-2 and 24813-2 were subsequently performed on July 16 and 17, their first use since the faulty revision, with the errors being detected on July 17 during the performance of 24813-2.

The licensee has initiated several corrective actions as a result of this event. A 100% review was performed of all I&C procedures turned over to Vogtle from short term outage contractor procedure writers. No additional discrepancies were found. A line by line, page by page, review of Unit 1 & 2 delta T/Tavg procedures was performed. No discrepancies were found. Procedure writers in the future will review the entire revised procedure page rather than just that part where changes are anticipated. The I&C superintendent issued a letter to all I&C personnel requiring that all safety channel surveillance procedure data be checked by the foreman prior to presenting the procedure to the USS as complete and satisfactory. The licensee is in the process of eliminating procedural biennial reviews through an LDCR to change Vogtle's commitment. This programmatic change will allow a significant workload reduction on the procedure writer staff. The licensee is working to implement a plan where data sheets will be stored in Document Control as controlled documents. I&C technicians would no longer perform calculations prior to each performance of the procedure, but would retrieve a current controlled copy of the data sheet from Document Control. This would eliminate the possibility of errors which now exist due to repetitious performance of calculations by technicians each time a surveillance is conducted. The group responsible for typing procedure revisions is considering a computer software change which would automatically "bold type" each change made to a procedure. This would clearly identify to procedure reviewers which part of a procedure has been changed and should help to eliminate errors in the review process.

The inspectors also reviewed the licensee's corrective actions for violation 424/92-02-01. Although the previous violation was similar in that it also involved an incorrect procedure and a failure to follow procedure by I&C technicians, the circumstances were different and the corrective action could not reasonably be expected to have prevented this event.

There were two causes of this event. The surveillance procedure was revised incorrectly and contained incorrect values for determining calibration limits, and the I&C technician failed to follow procedure. Notwithstanding the inaccurate values on the calculation sheet in procedure 24811-2 due to errors made in the revision process, if the technician had performed the procedure properly he would have been unable to achieve valid "as left" data and would have detected the procedural error and thus avoided entry into a condition prohibited by

TS. This event is identified as another example of Violation 50-425,425/92-18-01: Failure to Follow Procedure. Based on this review the URI is closed.

One violation was identified.

7. Exit Meeting

The inspection scope and findings were summarized on August 24, 1992, with those persons indicated in paragraph 1. The inspector described the areas inspected and discussed in detail the inspection findings listed below. 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.

Item No.	Description and Reference
VIO 424,425/92-18-01	Failure to Follow Procedure
NCV 425/92-18-02	Missed Quarterly IST Surveillance On Accumulator Isolation Sample Valves

8. Abbreviations

ACOT - Analog Channel Operational Test
AFW - Auxiliary Feedwater System
ANII - Authorized Nuclear Inservice Inspector
BIT - Boron Injection Tank
CCP - Centrifugal Charging Pump
CFR - Code of Federal Regulations
CVI - Containment Ventilation Isolation
DC - Deficiency Card
DG - Diesel Generator
DPM - Data Processing Module
ECCS - Emergency Core Cooling Systems
EOP - Emergency Operating Procedures
ERF - Emergency Response Facilities
ESF - Engineered Safety Feature
INPO - Institute for Nuclear Power Operations
IR - Inspection Report
ISEG - Independent Safety Engineering Group
IST - In-Service Test
LCO - Limiting Condition for Operation
LDCR - Licensing Document Change Request
LER - Licensee Event Report
MOV - Motor Operated Valve
MWO - Maintenance Work Order
NCV - Non-Cited Violation
NRC - Nuclear Regulatory Commission
NSCW - Nuclear Service Cooling Water System
PEO - Plant Equipment Operator
PERMS - Process And Effluent Radiological Monitoring System

RCS	- Reactor Coolant System
RO	- Reactor Operator
RWST	- Refueling Water Storage Tank
SAER	- Safety Audit And Engineering Review
SER	- Significant Event Report (INPO)
SI	- Safety Injection
SPDS	- Safety Parameter Display System
TS	- Technical Specifications
URI	- Unresolved Item
USS	- Unit Shift Supervisor
VIO	- Violation
WRT	- Work Request Tag
WWRB	- Waste Water Retention Basin