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REGION II

Docket Nos. 50-424 and 50-425
License Nos. NPF-68 and NPF-81

Report No: 50-424/97-05, 50-425/97-05

Licensee: Southern Nuclear Operating Company, Inc.

Facility: Vogtle Electric Generating Plant (VEGP) Units 1 and 2

Location: 7821 River Road
Waynesboro, GA 30830

Dates: April 27 through May 31, 1997

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Enclosure 2

EXECUTIVE SUMMARY

Vogtle Electric Generating Plant Units 1 and 2 NRC Inspection Report 50-424/97-05, 50-425/97-05

This integrated inspection included aspects of licensee operations, engineering, maintenance, and plant support. The report covers a five-week period of resident inspection. It also includes the results of announced inspections by regional inspectors in the areas of engineering and maintenance.

Operations

- In general, the conduct of operations was professional and safety-conscious (Section O1.1).
- The Unit 1 startup on April 30 through May 1, 1997, was performed well. The pre-briefing was thorough, reactivity adjustments were well controlled, control room distractions were actively reduced, and annunciator response procedures were used (Section O1.2).
- The 1E 480 Volt alternating current electrical distribution system was properly aligned. However, two errors in the operation's procedures used to align the system were identified. The procedures were not updated following implementation of a design change (Section O2.1).
- A violation was identified for failure to detect anomalous behavior of a Unit 2 containment sump level transmitter during a containment pressure release. This anomalous behavior was not identified despite previous occurrences of this behavior and a routine channel check of the instrument (Section O2.3).
- A violation was identified for failure to document entry into an applicable Technical Specification Limiting Condition for Operation following detection of anomalous behavior of a containment sump level transmitter (Section O2.3).
- A non-cited violation was identified for failure to follow the procedure for placing a demineralizer cation bed in service. This action resulted in an unplanned negative reactivity addition (Section O8.2).

Maintenance

- Maintenance and surveillance activities were generally completed thoroughly and professionally (Sections M1.1 and M1.2).
- Reinstallation of the main generator bearing and bearing housing was unnecessarily delayed by a personnel error that resulted in the loss of foreign material exclusion (Section M1.3).

- A weakness was identified related to the control of lever hoist misuse and the associated latent damage (Section M1.3).
- A poor work practice was noted relating to informal, undocumented work authorization for work on important reactor components (Section M1.4).
- The observed/reviewed welding activities were conducted in accordance with procedures, licensee commitments, and regulatory requirements (Section M1.5).
- A poor work practice was noted relating the issuance of multiple grades of welding filler materials to a single welder (Section M1.5).
- Material condition deficiencies were noted associated with the Unit 2 pre-purge supply system (Section M1.6).
- A poor work practice was identified concerning maintenance work conducted on the Unit 1 control room annunciator power supply inverters. This contributed to the loss of all Unit 1 control room annunciators for approximately three minutes (Section M1.7).

Engineering

- As a result of system walkdowns the inspectors identified an Unresolved Item (URI) regarding the potential lack of missile protection on the exhaust piping for the Turbine Driven Auxiliary Feedwater Pumps (Section E1.1).
- One example of a lack of attention to detail was identified in which, for almost two years, operators never questioned that the numbers listed in the surveillance procedures for four chart recorders did not match the plant instrument labels (Section E1.2).
- The 50.59 safety evaluation for Design Change Package (DCP) 94-V1, 0013-0-1 was insufficiently supported and weak in concluding that a submittal to NRC was not necessary for substitution of recorders with digital trending, multi-point indicators, or dual meters in that, it was partially based on the assumption that the recorder references would be deleted from the Technical Specifications (TSs) by MERITS, without putting in place appropriate controls to ensure that the actions were completed (Section E1.2).
- Operations failed to adequately support engineering in the closeout of the Chart Recorder Upgrade Modifications on Units 1 and 2 in that, Operations Procedures 14000-1, 14000-2, and 14490-1 were not revised to incorporate the plant changes (Section E1.2).

- Despite errors in the description of the facility, the safety evaluation appropriately supported continued operation with a loose part in the Unit 2 reactor coolant system (Section E2.1).
- Engineering support to maintenance and operations on the steam generator blowdown control system replacement was good (Section E2.2).
- The licensee's fuel oil storage tank calculations were adequate and supported level instrumentation in the control room (Section E3.1).
- The licensee has been effective in reducing and managing the engineering backlog, and the performance of the engineering support staff normally met licensee established goals for timeliness (Section E6.1).
- Safety Audit and Engineering Review (SAER) audits of engineering were effective in identifying deficiencies in engineering performance (Section E7.1).
- A non-cited violation was identified for an inadequate safety evaluation performed on a procedure used to transfer the contents of the spray additive tank. The safety evaluation failed to adequately consider all the hazards associated with blocking open plant doors to perform the procedure (Section E8.1).

Plant Support

- The scenario developed for the off-hour emergency response drill on May 27, 1997 effectively tested a combination of some of the principal functional areas of the onsite emergency response capability (Section P4.1).
- During the conduct of the May 27 drill, the performance of the emergency response organization was generally satisfactory, and emergency facilities and equipment were observed to be adequate. However, several deficiencies were identified (Section P4.2).
- The licensee's critique of the May 27 drill was probing and thorough (Section P4.3).
- A violation was identified for failure to perform a fire hose station and fire extinguisher surveillance within the required 31-day interval (Section F2.1).

Report Details

Summary of Plant Status

Unit 1

At the beginning of the inspection period, the unit was in Mode 3, with repairs to the turbine generator in progress. Following completion of this maintenance on April 30, unit startup commenced. Mode 2 was achieved on April 30, with entry into Mode 1 on May 1. Nominal power was attained on May 4, 1997. The unit operated at throughout the remainder of the inspection period.

Unit 2

The unit operated at full power until May 30, when power was reduced to approximately 63% to support repairs to the isophase bus duct cooler number 2 fan. At the completion of repairs, power ascension activities were initiated. Nominal full power was achieved on May 31, 1997.

I. Operations

O1 Conduct of Operations

O1.1 General Comments (71707)

The inspectors conducted frequent reviews of ongoing plant operations. In general, the reviews indicated that the conduct of operations was professional and safety-conscious.

O1.2 Unit 1 Startup

a. Inspection Scope (71707)

The inspectors observed portions of the Unit 1 reactor startup conducted April 30 through May 1, 1997. These observations included the transition from Mode 3, approach to criticality, and entry into the power range. The inspectors reviewed startup Procedures 12003-C, "Reactor Startup (Mode 3 To Mode 2)," Revision (Rev.) 29, and 12004-C, "Power Operation (Mode 1)," Rev. 43.

b. Observations and Findings

The pre-briefing was thorough, reactivity adjustments were well coordinated, and the licensee actively reduced control room distractions. Appropriate reference to annunciator response procedures was made. Control room communications were clear.

c. Conclusions

The startup was performed well.

O2 Operational Status of Facilities and Equipment

O2.1 Safety-Related Walkdowns

a. Inspection Scope (71707)

As part of the routine inspection effort to verify availability and overall condition of the safety-related systems, the inspectors walked down the 480 Volt 1E Alternating Current (AC) Electrical Distribution System (Units 1 and 2).

b. Observations and Findings

The inspectors verified proper system configurations through walkdowns of all 1E 480 Volt AC safety related switchgears and motor control centers. The inspectors also observed the overall material condition of the system components. During the walkdown, the inspectors identified errors in Procedures 11429-1, "480V AC 1E Electrical Distribution System Alignment," Rev. 11, and 11429-2, "480V AC 1E Electrical Distribution System Alignment," Rev. 7. Specifically, the inspectors noted that these procedures listed breakers 1ABA-06 and 2ABA-06 as power supplies to Control Building Control Room Return Air Fans 1-1531-B7-005 and 2-1531-B7-005, respectively. The breakers were labelled as spares. These loads were made spares by Design Change Package 89-V1N0297, Control Room and Technical Support Center Chlorine Detection System. However, the procedures were not updated. This was identified to the licensee for resolution. Given that the breakers were open, this error was insignificant. Other minor issues identified were forwarded to the licensee for resolution.

c. Conclusions

The inspectors concluded that the systems reviewed were available to perform their intended function and were properly aligned.

O2.2 Containment Penetrations Walkdown

a. Inspection Scope (71707)

The inspectors walked down accessible portions of the following containment penetrations to verify proper valve lineups:

<u>Penetration</u>	<u>Unit</u>	<u>Title</u>	
45	1,2	Nuclear service cooling water (NSCW) to reactor cavity coolers	supply
46	1,2	NSCW return from reactor cavity coolers	
61	1,2	Instrument air	
103,104	1,2	Auxiliary feedwater	

b. Observations and Findings

Proper valve lineups were observed for all penetrations. Minor administrative errors in Updated Final Safety Analysis Report (UFSAR) Table 6.2.4-1, Containment Penetration/Isolation Valve Information, were identified and provided to the licensee for resolution. A minor labelling error and a procedure error identified by the inspectors were also provided to the licensee.

c. Conclusion

The detected errors were minor and did not impact the proper lineup of the penetrations.

O2.3 Unit 2 Containment Sump Level Transmitter Performance

a. Inspection Scope (71707)

The inspectors reviewed the licensee's discovery of changes in indicated Unit 2 containment sump levels during a containment pressure release. This included reviews of Technical Specification (TS) Limiting Condition for Operation (LCO) status sheets; control room operator log entries; and computer trend charts and strip charts of containment sump level transmitter behavior. The inspectors also reviewed surveillance log entries made in accordance with Procedure 14000-2, "Operations Shift and Surveillance Logs," Rev. 41. In addition, cognizant management was interviewed.

b. Observations and Findings

At approximately 9:50 p.m. on April 28, 1997, the licensee entered TS LCO 3.4.15, Reactor Coolant System (RCS) Leakage Detection Instrumentation. This entry was made in response to anomalous behavior of 2L-7777, Unit 2 Containment South Sump Level and 2L-7778, Unit 2 Containment Reactor Cavity Sump Level. Both instruments displayed upward shifts in indicated sump level during a containment pressure release that occurred between 12:59 p.m. and 1:47 p.m. earlier that day. Transmitter 2L-7777 exhibited about a 7-inch increase in level, while 2L-7778 exhibited a 1-inch increase in level. Given the nominal 48-inch span of these instruments, this represented a 15% upward shift in 2L-7777 and a 2% upward shift for 2L-7778. The required action for this TS LCO required daily performance of a RCS water inventory balance surveillance and restoration of at least two of the three containment sump monitors to an operable status within 30 days.

On the following day, engineering evaluated the behavior of the transmitters during the containment pressure release. Based on the stability of the level shifts over the last six months, the change in level being limited to 2%, and indicated level eventually trending to normal over several hours, the conclusion was made that 2L-7778 did not require replacement. However, the same analysis concluded that 2L-7777 required

replacement. Based on this, 2L-7778 was determined to be operable and 2L-7777 was replaced. This LCO was exited at 2:03 p.m. on May 1, 1997.

The inspectors noted from their review of the LCO tracking sheet and the Unit 2 Shift Supervisor's Log, that the Unit 2 Shift Supervisor failed to document entry into another applicable TS LCO. An inoperable 2L-7777 also required entry into TS LCO 3.3.3, Post Accident Monitoring (PAM) Instrumentation. Entry into TS 3.3.3 was not documented on a LCO tracking sheet nor logged in the control room logs. The safety consequences of this failure were minimal. Transmitter 2L-7777 was replaced well before the expiration of the action statement of TS 3.3.3.

The inspectors also reviewed approximately a month's worth of strip chart printouts for the Unit 2 containment sump level transmitters. During this review, the inspectors identified that during a pressure release on April 6, 1997, 2L-7777 exhibited about a 5-inch change (10%) in indicated level. Similar, but smaller changes were also detected in this instrument and 2L-7778 during other containment pressure releases in the interim. Following inspector questions on the implications of the April 6, 1997, shift on the operability of the transmitter, a deficiency card (DC) was generated. The DC evaluation concluded that the 2L-7777 transmitter should have been replaced after this 5-inch shift in the level on April 6, 1997. Smaller shifts as far back as January 16, 1997, were documented by the licensee.

The inspectors reviewed the work order history for the containment and reactor cavity sump level transmitters for both units. The inspectors noted that seven previous work orders were written documenting similar occurrences of changes in indicated sump level with variations in containment pressure. A root cause and corrective action report in response to a July 1996 occurrence attributed this behavior to gas accumulation in one or both of the liquid-filled capillary lines between the differential pressure transmitter bellows and the sensing bellows. In addition to transmitter replacement, the licensee included as recommended corrective actions in the root cause evaluation, reviews to evaluate a replacement differential pressure transmitter and a corrective design change to the system if appropriate. Licensee personnel stated that they previously had planned to modify the transmitter design to incorporate a containment sump level transmitter which is not susceptible to this phenomenon.

The inspectors were also aware that an informal transmitter performance review process had been established following the July 1996 occurrence. In this process, operations personnel provided engineering personnel data on containment level transmitter performance during containment pressure releases. However, this process was not proceduralized and was not being used at the time of the most recent occurrence.

Also, the April 6, 1997, shift in 2L-7777 was not discovered during the channel check of containment normal and reactor cavity sump level monitors, performed every 12 hours in accordance with TS surveillance requirement 3.4.15.1. From the strip chart and log

entries, the inspectors noted that a day shift channel check was performed prior to the pressure release and hence prior to the shift in 2L-7777. However, the evening shift channel check was completed after the pressure release. The anomalous behavior of 2L-7777 was visible on the stripchart recording but not detected by the operator performing the evening channel check on April 6, 1997.

c. Conclusion

The failure to detect the anomalous behavior of 2L-7777 on April 6, 1997, was contrary to the requirements of 10 CFR 50, Appendix B, Criterion XVI, Corrective Actions. Two factors contributed to the licensee's failure to promptly identify and correct a condition adverse to quality. The first was the lack of a process to evaluate containment sump level transmitter performance in the face of previous transmitter failures. The second was a channel check which failed to detect unexpected transmitter performance. This is identified as Violation (VIO) 50-425/97-05-01, Anomalous Containment Sump Level Transmitter Behavior Not Identified by Licensee.

Additionally, the failure to document entry into TS 3.3.3, PAM Instrumentation on April 28, 1997, was contrary to the requirements of Procedure 10008-C, "Recording Limiting Conditions For Operation," Rev. 19. This is identified as VIO 50-425/97-05-02, TS LCO Entry Not Documented Properly.

O3 Operations Procedures and Documentation

O3.1 Walkdown of Clearances (71707)

During the inspection period, the inspectors walked down the following clearances:

19700313	Centrifugal Charging Pump (CCP) B preventive maintenance outage
19700358	Fuel handling console power 480 Volts Alternating Current (VAC)
19700427	NSCW Makeup Well Water Level Control Valve
29700074	NSCW tower fans 1 and 3 outage
29700213	2HV-1210 and 2HV-1210A Turbine Driven Auxiliary Feedwater (TDAFW) outside air damper

b. Observations and Findings

The inspectors identified one minor error in clearance 19700427 for licensee resolution. No other problems were identified.

c. Conclusion

Control and implementation of clearances were generally well controlled.

O8 Miscellaneous Operations Issues (71707)

O8.1 (Closed) Licensee Event Report (LER) 50-424/96-06 Rev. 1: Reactor Trip Due to Blown Fuse in Main Feedwater Isolation Valve

This revision to the LER provided additional information resulting from the licensee's review of this event. The inspectors reviewed the licensee's event review team report for this issue. No additional inspection is warranted. This item is closed.

O8.2 (Closed) Unresolved Item (URI) 50-424/97-04-02: Unit 1 Unplanned Negative Reactivity Addition

a. Inspection Scope (71707)

This URI documented an unplanned negative reactivity addition to Unit 1 on April 10, 1997, after placing a demineralizer cation bed in service.

The inspectors reviewed the licensee's corrective actions for this event. In addition, the inspectors reviewed measures implemented by licensee management to improve overall reactivity management.

b. Observations and Findings

Following the April 10 negative reactivity addition event, the licensee developed a new procedure for the control of demineralizers, Procedure 11912-C, "Demineralizer Control Log", Rev. 0. Based on their review, the inspectors concluded that this procedure should preclude repetition of a similar event.

As part of a comprehensive review of the event, the licensee personnel stated their intention to evaluate their methods and procedures used to control reactivity. As a result, the licensee has revised several additional procedures dealing with reactivity control, including Procedure 10000-C, "Conduct of Operations," Rev. 37; and Procedure 13009-1/2, "Chemical and Volume Control System (CVCS) Reactor Makeup Control System," Rev. 17, and Rev. 12, respectively.

c. Conclusions

The inspectors concluded that the licensee's enhancement of reactivity control was a positive step. The inspectors also concluded that the lack of documentation for the removal of the Unit 1 CVCS cation bed on March 31, 1997, was contrary to the requirements of Procedure 13006-1, "Chemical Volume and Control System," Rev. 37, Steps 4.4.2.7 and 4.4.2.9 of that procedure required that each time the cation demineralizer beds were placed in or out of service, the date, time, and boron concentration be documented. The status of the demineralizer bed on April 10, was not

documented in accordance with this requirement. However, consistent with Section VII of the Nuclear Regulatory Commission (NRC) Enforcement Policy, this is identified as Non-Cited Violation (NCV) 50-424/97-05-03, Failure to Follow Procedure for Control of CVCS Demineralizers. Based on this review, URI 50-424/97-04-02 is closed.

O8.3 (Closed) VIO 50-424/96-10-02: Unit 1 Post Accident Sampling System (PASS) Valve Mispositioned

a. Inspection Scope (71707)

This violation documented the licensee's September 19, 1993, identification that 1HV-8220, RCS hot leg PASS sample isolation valve, was mispositioned.

The inspectors reviewed the licensee corrective actions resulting from this issue.

b. Observations and Findings

As a result of several mispositioned valves, the licensee performed partial system walkdowns of various safety-related systems to verify proper lineups. Licensee management has also revised Procedure 10000-C, "Conduct of Operations," Rev. 37, to clarify expectations for periodic observation of control board system alignments. In addition, a modification was performed on the Unit 1 valve to alter the seal-in circuitry to reduce the potential for valve 1HV-8220 to inadvertently open.

c. Conclusions

The licensee's corrective actions should preclude repetition. This item is closed.

II. Maintenance

M1 Conduct of Maintenance

M1.1 Maintenance Work Order Observations

a. Inspection Scope (62707)

The inspectors observed portions of maintenance activities involving the following work orders:

19700729	Diesel generator train B fuel oil level transmitter IL-9024/IL-9025 calibration
19701205	Nuclear service cooling water (NSCW) containment coolers 1 and 2 supply valve 1HV-1806 preventive maintenance
19701270	Replace inverter and static switch on Unit 1 annunciator system with new Exeltech inverter assembly

19701523	Steam generator blowdown fuse holder replacement
19701664	NSCW train A tower makeup will not come full open
29700151	2B DG power light replacement on air dryer 22403G4001K01
29702992	2BAO3-15 NSCW pump 6 breaker not charging

b. Observations and Findings

The observed maintenance activities were performed satisfactorily.

M1.2 Surveillance Observation

a. Inspection Scope (61726)

The inspectors observed the performance or reviewed the following surveillances and plant procedures:

14000-1	Operations shift and daily surveillance logs
14030-2	Power range calorimetric channel calibration
14495-2	Auxiliary feedwater (AFW) system flow path verification
14545-2	Motor driven auxiliary feedwater (MDAFW) pump train A monthly operability test
14634-2	Solid state protection system (SSPS) slave relay K630 train A containment isolation
14803-1	Component cooling water (CCW) train A pumps (1, 3, and 5) and check valve inservice test (IST)

b. Observations and Findings

The observed surveillance activities were performed satisfactorily.

M1.3 Repair to Main Generator

a. Inspection Scope (62700)

The inspectors observed portions of maintenance activities involving Maintenance Work Order (MWO) 19701399 associated with the reinstallation of the main generator bearing and bearing housing. Observations were compared with applicable procedures and the Updated Final Safety Analysis Report (UFSAR).

b. Observations and Findings

The licensee experienced very high levels of frictional resistance in their initial attempt to reinstall the main generator bearing and bearing housing. The licensee attempted this by lubricating the bearing housing cavity and rotating the bearing and bearing housing into place. A 3000-pound force lever-operated hoist (chain fall or come-a-long) was

installed such that it would apply a tangential load to the bearing housing, thus encouraging the housing to rotate into the desired position. The inspectors observed a mechanic pull repeatedly on the lever of the hoist until he was unable to cause the lever to move. This was followed by a mechanic repeatedly striking the radial end of the housing with a "dead" mallet. Some perceptible movement was noted. This was followed by repeated cycles of applying force to the lever hoist until the lever would not move, and then repeated blows with the "dead" mallet. Circumferential movement was reported as about one inch per hour. When no further rotational movement of the bearing housing could be achieved, the licensee removed the housing and inspected the housing and cavity. The licensee identified a piece of floor matting, approximately 4"x 6"x 1/8" in size, wedged between the housing and cavity. Sections of this matting had been used to protect finished machined surfaces on the generator. The disassembly and reassembly was being accomplished under HOUSEKEEPING ZONE IV requirements defined in Procedure 00254-C, "Foreign Material Exclusion and Plant Housekeeping Programs," Revision (Rev.) 17. Procedure 00254-C, paragraphs 4.4.2.2 and 4.4.2.3, required that inspections be made before, during, and after work to identify and either remove or protect against potential debris. The licensee indicated that the foreign material exclusion efforts did not meet expectations. The preceding was an example of personnel error resulting in failure to properly implement site foreign material exclusion measures.

Review of the "Tugit® Operations, Service and Parts Manual" revealed the following: the average handle force (in pounds) required to raise the rated load of the model 245 (3000-pound) hoist, is 34 pounds (lbs.); loads to the handle by any means in excess of 34 lbs. will result in an overload condition of the hoist and will result in a dangerous condition for the user and nearby persons and property. It was clear that a large mechanic pulling repeatedly on the lever of the hoist until he was unable to cause the lever to move, would apply significantly more than 34 lbs. to the lever. Procedure 20426-C, "Control of Lifting and Rigging Equipment," Rev. 5, required an annual load test for lever hoists, with a two-month grace period. Under the licensee's program, this hoist may not be tested again for up to nine months. As the magnitude of the load applied to the bearing housing sufficient to cause the housing to move was indeterminant, the operator of the hoist was unable to determine whether he had applied a load in excess of the hoist's rated load of 3000 lbs. Thus, this non-cognitive misuse of the hoist and the associated latent damage could be a precursor to a significant event. The inspectors consider the aforementioned a weakness in the licensee's program for the control of lifting and rigging. Licensee personnel indicated that they would look into this matter further.

Procedure 25040-C, "Visual Inspection of Lifting and Rigging Equipment," Rev. 6, Paragraph 4.3.1.3, stated, "Repair of shackles by means of welding is not recommended." This statement does not assure that appropriate controls will be in place if the option of welding is taken. Licensee personnel indicated that they would look into this matter further.

c. Conclusion

The effort to reinstall the main generator bearing and bearing housing was unnecessarily delayed by a personnel error that resulted in the loss of foreign material exclusion. A weakness was identified related to the control of lever hoist misuse and the associated latent damage.

M1.4 Calibration of Tachometer Relays

a. Inspection Scope (62700)

The inspectors examined maintenance activities involving MWO 19701284 and Deficiency Card (DC) 2-97-097, associated with the verification of calibration of points 7 and 8 on diesel generator tachometer relays. The calibration of these points was inadvertently dropped from the Preventive Maintenance (PM) program as a result of a procedure change, even though the points were used for surveillances. This verification was done to validate data taken at those points after the passing of the calibration recall period. Observations were compared with applicable procedures and the UFSAR.

b. Observations and Findings

The work was done on all but one of the tachometer relays under MWO 19701284. The remaining tachometer relay (1A) had been removed from the plant and operations control, and subsequently placed in the plant's rebuild program, as the result of a damaged terminal strip. The Root Cause and Corrective Action Report attached to DC 2-97-097 recommended, in part, that a MWO be issued to collect as-found data for the removed tachometer relay and the relay be sent to the rebuild program. The licensee determined that formal written work authorization was not required for work on components in the rebuild program, and issued a verbal request to collect the as-found data. The inspectors consider informal, undocumented work authorization of work on important reactor plant components to be a poor work practice. Licensee personnel indicated that they would look into this matter further.

Procedure 22583-C, "AIRFAX 300 Series Control Tachometer Calibration," Revision 5, contained three drawings of the tachometer relay test set-up for: meter calibration; output calibration; and relay calibration. These drawings depicted the electrical connections to the two terminal strips. All three drawings showed 120 Volts Alternating Current (VAC) or 240 VAC connected across terminals 1 and 2. The eight tachometer relays in the plant had nothing connected to terminals 1 and 2. Therefore, the drawings did not reflect the actual plant configuration. Licensee personnel indicated that they would make appropriate changes to the procedure.

c. Conclusion

Work was satisfactorily done. However, informal undocumented work authorization for work on important reactor plant components is considered to be a poor work practice.

M1.5 Weldinga. Inspection Scope (62700)

To evaluate the licensee's welding program and its implementation, the inspectors reviewed procedures, observed work in progress, and reviewed selected records. Observations were compared with applicable procedures, the UFSAR, and American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code Section IX, latest at the time of qualification.

The specific area examined was NSCW pump 2-1202-P4-004 support authorized by MWO 29601076.

The inspectors reviewed records for welders and materials utilized in the MWOs. These records included: Welding Procedure Specifications (WPSs) and their supporting Procedure Qualification Records (PQRs); Welder Performance Qualification (WPQ) records; records attesting to the maintenance of welder qualification; and inspection reports and Certified Material Test Reports (CMTRs) for welding filler materials.

b. Observations and Findings

The inspectors noted that welder AAAA had been issued two grades of welding filler material: E-308L-16 (for welding stainless steel to stainless steel) and E-309L-16 (for welding carbon steel to stainless steel). Welder AAAA was assigned to make both stainless steel to stainless steel welds and carbon steel to stainless steel welds. The inspectors noted that the welding filler material was segregated by size (3/32 inch and 1/8 inch) and grade (E-308L-16 and E-309L-16) in separated pouches, but the pouches were all in the same bucket. Procedure GEN-25, "VEGP Welding Manual Control of Welding Consumable - Section 6," Revision 5, was silent regarding the issuance of multiple grades of welding filler materials to a single welder. This is considered a poor practice due to the opportunity for material mixup and its potential use in an inappropriate application.

Examined welding activities were conducted by qualified and certified welders using correct and certified welding filler materials in accordance with qualified WPSs. PQRs were reviewed and determined to be adequate.

c. Conclusion

The observed/reviewed welding activities were conducted in accordance with procedures, licensee commitments and regulatory requirements. A poor work practice was noted relating the issuance of multiple grades of welding filler materials to a single welder.

M1.6 Plant Material Condition

a. Inspection Scope (62700)

The inspectors conducted walkdown inspections of selected portions of the plant to evaluate plant material condition. Observations were compared with applicable procedures and the UFSAR.

b. Observations and Findings

In Unit 2, room 116, the inspectors noted in excess of a dozen examples of missing, loose, or not engaged closure devices and fasteners on ducting and electrical panels associated with the Unit 2 pre-purge supply system. Improperly sealed weather tight electrical panels are of concern because the environmental qualification of the panel may have been compromised. The improperly secured openings into the containment pre-purge ducting are of concern because the efficiency of the pre-purge supply system has been compromised. The licensee took immediate corrective action.

c. Conclusion

Material condition deficiencies were noted associated with the Unit 2 pre-purge supply system.

M1.7 Loss of Unit 1 Control Room Annunciators

a. Inspection Scope (62707) (71707)

The inspectors reviewed the loss of the Unit 1 control room annunciators which occurred during maintenance activities on May 22, 1997. The inspectors reviewed MWO 19701270, for replacement of the power supply inverters and electrical drawings of the annunciator power supply system. The inspectors attended portions of the licensee's meetings to review this event. In addition, the inspectors interviewed involved maintenance and operations personnel.

b. Observations and Findings

On May 22, in support of maintenance activities involving replacement of the number 2 inverter in the Unit 1 control room annunciator system, the operations shift crew inadvertently de-energized both the 115 VAC and 125 Volts Direct Current (VDC) power supplies to the control room annunciators. Operations personnel took immediate corrective actions to restore the Unit 1 control room annunciator functions. A loss of control room annunciation for a period greater than 15 minutes would have constituted a Notice of Unusual Event. However, based on the available information provided by the licensee, this event was estimated to have lasted approximately three minutes.

Prior to commencement of the maintenance activities, the Unit 1 Shift Supervisor (USS) was briefed by an Instrumentation and Controls (I&C) foreman. A review of the MWO indicated that the sequence for manipulating the power supply breakers and lifting the necessary leads during the maintenance was not documented in the work package. Instead, the planned sequence was handwritten by the I&C foreman on one of the electrical drawings and verbally communicated to the USS. Based on the inspectors' discussion with the USS, the philosophy to de-energize one source at a time was not fully understood by the USS. Hence, this was not communicated to the Balance of Plant (BOP) operator or Plant Equipment Operator (PEO). During review of this issue by the licensee, it was noted that a breakdown in the communication between maintenance and operations personnel had occurred. In addition, the operations portion of the inverter replacement, de-energizing the inverter, was performed out of sequence as desired by the I&C work group.

c. Conclusions

The inspectors concluded that attempting an evolution of this complexity without adequate procedural guidance is a poor work practice. However, since the annunciators alarm system is a non-safety related system, and not covered by 10 CFR 50 (Code of Federal Regulations) Appendix B requirements, this does not constitute a violation of regulatory requirements.

III. Engineering

E1 Conduct of Engineering

E1.1 Missile Protection of Turbine Driven Auxiliary Feedwater (TDAFW) Pump Exhaust Piping

a. Inspection Scope (37550)

The inspectors observed missile protection of various systems during walkdowns of external portions of buildings and structures.

b. Observations and Findings

On May 8, 1997, the inspectors observed the exhaust pipe for the TDAFW pump exiting the side of the Auxiliary Feedwater (AFW) building and extending upward for about four feet. The pipe had no missile protection once it exited the side of the building. The inspectors held discussions with the system engineer. The system engineer indicated that at one time the exhaust from the TDAFW pump turbine had exhausted through two pipes and that one of them had been deleted during startup testing. The drawing for the modification to remove the one pipe indicated that missile protection for the remaining pipe was not required in that if a missile hit the exhaust pipe and a single failure was taken on one motor driven AFW pump, then the one remaining motor driven pump would be sufficient.

The inspectors reviewed the Updated Final Safety Analysis Report (UFSAR). The UFSAR, section 10.4.9, described the system, in part, as being "a safety grade system, Seismic Category 1, redundant system with class 1E electrical components." Section 10.4.9.1 stated, in part, that, "Protection of the AFW system from wind and tornado is discussed in section 3.4"..."missile protection is discussed in section 3.5." Section 10.4.9.1.1, Safety Design Bases indicated, in part, that, "The AFW is protected from the effects of natural phenomena. This system is designed to remain functional after a safe shutdown earthquake or following a postulated hazard such as fire, internal missile, or high-energy line break." No specific reference to an external missile being considered was made in this section. Section 10.4.9.2.2.2 indicated that, "In the unlikely event that neither offsite nor onsite ac power is available, the turbine-driven pump can function normally for up to four hours, at which time the batteries can sustain Direct Current (DC) power during a Station Blackout (SBO)." Section 3.5 indicated, "In accordance with the requirements of 10 CFR 50, Appendix A, General Design Criteria (GDC) 2 and GDC 4, adequate missile protection is provided to ensure that those portions of the safety-related structures, systems, or components whose failure would... reduce to an unacceptable level the functioning of any plant feature required for safe shutdown,...are designed and constructed so as not to fail or cause such a failure in the event of a postulated credible missile impact." Section 8.4.1.1.2, Station Blackout Coping Analysis Assumptions, indicated that, "No design basis events or additional single failures are assumed prior to or during the station blackout event, other than the loss of one emergency diesel on the non-blackout unit."

c. Conclusion

Upon further discussions with the licensee staff, the inspectors determined that the licensee's position to be that the exhaust pipe did not have to be missile protected because each motor driven pump was a full capacity pump. The inspectors indicated that this item would be identified as Unresolved Item (URI) 50-424, 425/97-05-04, Missile Protection for the Turbine Driven Auxiliary Feedwater Pump Exhaust Line, pending a review of the design basis with the Office of Nuclear Reactor Regulation.

E1.2 Review of Completed Design Changes and Plant Modification Packages

a. Inspection Scope (37550)

The inspectors evaluated the adequacy of Design Change Packages (DCPs) to ensure compliance to 10 CFR 50.59 (Code of Federal Regulations), 10 CFR 50.71, 10 CFR 50 Appendix B, Criterion III and V, licensee commitments, Technical Specifications (TS), and applicable licensee procedures. The inspection focused on the design controls for incorporating design basis information into plant procedures. The programmatic controls were described in design control procedures 00400-C, "Plant Design Control," Rev. 23, Procedure 50006-C, "Design Change Initiation, Cancellation and Revision," Rev. 12, Procedure 50007-C, "Engineering Review of Design Change Packages," Rev. 8, and Procedure 50008-C, "DCP Implementation and Closure," Revision 8.

b. Observations and Findings

The DCPs reviewed and a description of the modifications are listed below:

- 92-VAN0205 Modified the Hydrogen Recombiner and Monitoring System
- 94-VAN0029 Replaced Post Accident Sampling System (PASS) Containment Isolation Valve, 1HV-8220
- 94-V1N0059 Added Solid State Protection System (SSPS) Containment Ventilation Isolation Block/Reset Indication
- 93-V1N0071 Modified the Piping Penetration Fan Start Control Logic
- 94-V1N0013 Chart Recorder Upgrade

The inspectors noted that the above DCPs had been reviewed and approved for implementation in accordance with the design control procedures. The 10 CFR 50.59 safety evaluations for the changes and the technical bases that an unreviewed safety question did not exist were reviewed and found to be adequate, with the exception of the safety evaluation for DCP 94-V1N0013. It concluded that, without appropriate controls being put in place, that the reference to certain recorders would be deleted by the submittal for MERITS, making it unnecessary for any submittal to the Nuclear Regulatory Commission (NRC) for substitution of the recorders with indicators. The submittal for MERITS, dated May 1, 1995, did not reflect the design changes as a result of DCP 94-V1N0013. It simply relocated the recorder references, as identified in the old technical specifications, to the proposed improved TS (ITS) Bases. The ITS were approved by NRC on September 25, 1996, with the old recorders still being referenced.

DCP 94-V1N0013-0-1 provided the design to remove, replace or upgrade various chart recorders located in the main control room. Approximately 58 recorders were deleted, 15 recorders were replaced with dual meters or Multi-point indicators, and an additional 6 recorders were replaced with new digital recorders. Four of the recorders that were replaced with dual panel meters or multi-point indicators were identified as 1FR-1818

and 1FR-1819, Containment Fan Coolers Cooling Water Flow, and 1TJR-1690 and 1TJR-1691, Nuclear Service Cooling Water (NSCW) Tower Basin temperature. In the assessment for 50.59 applicability, it was noted that Section 3/4.7.5 of the TS refers to recorders TJR-1690/1&2 and TJR-1691/1&2, and Section 4.6.2.3 refers to recorders FR-1818/1&2 and FR-1819/1&2. The 10 CFR 50.59 applicability evaluation concluded that any submittal to NRC for substitution of the subject recorders with digital trending, multi-point indicators, or dual meters was not necessary because the reference to these instruments was being deleted by MERITS and the fact that the instruments were referenced in parentheses in the TS and the footnote to TS 3/4.0 clarified this to mean that the references were for "information only."

The licensee's MERITS submittal was dated May 1, 1995. Contrary to the above, the MERITS submittal did not delete the references to the subject recorders. Instead, the references were moved to the Bases of TSs, and the footnote to Section 3/4.0 was deleted. Subsequent to the licensee's submittal for MERITS, on July 13, 1995, recorders 1TJR-1690 and 1TJR-1691 were replaced with multi-point indicators and on August 1, 1995, recorders 1FR-1818 and 1FR-1819, were replaced with new dual panel meters. The submittal on MERITS was not revised to add the new indicators and meters and delete the references to the recorders. The inspectors found that TS Bases surveillance requirement (SR) 3.6.6.3 refers to recorders FR-1818/1&2 and FR-1819/1&2 and SR 3.7.9.2 refers to recorders TJR-1690/1 and TJR-1691/1, which are no longer installed in the plant. The new indicators or meters have almost identical plant identification numbers as the old recorders, with one exception, the "R" was replaced by "I" so that for example, deleted recorder 1TJR-1690 is now indicator 1TJI-1690. Later during this inspection, the licensee determined that Procedures 14000-1, 14000-2 (Unit 2 procedure), and 14490-1 had not been revised to delete references to the old recorders and add the new indicators. The licensee documented this problem on a Deficiency Card (DC) 1-97-242 to investigate the root cause for the procedures and its bases not being revised, and to identify corrective actions. The inspectors noted that the affected procedures were required to be performed every shift change and that for almost a two-year period, operations had not questioned the fact that the instrument numbers listed in the procedures did not match the labeling in the plant. The inspectors considered this to be an example of a lack of attention to detail by the operators. The examples of TS bases and procedures not being revised to delete the recorder references demonstrate a weakness in the design controls for ensuring that design basis information is incorporated into plant procedures to reflect plant modifications. As part of the Return to Service evaluation for the new indicators, operations was to ensure that procedures had been correctly revised to incorporate the changes in the plant. The closure package for the above modification indicated that operations had been informed of the status of the modification and that operations informed engineering that the appropriate procedures had been revised.

c. Conclusions

One example of a lack of attention to detail was identified in which for almost two years operators never questioned that the numbers listed in the surveillance procedures for four chart recorders did not match the plant instrument labels.

The 50.59 safety evaluation for DCP 94-V1N0013-0-1 was insufficiently supported and weak in concluding that a submittal to NRC was not necessary for substitution of recorders with digital trending, multi-point indicators, or dual meters in that it was partially based on the assumption that the recorder references would be deleted from the TSs by MERITS without putting in place appropriate controls to ensure that the actions were completed.

Operations failed to adequately support engineering in the closeout of the Chart Recorder Upgrade Modifications on Units 1 and 2 in that Operations Procedures 14000-1, 14000-2, and 14490-1 were not revised to incorporate the plant changes.

E2 Engineering Support of Facilities and Equipment

E2.1 Loose Part In Unit 2 Reactor Coolant System (RCS)

a. Inspection Scope (37551)

The inspectors reviewed the licensee's actions taken in response to a potential loose part detected in the Unit 2 RCS.

b. Observations and Findings

On May 16, 1997, a vendor analysis of tape recordings made from the Unit 2 digital metal impact monitoring system (DMIMS) identified a probable loose part in the Unit 2 RCS. The object was identified by the vendor as a small metal object, less than a quarter pound in weight. The object was detected on DMIMS channel 753, indicating that the object was probably located in the lower plenum of the reactor pressure vessel.

The presence of this probable loose part was reported to the NRC Operations Center in a one-hour non-emergency report later that day. Additionally, the licensee submitted a written followup report to the NRC on May 29, 1997.

The inspectors reviewed a written safety evaluation performed by the vendor which concluded that continued operation with the loose part was acceptable. The safety evaluation was also reviewed by NRC personnel. The inspectors also attended a Plant Review Board (PRB) meeting on May 22, 1997, during which this safety evaluation was reviewed. The inspectors found that the safety evaluation, while very methodical in its approach, contained numerous errors regarding the integrated arrangement of Plant Vogtle. This was the subject of considerable discussion at the PRB meeting. Plant

management informed the inspectors that they intended to discuss this issue with the vendor.

c. Conclusion

The inspectors concluded that, despite errors, the safety evaluation appropriately supported continued operation with a loose part in the Unit 2 RCS.

E2.2 Modification Implementation

a. Inspection Scope (37550)

The inspectors reviewed and observed modification implementation activities associated with the Steam Generator Blowdown Control System Replacement per Minor Design Change (MDC) 97-V1M019.

b. Observations and Findings

After an operating event that resulted in the Steam Generator Blowdown panel being flooded with water, which caused several control cards in the racks to have electrical shorts, engineering recommended that a modification be implemented to replace the old analog controllers in the panels with new digital controllers. MDC 97-V1M019 was developed by Engineering Support to replace the analog control card racks and controllers and to install digital electronic single loop controllers. The inspectors reviewed the MDC package. It contained the required assessment by 10 CFR 50.59, unreviewed safety question criteria, required functional testing, and job task activities. The inspectors found it to be adequate. The as-built modifications were examined and determined to be consistent with the modification scope. The electrical wiring and terminations inside the panel were examined and found to be satisfactory.

c. Conclusions

The inspectors concluded that engineering support to maintenance and operations on the steam generator blowdown control system replacement was good.

E3 Engineering Procedures and Documentation

E3.1 Diesel Generator (DG) Fuel Oil Storage Tank Calculations

a. Inspection Scope (37551)

As a result of a DG fuel oil storage tank low level annunciator in the Unit 1 control room, the inspectors reviewed the fuel oil storage tank level instrument calibrations procedures, engineering tank calculations, system drawings, vendor instrumentation specifications, and fuel oil chemistry control procedures. This effort also included

discussions with Instrument and Controls (I&C) technicians, instrumentation engineers, and I&C and engineering supervision as to the determination of the TS minimum fuel oil storage tank level indicated in the control room.

b. Observations and Findings

The inspectors reviewed the DG fuel oil storage tank capacity calculation provided by the licensee. The inspectors determined that in their original calculation (number X4C2403V01, 1982) the licensee appropriately considered only the useable portion of the fuel oil storage tank to be available. To ensure that enough useable fuel was available to meet the seven-day inventory requirement, the licensee determined that the minimum level in the tank needed to be maintained above 76% indicated level (68,000 gallons). The TS minimum was also 76% of span indicated. The level indicated in the control room included an unusable portion of fuel (the bottom 15 inches of the tank, 3058 gallons). The inspectors questioned the validity of indicating available fuel when, in fact a portion of that fuel was unusable.

Based on a revised calculation (number X4C2403V08, Standby Diesel Generator Fuel Oil Consumption and Storage Tank Capacity, 1992), performed to support an Engineering Distribution System Functional Inspection (EDSFI), the licensee determined that more fuel was necessary to support operation of one diesel for seven days than was contained in one tank (one storage tank holds approximately 80,000 gallons; the new minimum volume required approximately 85,350 gallons). This new fuel level required taking credit for fuel contained in the opposite train tank. Therefore, although the licensee's instrumentation in the control room indicated an unusable portion of fuel, the accuracy of the level indicated for one tank becomes a less significant issue. Due to the revised requirement, the licensee was only required to ensure that 85,350 gallons were available. Total available fuel oil onsite with two tanks each at 100% capacity equaled approximately 129,884 gallons per unit.

c. Conclusions

The inspectors concluded that the licensee's fuel oil storage tank calculations were adequate and supported level instrumentation in the control room. Onsite fuel inventories met TS minimum requirements.

E6 Engineering Organization and Administration

E6.1 Review of Engineering Backlog

a. Inspection Scope (37550)

The inspectors reviewed the backlog of open items in the Engineering Support and Plant Modifications and Maintenance Support departments. The combined open items backlog for the above Engineering departments included Design Change Requests

(DCRs), MDCs, Temporary Modifications, Request for Engineering Review (RER) Reports, Engineering Maintenance Work Orders (MWOs), Vendor Document Reviews, DCs, open items, and open commitment items.

b. Observations and Findings

The licensee provided the inspectors historical trend reports showing the numbers of open items during the periods from January 1993 through March 1997, and December 1996 through March 1997. By reviewing these reports, the inspectors found that the backlog of open DCRs and MDCs for the period of December 1996 through March 1997 remained relatively stable. However, the number of open Temporary Modifications increased slightly, but none were older than one fuel cycle, which met department team goals of less than one fuel cycle. The average number of days required for engineering to disposition open items (i.e., DCs, MWOs, and Vendor documents) usually met team goals. The only exception was the time required to disposition RERs, which on average took 30 days, and the team goal was less than or equal to 24 days. The long term performance over the period from January 1993 to March 1997, showed an overall downward trend in all categories of open items. The inspectors noted that open items and open commitment items were not included in the licensee's historical reports on open items. These items were assigned due dates and were tracked by the licensee's Commitment Tracking Program. The status of these items was reported to management twice weekly. The inspectors reviewed the status report on open items dated May 12, 1997, and determined that no engineering open items were past due.

c. Conclusions

The inspectors concluded that the licensee has been effective in reducing and managing the backlog. The performance of the engineering support staff normally met team goals for timeliness.

E7 Quality Assurance (QA) in Engineering Activities

E7.1 Review of QA Audit Reports

a. Inspection Scope (37550)

The inspectors reviewed Safety Audit and Engineering Review (SAER) Audits of onsite engineering and technical support to verify that audits were being conducted in accordance with the requirements of 10 CFR 50 Appendix B, Criterion XVIII.

b. Observations and Findings

The inspectors reviewed recent audits performed in the areas of Environmental Qualification (EQ), Inservice Inspection Program, Programmatic Sampling for Licensing Basis Conformance, and Materials Control. All of the audits concluded that the Quality

Assurance Program was being adequately implemented. However, there were some audit findings, comments, and recommendations identified in the areas examined. For example, in the EQ area, three Audit Finding Report items were identified involving Environmental Summary Sheets, and System Component Evaluation Work Sheets that were not revised as required, EQ Post-Accident Monitoring System components that were not listed in the EQ preventive maintenance program, and EQ Checklists were not being completed in accordance with procedural requirements. The Audit of Programmatic Sampling for Licensing Basis Conformance identified an inadequate 50.59 safety evaluation that had been performed to support a change to the Updated Final Safety Analysis Report. The inspectors noted that the audit findings had been reported to the appropriate management.

c. Conclusions

SAER Audits of engineering were effective in identifying deficiencies in engineering performance.

E8 Miscellaneous Engineering Issues

E8.1 (Closed) URI 50-424/97-04-06: Adequacy of Licensee's Safety Evaluation For Sodium Hydroxide Transfer

a. Inspection Scope (37551)

This URI documented the inspectors' concerns with a safety evaluation performed for Temporary Procedure T-CHEM-97-01, "Transfer, Neutralization, and Disposal of Spray Additive Tank Contents," Revision (Rev.) 0.

The inspectors reviewed Procedure 00056-C, "Safety and Environmental Evaluations," Rev. 15; Procedure 00432-C, "Penetration Seal Control," Rev. 7, and a hazards analysis performed after questions were raised by the licensee and the inspectors about the procedure. Additionally, the inspectors interviewed cognizant personnel as to the licensee's review of this issue.

b. Observations and Findings

The inspectors noted from their review that the safety evaluation performed for Procedure T-CHEM-97-01 contained detailed information, indicating that the review performed by the licensee was not superficial. However, the safety evaluation failed to appropriately consider the impact of doors blocked open for the transfer on the operation of the piping penetration area filtration and exhaust system and equipment flood protection. This was contrary to the requirements of Procedure 00056-C.

As corrective actions, licensee personnel informed the inspectors that they have or will conduct hazards awareness training for key engineers, fire protection technicians, and

licensed operators; inform plant personnel through notices and electronic mail of the need to be sensitive to altering door positions without adequate evaluation; and developing a database and associated procedures to enhance door control.

The failure to adequately evaluate the hazards associated with the performance of Procedure T-CHEM-97-01 was contrary to the requirements of Procedure 00056-C. However, consistent with Section VII of the NRC Enforcement Policy this was identified as Non-Cited Violation (NCV) 50-424/97-05-05, Safety Evaluation Does Not Adequately Consider Hazards Associated With Open Plant Doors.

c. Conclusions

The inspectors identified a non-cited violation for an inadequate safety evaluation performed on a procedure to transfer the contents of the spray additive tank.

IV. Plant Support

P2 Status of EP Facilities, Equipment, and Resources

P2.1 Facility Inspection (71750)

The inspectors conducted tours of the Emergency Operations Facility (EOF), Technical Support Center (TSC), and the Operations Support Center (OSC). The conditions found were acceptable. The inspectors noted that the housekeeping in the mechanical equipment room for the EOF was markedly improved over that noted during their last tour.

P4 Staff Knowledge and Performance in EP

P4.1 Drill Scenario

a. Inspection Scope (82302)

In preparation for evaluation of the emergency response drill on May 27, 1997, the inspectors reviewed the licensee's scenario to determine whether provisions had been made to test a combination of at least some of the principal functional areas of the onsite emergency response capability, as required by Section IV.F.2.b of Appendix E to 10 CFR Part 50.

b. Observations and Findings

The drill scenario involved an off-hour mobilization of the emergency response organization (ERO) based on the simulated declaration of an Alert classification at approximately 8:00 p.m., with no further escalation of the emergency classification

anticipated. The scenario included an aircraft crash with damage to a nuclear service cooling water tower, a fire, and an offsite release of radioactivity (all casualty conditions were simulated). The scenario was designed to effect activation of the TSC and OSC, and a standby status (staffed but not fully operational) for the EOF.

c. Conclusions

The inspectors concluded that the scenario developed for this drill effectively tested a combination of some of the principal functional areas of the onsite emergency response capability.

P4.2 Emergency Response Drill

a. Inspection Scope (71750, 82301)

The inspectors witnessed licensee performance during an after-hours recall drill on May 27, 1997. Inspectors observed portions of licensee activities in the control room, TSC, OSC, and EOF to determine whether adequate facilities and equipment were available and maintained to support an emergency response, and to determine whether the ERO was adequately staffed and capable of responding to an emergency situation at the Vogtle facility. The inspectors also observed a portion of the activities of one field monitoring team.

b. Observations and Findings

The drill started at approximately 7:30 p.m. and lasted for approximately 3 hours. Specific inspector observations included:

- The first three emergency notifications had limited descriptions of the emergency. More detailed information was available and should have been provided.
- The licensee's initial categorization of the event as an Alert was appropriate.
- The event progressed to a Site Area Emergency despite the fact that an Alert was the highest emergency classification anticipated by the scenario (a development attributable to faults with controller data inputs rather than player performance).
- Notifications of state, local, and NRC authorities met regulatory requirements.
- The staffing of the TSC and OSC was accomplished in accordance with emergency plan requirements.

- EP facilities and equipment were adequate to support the response activities of the ERO.

The inspectors determined that at least six individuals recalled to the site, who responded to the TSC and OSC, failed to sign in on the appropriate emergency response facility roster data sheet. This sheet includes a question as to whether the recalled individual has consumed alcohol in the previous five hours. Pending additional inspector review of this issue, this is identified as Unresolved Item (URI) 50-424, 425/97-05-06, Fitness For Duty Statements Potentially Missing for Recalled Individuals.

c. Conclusion

The inspectors concluded that the EP facilities and equipment were adequate, and ERO performance was satisfactory. However, several deficiencies were identified.

P4.3 Drill Critique

a. Inspection Scope (71750.82301)

The inspectors observed the player critiques immediately after the drill and the controller/evaluator critique the following day to determine whether weaknesses and deficiencies in the drill were identified and formally presented to licensee management.

b. Observations and Findings

The licensee's critique process successfully identified the significant areas that created response problems during the drill. The major findings were in the areas of dose assessment, field monitoring, content of offsite notification messages, and the assembly/accountability process. The critique results were presented to plant management on May 29, 1997. The licensee's Emergency Plan specified the development of corrective actions for identified deficiencies and the tracking of same to ensure resolution.

c. Conclusions

The inspectors concluded that the critique process was probing and thorough.

S3 Security and Safeguards Procedures and Documentation

S3.1 (Closed) Violation (VIO) 50-424, 425/96-10-05: Designated Vehicle Left Unattended Inside the Protected Area

a. Inspection Scope (71750)

This violation involved the licensee's identification of a designated vehicle not being properly secured inside the protected area on August 26, 1996. In response to this issue, the inspectors reviewed the licensee's corrective actions.

b. Observations and Findings

The licensee has implemented a key control program. Coiled lanyards have been issued that attach to the driver and to the ignition keys of designated vehicles. This should reduce the potential for leaving the key in a designated vehicle. In addition, the licensee has revised the Physical Security and Contingency Plan to reduce the number of designated vehicles approved for entry into the protected area.

c. Conclusions

The inspectors concluded that the licensee's corrective actions were adequate. Based on this review, VIO 50-424, 425/96-10-05 is closed.

F2 Status of Fire Protection Facilities and Equipment

F2.1 Fire Protection Surveillance Not Performed

a. Inspection Scope (71750)

During routine tours of the plant on May 12 and 13, 1997, the inspectors identified approximately six fire hose stations and five fire extinguishers with out-of-date inspection stickers. The inspectors reviewed the surveillance requirements contained in Procedure 29100-C, "Portable Fire Extinguishers and Fire Hose Stations Visual Inspections," Revision (Rev.) 8; and Procedure 29134-C, "Portable Fire Extinguishers Annual Surveillance," Rev. 4; associated surveillance task sheets; and Updated Final Safety Analysis Report (UFSAR), Section 9.5.1, "Fire Protection Program;" and Table 9.5.1-10c, "Fire Hose Stations." The inspectors also interviewed fire protection personnel regarding the fire protection surveillance program.

b. Observations and Findings

During inspection activities in the Unit 2 Nuclear Service Cooling Water (NSCW) towers and the fire pump house, the inspectors questioned out-of-date inspection stickers on 11 fire extinguishers. Specifically, six fire hose stations in Unit 2 NSCW tower tunnels and five fire extinguishers located at the fire pump house were found with expired stickers. The requirement to inspect fire hose stations was contained in UFSAR Table 9.5.1-10, Section 5.4.1, which stated that each of the fire hose stations given in Table 9.5.1-10c shall be demonstrated operable at least once per 31 days by a visual inspection of the

fire hose stations accessible during plant operation. The requirement to inspect fire extinguishers was contained in NFPA 10 (National Fire Protection Association). Procedure 29100-C, Checklist 1, was used by the licensee to accomplish these visual inspection requirements. This procedure checklist was applicable to the fire extinguishers identified by the inspectors.

Once questioned, the licensee reviewed the surveillance status of all fire hose stations and fire extinguishers contained in Procedure 29100-C, Checklist 1. A total of 20 fire hose stations located in the both Unit 1 and Unit 2 NSCW tunnels failed to have the required inspection performed in accordance with the interval specified in UFSAR Table 9.5.1-10 (31-day interval). In addition, all 157 fire extinguishers listed in Procedure 29100-C were also found to not have been inspected within the required 31-day time frame. As immediate corrective action, the licensee inspected the lapsed fire hose stations and fire extinguishers within the fire protection program's action statement requirements of 24 hours with satisfactory results.

Licensee personnel later determined that due to incorrect assumptions and use of an annual inspection procedure for the previous month's inspection, they failed to accomplish the visual inspection during the month of April. The monthly surveillance was last performed on April 3, and not completed again until May 13, 1997. A total of 40 days elapsed between successful performances of the fire hose station and fire extinguisher inspections.

c. Conclusions

The inspectors concluded that the licensee failed to perform the fire extinguisher and fire hose station surveillance within the required 31-day period. This was contrary to procedure requirements and identified as VIO 50-424, 425/97-05-07, Fire Extinguisher and Hose Station Missed Surveillance.

F2.2 Disabled Fire Protection Computer Trouble Alarm

a. Inspection Scope (71750)

On May 9, 1997, the inspectors were informed by licensee management that the fire computer trouble alarm had been temporarily disabled by the on-shift Unit 1 Shift Supervisor (USS) on May 4, 1997. As part of a limited review, the inspectors reviewed Procedure 17103A-C, "Annunciator Response Procedures for Fire Alarm Computer," Rev. 1. In addition, the inspectors met with the involved USS and had limited discussions with licensee management as to the review of this event.

b. Observations and Findings

On May 4, 1997, the Unit 1 USS disabled the fire computer alarm function for approximately 10 minutes by placing a piece of paper in the "silence button" to maintain

it in the depressed (silent) position. According to statements made to the inspectors, the USS disabled the fire computer silence button in an effort to maintain the focus of the Reactor Operator (RO) on plant reactivity. The USS stated that the fire computer trouble alarm had been received four to five times within a few minutes. The alarm, in his opinion, became a nuisance and was potentially distracting the RO at the controls. The Unit 1 RO, at the time of the fire computer trouble alarm, was the sole licensed reactor operator in the control room. The Balance Of Plant (BOP) operator was temporarily out of the control room.

The applicable guidance provided for control room personnel was contained in Procedure 17103A-C. Section 3.0, Response To a Computer Trouble Alarm, step 3.1, which stated to "DEPRESS ALARM SILENCE button and red ACK [Acknowledge] key until alarm silences." The USS did not follow the procedure guidance for response to a computer trouble alarm.

Licensee management is currently reviewing the circumstances surrounding this issue.

V. Management Meetings and Other Areas

X Review of Updated Final Safety Analysis Report (UFSAR)

A recent discovery of a licensee operating its facility in a manner contrary to the UFSAR description highlighted the need for a special focused review that compares plant practices, procedures and/or parameters to the UFSAR descriptions. While performing the inspections discussed in this report, the inspectors reviewed the applicable portions of the UFSAR that related to the areas inspected. Except as noted above the inspectors verified that the UFSAR wording was consistent with the observed plant practices, procedures and/or parameters.

X1 Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management at the conclusion of the inspection on June 4, 1997. The licensee acknowledged the findings presented.

The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

J. Beasley, Nuclear Plant General Manager
 B. Brown, Manager Emergency Preparedness and Training
 W. Burmeister, Manager Engineering Support
 S. Chesnut, Manager Operations
 J. Gasser, Plant Operations Assistant General Manager
 K. Holmes, Manager Maintenance
 P. Rushton, Plant Support Assistant General Manager
 M. Sheibani, Nuclear Safety and Compliance Supervisor
 C. Stinespring, Manager Plant Administration
 C. Tippins, Jr., Nuclear Specialist I

INSPECTION PROCEDURES USED

IP 37550: Engineering
 IP 37551: Onsite Engineering
 IP 61726: Surveillance Observations
 IP 62700: Maintenance Implementation
 IP 62707: Maintenance Observations
 IP 71707: Plant Operations
 IP 71750: Plant Support Activities
 IP 82301: Evaluation of Exercises for Power Reactors
 IP 82302: Review of Exercise Objectives and Scenarios for Power Reactors

ITEMS OPENED AND CLOSED

Opened

50-425/97-05-01	VIO	Anomalous Containment Sump Level Transmitter Behavior Not Identified by Licensee (Section O2.3)
50-425/97-05-02	VIO	TS LCO Entry Not Documented Properly (Section O2.3)
50-424/97-05-03	NCV	Failure To Follow Procedure for Control of CVCS Demineralizers (Section O8.2)
50-424, 425/97-05-04	URI	Missile Protection for the Turbine Driven Auxiliary Feedwater Pump Exhaust Line (Section E1.1)
50-424/97-05-05	NCV	Safety Evaluation Does Not Adequately Consider Hazards Associated With Open Plant Doors (Section E8.1)

50-424, 425/97-05-06	URI	Fitness for Duty Statements Potentially Missing For Recalled Individuals (Section P4.2)
50-424, 425/97-05-07	VIO	Fire Extinguisher and Hose Station Missed Surveillance (Section F2.1)

Closed

50-424/96-06, Rev.1	LER	Reactor Trip Due to Blown Fuse in Main Feedwater Isolation Valve (Section O8.1)
50-424/97-04-02	URI	Unit 1 Unplanned Negative Reactivity Addition (Section O8.2)
50-424/97-05-03	NCV	Failure to Follow Procedure for Control of CVCS Demineralizers (Section O8.2)
50-424/96-10-02	VIO	Unit 1 Post Accident Sampling System (PASS) Valve Mispositioned (Section O8.3)
50-424/97-04-06	URI	Adequacy of Licensee's Safety Evaluation For Sodium Hydroxide Transfer (Section E8.1)
50-424/97-05-05	NCV	Safety Evaluation Does Not Adequately Consider Hazards Associated with Open Plant Doors (Section E8.1)
50-424, 425/96-10-05	VIO	Designated Vehicle Left Unattended Inside the Protected Area (Section S3.1)