UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
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ATLANTA, GEORGIA 30303-8931

July 29, 2002

Southern Nuclear Operating Company, Inc.
ATTN: Mr. J. B. Beasley, Jr., Vice President
Vogtle Electric Generating Plant
P. O. Box 1295
Birmingham, AL 35201-1295

SUBJECT: VOGTLE ELECTRIC GENERATING PLANT - NRC INTEGRATED INSPECTION REPORT 50-424/02-02 AND 50-425/02-02

Dear Mr. Beasley:

On June 29, 2002, the Nuclear Regulatory Commission (NRC) completed an inspection at your Vogtle Electric Generating Plant facility. The enclosed report documents the inspection findings which were discussed on July 12, 2002, with Mr. J. Gasser and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based upon the results of this inspection, the inspectors identified two issues of very low safety significance (Green) that were determined to involve violations of NRC requirements. However, because of the very low safety significance and because the issues were entered into your corrective action program, the NRC is treating these issues as Non-Cited Violations in accordance with Section VI.A.1 of the NRC's Enforcement Policy. If you deny any non-cited violations contained in the attached inspection report, you should provide a response with the basis for your denial, within 30 days of the date of this inspection report, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Vogtle facility.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be publicly available in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is

accessible from the NRC Web site at *http://www.nrc.gov/reading-rm/adams.html* (the Public Electronic Reading Room).

Sincerely,

/RA/

Stephen J. Cahill, Chief
Reactor Projects Branch 2
Division of Reactor Projects

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

Enclosure: Integrated Inspection Report
50-424/02-02 and 50-425/02-02
w/Attachment

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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos. 50-424 and 50-425

License Nos. NPF-68 and NPF-81

Report No: 50-424/02-02 and 50-425/02-02

Licensee: Southern Nuclear Operating Company, Inc. (SNC)

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

Location: 7821 River Road
Waynesboro, GA 30830

Dates: March 31, 2002 through June 29, 2002

Inspectors: J. Zeiler, Senior Resident Inspector
T. Morrissey, Resident Inspector
L. Mellen, Sr. Operations Engineer
(Sections 1EP1, 1EP4, and 4OA1.3)
W. Sartor, Sr. Emergency Preparedness Inspector
(Sections 1EP1, 1EP4, and 4OA1.3)
J. Wallo, Security Inspector (Section 3PP)

Approved by: Stephen J. Cahill, Chief
Reactor Projects Branch 2
Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000424-02-02, IR 05000425-02-02, on 03/31-06/29/2002; Southern Nuclear Operating Company, Inc., Vogtle Electric Generating Plant, Units 1 and 2, post-maintenance testing, refueling and outage activities.

The inspection was conducted by the resident inspectors, two regional inspectors, and a security specialist inspector. The inspectors identified two findings (Green) which were non-cited violations. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609 "Significance Determination Process" (SDP). Findings for which the SDP does not apply are indicated by "No Color" or by the severity level of the applicable violation. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described at its Reactor Oversight Process website at *http://www.nrc.gov/reactors/operating/oversight.html*.

A. Inspector Identified Findings

Cornerstone: Barrier Integrity

- Green. A Non-Cited Violation of Technical Specification 5.4.1.a was identified for plant personnel failing to follow safety related maintenance activity procedures associated with emergency closure of the containment equipment hatch during reactor vessel refueling. The procedure violations had the potential to affect the licensee's capability to promptly close the containment equipment hatch during a fuel handling accident.

  The finding was of very low safety significance because no fuel handling event actually occurred requiring implementation of the containment equipment hatch emergency closure procedure and the discrepancies identified would likely not have resulted in preventing the licensee's capability of closing the equipment hatch at the time the issue was identified. In addition, the licensee's analyses of a fuel handling accident without closure of the equipment hatch does not result in radiological exposures to the public or control room operators that exceed regulatory limits. The direct cause of this finding involved the cross-cutting area of Human Performance (Section 1R20).

Cornerstone: Mitigating Systems

- Green. A Non-Cited Violation of Technical Specification 5.4.1.a was identified for plant personnel failing to follow safety related maintenance activity procedures associated with the construction of scaffold near/around safety-related equipment in containment and a Nuclear Service Cooling Water pump. The procedure violations resulted in numerous scaffold construction deviations that were not evaluated for adequacy by engineering to ensure that safety-related equipment would not be adversely impacted by the scaffold during a seismic event.

  This finding was of very low safety significance because the procedure deviations would most likely not have resulted in the actual collapse of the scaffold during a design basis seismic event. However, failure to follow scaffold construction procedures was identified as a widespread problem due to the multiple examples that were identified. The direct cause of this finding involved the cross-cutting area of Human Performance (Sections 1R19 and 1R20).

B. Licensee Identified Violations

Violations of very low significance which were identified by the licensee have been reviewed by the inspectors. Corrective actions taken or planned by the licensee appear reasonable. These violations are listed in section 4OA7 of this report.

Report Details

Summary of Plant Status

Unit 1 began the period in a refueling outage. On April 18, the unit was restarted following the completion of the refueling outage. On April 20, the reactor was manually tripped from 28% Rated Thermal Power (RTP), due to high steam generator water level. The unit was restarted that same day. The unit attained 100% RTP on April 24 and remained at essentially full power for the remainder of the inspection period.

Unit 2 operated at essentially 100% RTP throughout the inspection period.

1. REACTOR SAFETY
Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R04 Equipment Alignment

.1 Partial System Alignments

a. Inspection Scope

The inspectors conducted partial walkdowns of the following three systems when the redundant equipment was inoperable. The inspectors compared actual system configuration to licensee Procedure 14406-1, Boron Injection Flow Path Verification - Shutdown, Procedure 13006-1, Chemical and Volume Control System, and Procedure 13610-1, Auxiliary Feedwater System, to verify the systems were correctly aligned. Other documents reviewed are listed in the Attachment to this report.

- Portions of the Unit 1 Chemical Volume and Control System (CVCS) and Safety Injection (SI) systems associated with the boron injection flow path
- 1A High Head Safety Injection (HHSI) system
- 1B Motor Driven Auxiliary Feedwater (MDAFW) system

b. Findings

No findings of significance were identified.

.2 Complete System Walkdowns

a. Inspection Scope

The inspectors conducted a detailed review of the accessible portions of the Unit 1 Train 'A' Residual Heat Removal (RHR) system. The inspectors focused on verifying adequate material condition and correct system alignment. The inspectors used licensee Procedure 11011-1, Residual Heat Removal System Alignment, and other documents listed in the Attachment to verify proper system alignment. The detailed review also checked electrical power availability, labeling, hangers and support

installation, and support systems status. A review of outstanding maintenance work orders (MWO's) was performed to verify that the items did not significantly affect the RHR system function. In addition, the inspectors reviewed the Condition Report (CR) database to verify that RHR equipment alignment problems were being identified and appropriately resolved.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

a. Inspection Scope

The inspectors conducted tours of seven plant areas to verify the licensee was controlling combustible materials and ignition sources as required by licensee Procedure 92015-C, Use, Control, and Storage of Flammable/Combustible Materials, and Procedure 92020-C, Control of Ignition Sources. The inspectors also assessed the condition of fire detection, suppression, and protection systems and reviewed the licensee's fire protection Limiting Condition for Operation (LCO) log and CR database to verify that the corrective actions for degraded equipment were identified and appropriately prioritized. The inspectors reviewed the licensee's fire protection program to verify the requirements of Updated Final Safety Analysis Report (UFSAR) Section 9.5.1, Fire Protection Program, and Appendix 9A, Fire Hazards Analysis were met. Documents reviewed to support these inspection activities are listed in the Attachment. Plant areas toured were the following:

- Unit 1, Spent Fuel Pool Cooling pump rooms
- 1A and 1C AFW pump rooms
- 2A and 2B Remote Shutdown Rooms and Class 1E 4.16 KV switchgear rooms
- 1B HHSI pump room and associated valve gallery
- 1B AFW pump room
- Unit 2, 125 Volt DC Safety Related Battery Rooms
- Unit 1, Train A and B Component Cooling Water pump rooms

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification

a. Inspection Scope

On May 13, the inspectors observed licensee Simulator Exercise Guide RQ-SE-95303-03 performance which included a steam generator tube leak, loss of one train of 480

Volt AC Class 1E electrical switchgear and a large loss of coolant accident. The inspectors assessed operator performance to verify the following:

1) use of licensee Procedure 10000-C, Conduct of Operations; Procedure 18009-C, Steam Generator Tube Leak; Procedure 19000-C, E-0 Reactor Trip or Safety Injection; Procedure 19010-C, E-1 Loss of Reactor or Secondary Coolant; Procedure 19200-C, F-0 Critical Safety Function Status Trees; and Procedure 91001-C, Emergency Classification and Implementing Instructions;

2) proper control board manipulations including critical operator actions;

3) quality of crew communications and supervisory command and control;

4) effectiveness of the post evaluation critique. The inspectors also checked the simulator control boards to verify they closely matched the plant control boards.

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule (MR) Implementation

a. Inspection Scope

The inspectors reviewed the following six equipment problems and associated CRs to verify the licensee's maintenance efforts met the requirements of 10 CFR 50.65 (the Maintenance Rule) and licensee Procedure 50028-C, Engineering Maintenance Rule Implementation. This included review of failure characterization, establishment of performance criteria or (a) (1) performance goals, and corrective actions. The inspectors also reviewed the CR database to verify that equipment problems were being identified at the appropriate level, entered into the corrective action program, and appropriately resolved.

- Failure of Unit 2 120 volt inverter 2ND3I3 (CR 2001002928)
- Containment penetration conductor overcurrent protection devices failed surveillances (CR's 2002000192, 2002000285, 2002000534, and 2002000859)
- Testing failure of overload relay for breaker 1NBF51 (CR 2002000033)
- Unit 1 Boric Acid Transfer Pump #6 failed to start from control room handswitch (CR 2002000380)
- Inverter 1AD1I11 input fuse found open (CR 2002000759)
- Valve 1HV-8821B missing motor pinion set screw (CR 2002000756)

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessment and Emergent Work Evaluation

a. Inspection Scope

The inspectors conducted a review of emergent work activities to verify plant risk was properly reassessed. The inspectors also reviewed the CR database to verify that equipment problems were being identified at the appropriate level, entered into the corrective action program, and appropriately resolved. The inspectors reviewed risk assessments and risk management controls implemented for the following six maintenance activities to verify they were completed in accordance with licensee Procedure 00354-C, Maintenance Scheduling, and 10 CFR 50.65(a)(4):

- Unit 1 refueling outage safety assessment review for 4/1 - 4/5
- Repair pressurizer spray valve 1PV- 0455B (MWO 10201305)
- Generrex exciter cabinet bridge #2 SCR LED flashing (MWO 10201220)
- Investigate 1B HHSI pump lube oil cooler low cooling flow (MWO 10201428)
- Investigate 1A MDAFW miniflow valve 1HV-5155 failed stroke time (MWO 10201473)
- Repair motor bearing cooling line to 1A Heater Drain Pump (MWO 10201609)

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Non-Routine Evolutions

a. Inspection Scope

The inspectors reviewed operating logs, the sequence of event log, and post-trip equipment response computer data to verify the control room operators responded appropriately to an unexpected loss of all main feedwater and subsequent manual reactor trip on April 20. The inspectors reviewed licensee Procedure 19000-C, E-0 Reactor Trip or Safety Injection, to verify the operating crew responded appropriately to the transient. Further details regarding the trip are included in Section 4OA3 of this report.

b. Findings

No findings of significance were identified

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following three evaluations to verify that they met the requirements of licensee Procedure 00150-C, Condition Reporting and Tracking

System. This included the technical adequacy of the evaluations, the adequacy of compensatory measures, and the impact on continued plant operation.

- Room temperatures associated with boration flow paths found below 72°F (CR 2002001497)
- Containment penetration conductor overcurrent devices (Breakers 1/2NY1N06, 1/2NY1N06 and 1/2NY4N06) have not been surveillance tested and have been electrically isolated (CR's 2002001395 and 2002001396)
- K-Line circuit breakers 10CFR21 notification (CR 2002001710)

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications

a. Inspection Scope

The inspectors reviewed Minor Design Change (MDC) No. 02-VAM019, Change Backup Protection Devices for Containment Penetration Circuits in Auxiliary Relay Panels, and also observed portions of its implementation to verify it met the requirements of licensee Procedure 50016-C, Minor Design Change. The inspectors evaluated if the modified systems' design had been degraded and if the modification left the plant in an unsafe condition. Documents reviewed to support the inspections are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing

a. Inspection Scope

The inspectors either observed the testing or reviewed the test results for the following five maintenance activities to verify that the testing met the requirements of licensee Procedure 29401-C, Work Order Functional Tests. The inspectors also reviewed the test procedures to verify the acceptance criteria was sufficient to meet the operability requirements in Technical Specifications.

- Unit 1 main turbine startup following low pressure rotor replacements (DCP 00-V1N0004)
- Unit 2, Nuclear Service Cooling Water (NSCW) pump #2 system outage (MWO's 20102863, 20102864, 20102900, and 20102865)
- Investigate 1A MDAFW miniflow valve failed stroke time test (MWO 10201473)
- Unit 1, NSCW pump #6 extended outage (MWO's 10200372 and 10102912)
- Unit 2, Containment Coolers #1 and #2 breaker replacement (MWO 20201177)

b. Findings

The inspectors identified several deficiencies in the scaffolding constructed for MWO's 10200372 and 10102912 which are documented as another example of the finding in Section 1R20.3

1R20 Refueling and Outage Activities

The inspectors evaluated the following activities during the Unit 1 refueling outage that ended April 21. Additional documents reviewed are listed in the Attachment.

.1 Refueling Activities

a. Inspection Scope

The inspectors observed core reload activities to verify that fuel handling operations were performed in accordance with Technical Specification (TS) and licensee Procedure 12007-C, Refueling Operations, Procedure 93300-C, Conduct of Refueling Operations, and Procedure 93360-C, Limitations and Precautions for Handling New and Partially Spent Fuel Assemblies. The inspectors verified that foreign material exclusion around the reactor vessel cavity area was controlled in accordance with licensee Procedure 00254-C, Foreign Material Exclusion and Plant Housekeeping Programs. The inspectors reviewed portions of the core loading videotape to verify that fuel assemblies were loaded in their proper reactor core locations.

b. Findings

No findings of significance were identified.

.2 Containment Closure

a. Inspection Scope

The inspectors evaluated the licensee's ability to close the equipment hatch and personnel airlock during core reload. The inspectors conducted containment tours and interviewed responsible containment closure crew members and operations personnel in order to verify the proper implementation of equipment hatch emergency closure administrative controls in accordance with licensee Procedure 27504-C, Equipment Hatch Emergency Closure, Revision 3.2.

b. Findings

Green. The inspectors identified that the licensee was not implementing the administrative controls established to ensure prompt closure capability for the containment equipment hatch. This finding was also determined to be a non-cited violation (NCV) of TS 5.4.1.a.

TS 3.9.4, Containment Penetration, required the equipment hatch be capable of being closed when irradiated fuel was being moved inside containment. The licensee established administrative controls in procedure 27504-C to meet this TS requirement. These administrative controls included assigning a designated hatch closure crew for each work shift, training of the assigned individuals, direct communication between the control room and the hatch closure crew leader, and periodic inspections of the emergency hatch closure equipment and tools. On March 29, the inspectors identified that two of the four assigned emergency hatch closure crew members for day-shift had not received required emergency hatch closure training and a third member had not received training since September 2000. The inspectors determined that none of the outage designated emergency closure personnel had received re-training for the current outage. The inspectors determined that the incomplete training was due in part to a procedural deficiency. In the licensee's response to an NRC Request for Additional Information for TS Amendment 115, the licensee stated the hatch closure crew would be trained "prior to each refueling outage." This language was not included when Procedure 27504-C was written. The inspectors also identified that the hatch closure crew leader relied exclusively on a plant pager to communicate with the control room and was not aware that Procedure 27504-C also required a hand held radio. The lack of direct communications between the crew leader and control room could result in unnecessary delays in communicating the need for hatch closure initiation. The inspectors also identified that shiftly pressure checks of nitrogen bottles that supply backup motive force for moving the equipment hatch in position for closure were not being performed in accordance with Procedure 27504-C.

This finding had a credible impact on safety in that the administrative controls provided assurance of the licensee's ability to promptly close the hatch. This finding was evaluated using the Significance Determination Process (SDP) and determined to be of very low safety significance (Green) because no fuel handling event occurred requiring implementation of the containment equipment hatch emergency closure procedure and the failures identified would not have resulted in preventing the licensee's capability of closing the equipment hatch at the time the issue was identified. In addition, the licensee's analyses of a fuel handling accident without closure of the equipment hatch shows that public and control room operator radiological exposures would not exceed regulatory limits. This direct cause of this finding involved the cross-cutting area of Human Performance.

Technical Specification 5.4.1.a requires, in part, that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978, which includes procedures for performing refueling activities and maintaining containment integrity. The failure to implement the requirements of Procedure 27504-C is a violation of TS 5.4.1.a. Because the violation is of very low safety significance and has been entered into the licensee's corrective action program (CRs 2002001165, 2002001172, and 2002001322), this finding is considered a NCV in accordance with Section VI.A.1 of the NRC Enforcement Policy. The finding is identified as NCV 50-424/02-02-01,

Ineffective Implementation of Containment Equipment Hatch Emergency Closure Administrative Controls.

.3 Heatup and Startup Activities

a. Inspection Scope

The inspectors examined selected plant restart activities to ensure that TS and licensee procedural requirements were met prior to conducting mode changes. Prior to reactor criticality, the inspectors walked down all areas of the containment with the exception of the lower pressurizer cubicle to verify that all debris, which could have an adverse impact on containment sump performance, had been removed. The inspectors verified that containment closeout inspections and controls were performed in accordance with licensee Procedure 14900-C, Containment Exit Inspection, and Procedure 00309-C, Control of Unattended Temporary Material in Containment in Modes 1-4. The inspectors observed portions of reactor startup testing to ensure that it was conducted in accordance with procedure LPPT-GAE/GBE-01, Low Power Physics Test Program With Dynamic Rod Worth Measurement. The inspectors verified that reactor physics test results adequately demonstrated core operating limit parameters were consistent with the design.

b. Findings

Green. The inspectors identified several examples of a failure by the licensee to construct temporary scaffolding in accordance with procedural requirements and to perform an engineering evaluation when needed. This finding was also determined to be a non-cited violation of TS 5.4.1.a.

On April 7, 2002, while conducting a Unit 1 containment closeout inspection, the inspectors noticed that four scaffolds were erected between each ECCS accumulator tank and the containment secondary shield wall. Two of the four scaffolds were installed during the previous refueling outage in September 2000 and had been left in containment for the operating cycle. The other two scaffolds were also erected in the previous refueling outage but had been dismantled during the current refueling outage and re-constructed when the unit was de-fueled on March 23, 2002. The inspectors reviewed the scaffold construction against the requirements of licensee Procedure 20003-C, Scaffolding Construction and Control, Revision 23.1, reviewed the scaffold requests forms, and discussed installation with the scaffold construction supervisor and engineering personnel. Based on these reviews, the inspectors identified that all four scaffolds did not meet the construction requirements of licensee Procedure 20003-C. Procedure deviations included single versus triple wire tie-off wrapping, improper tie-off spacing, improper tie-off restraints in each horizontal direction, inadequate cross bracing, and scaffold members physically touching safety-related piping and components. If scaffolding could not be constructed in accordance with Procedure 20003-C, it required an engineering seismic review. This was not completed.

The inspectors also identified several missed opportunities where engineering should have identified the construction deviations, both in the previous, as well as the current refueling outage. Specifically, the original scaffold request forms were checked "yes" in the block for "Engineering Review Required," but a review had not been performed. In addition, prior to reactor restart from the previous and current refueling outages, engineering review was required, as part of licensee Procedure 00309-C, Control of Unattended Temporary Material In Containment In Modes 1-4, to evaluate the acceptability of leaving the scaffold in containment prior to Mode 4 entry. Based on interviews with the engineers who reviewed the scaffolds per this procedure for both outages, the inspectors determined they were not seismically trained/qualified and only conducted an evaluation of the scaffold construction materials for impact on the containment sump. The engineers stated that they had not evaluated whether the scaffold was constructed in accordance with Procedure 20003-C and had not been familiar with the details of that procedure.

On April 9 and again on April 11, the licensee evaluated the scaffold construction deviations identified by the inspectors. Corrections were made to the scaffolds in order to meet the requirements of Procedure 20003-C. In addition, the licensee performed an evaluation of the potential impact of the scaffold deviations. The inspectors reviewed this evaluation (REA 02-VAA641) which determined that the scaffold most likely would not have collapsed, but could have moved and impacted adjacent components during a seismic event. The evaluation conservatively assumed damage to the nearby safety-related components due to scaffold collapse and evaluated this impact on the plant during a seismic event. The results of this aspect of the evaluation concluded that even assuming damage to this equipment, safe plant shutdown would have been achievable.

In a separate example, on May 21, 2002, while preparing for a post-maintenance test associated with NSCW pump #6 maintenance, the inspectors identified that scaffolding built adjacent to the pump motor to support the work activities was also not tied off as required by Procedure 20003-C. The inspectors determined that an engineering review was again not performed to address the deviation. The licensee later determined that the as-built scaffold would likely not have impacted operability of NSCW pump #6 during a seismic event.

This finding was more than minor because improperly constructed scaffold near safety-related equipment could affect the function of that equipment during a design basis seismic event. Additionally, the failure to follow scaffold construction procedural requirements was considered widespread because of the multiple examples observed and because unreviewed scaffold construction deviations occurred during the previous, as well as current refueling outage. This finding was evaluated using the SDP and determined to be of very low safety significance (Green) because the deviations would most likely not have resulted in the actual collapse of the scaffold during a design basis seismic event. Additionally, a licensee analysis demonstrated that scaffold collapse which damaged near-by components would not have affected the licensee's ability to safely shutdown the plant. This direct cause of this finding involved the cross-cutting area of Human Performance.

TS 5.4.1.a requires, in part, that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978, which includes procedures for performing maintenance. The failure to implement the requirements of Procedure 20003-C is considered a violation of TS 5.4.1.a. Because the violation is of very low safety significance and has been entered into the licensee's corrective action program (CRs 2002001346, 2002001392, and 2002001697), this finding is considered a NCV in accordance with Section VI.A.1 of the NRC Enforcement Policy. The finding is identified as NCV 50-424/02-02-02, Failure to Follow Scaffold Construction Procedure - Two Examples.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors reviewed the following six surveillance test procedures and either observed the testing or reviewed test results to verify that testing was conducted in accordance with the procedures and that the acceptance criteria adequately demonstrated that the equipment was operable. Additionally, the inspectors reviewed the CR database to verify that the licensee had adequately identified and implemented appropriate corrective actions for surveillance test problems.

- Procedure 14406-1, Boron Injection Flow Path Verification - Shutdown
- Procedure 14666-1, Train A Diesel Generator and ESFAS Test, sections 5.2, 5.3, and 5.4
- Procedure 14980B-2, Diesel Generator Operability Test
- Procedure 14803-1, CCW Pumps and Check Valve IST and Response Time Tests
- Procedures 14546-1, Turbine Driven Auxiliary Feedwater Pump Operability Test and 14810-1, TDAFW Pump & Check Valve IST Response Time Test
- Procedure 14808-2, Centrifugal Charging Pump and Check Valve IST and Response Time Test (A HHSI)

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors evaluated Temporary Modification (TM) 02-V1T025 and associated 10 CFR 50.59 screenings against the system design basis documentation to verify that the modifications did not adversely affect the safety functions of important safety systems. This modification blocked the C-9 Steam Dump Block Permissive during main turbine testing following the replacement of the low pressure rotors. Additionally, the

inspectors assessed the modification to verify it was developed and implemented in accordance with licensee Procedure 00307-C, Temporary Modifications.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP1 Exercise Evaluation

a. Inspection Scope

The inspectors reviewed the objectives and scenario for the biennial, full-participation 2002 emergency response exercise to verify the major elements of the licensee's emergency plan would be suitably tested. During the period June 11-14, 2002, the inspectors observed and evaluated the licensee's performance during the exercise and selected activities related to both the licensee's conduct and self-assessment of the exercise. Licensee activities inspected during the exercise included those occurring in the control room simulator, Technical Support Center (TSC), Operational Support Center (OSC), and the Emergency Operations Facility (EOF). The inspectors evaluation focused on the risk-significant activities of event classification, notification of governmental authorities, onsite protective actions, offsite protective action recommendations, and accident mitigation. The inspectors also evaluated command and control, the transfer of emergency responsibilities between facilities, communications, adherence to procedures, and the overall implementation of the emergency plan. The inspectors attended the post-exercise critique to evaluate the licensee's self-assessment process.

b. Findings

No findings of significance were identified.

1EP4 Emergency Action Level (EAL) and Emergency Plan Changes

a. Inspection Scope
The inspector reviewed changes to the Radiological Emergency Plan (REP), against the requirements of 10 CFR 50.54(q) to verify the changes did not decrease REP effectiveness.

b. Findings

No findings of significance were identified.

3PP SAFEGUARDS

Cornerstone: Physical Protection

3PP3 Response to Contingency Events

.1 Intrusion Detection Systems (IDS)

a. Inspection Scope

The inspectors evaluated the protected area IDS required by the Physical Security Plan (PSP) to determine if vulnerabilities existed. The inspectors also performance tested 15 of the IDS zones to verify the licensee's ability detect penetration into the zones. The inspectors observed the licensee's IDS operational and performance testing to verify the requirements of licensee procedural 90205-C, 7 Day Operational Testing of IDS, were met. IDS maintenance records for the period January 2001 to April 2002 were reviewed to determine if maintenance activities were being performed in accordance with licensee procedures. The inspectors also assessed trends in IDS zone unavailability and the adequacy of preventive maintenance practices to verify that licensee activities related to IDS operations, testing, and maintenance were being conducted in accordance with Physical Security and Contingency Response Plan requirements, as well as the appropriate licensee implementing procedures including Procedure 23657-C, IDS Performance Testing.

b. Findings

No findings of significance were identified

.2 Intrusion Assessment Aids

a. Inspection Scope

The inspectors evaluated the capability and quality of the licensee's intrusion assessment aids against the PSP to verify the alarm station operators in both the Central Alarm Station (CAS) and Secondary Alarm Station (SAS) could clearly recognize a threat in the intrusion detection zones. The inspectors assessed 19 zones through performance testing. Video monitors in the CAS and SAS were also reviewed to verify the picture quality did not impact the ability of the CAS/SAS operators to assess intruders.

b. Findings

No findings of significance were identified

.3 Weapons Demonstration

a. Inspection Scope

The inspectors observed a range demonstration by six individuals to verify the capability of the individuals to effectively engage targets. This demonstration including using appropriate weapons from behind each type of plant defensive position and engaging both fixed and moving targets. The inspectors also evaluated the training records of the individuals to verify required weapons training had been conducted and documented in accordance with requirements of 10 CFR 73.55, Appendix B and the Security Training Qualification Plan.

b. Findings

No findings of significance were identified.

.4 Response Strategy Evaluation

a. Inspection Scope

The licensee's security strategy was evaluated to determine its effectiveness against the Design Basis Threat (DBT). The licensee provided an overall briefing of their response strategy, including target sets, defensive positions, operations and local law enforcement agency (LLEA) interface, and response times. The inspectors toured the Protected Area and Vital Areas during which locations and numbers of responders were assessed, as well as the adequacy of defensive positions, to verify requirements of the PSP and Contingency Response plans were met. Weapons and equipment were evaluated and security force members were interviewed to determine their level of familiarity with individual responsibilities in implementing the response strategy.

b. Findings

No findings of significance were identified.

.5 Problem Identification and Resolution

a. Inspection Scope

The inspectors randomly selected and screened licensee records for drills and exercises for the period of January 2000 through August 2001 as well as IDS maintenance work requests and problem evaluation reports to determine if the licensee was identifying problems related to these areas, and entering them into the corrective action program.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification

.1 Initiating Events Cornerstone

a. Inspection Scope

The inspectors verified the accuracy of the data submitted by the licensee to the NRC for the three initiating event PIs (unplanned reactor scrams, reactor scrams with loss of normal decay heat removal, and unplanned power changes), for the 3rd quarter 2001 through 1st quarter 2002. The data was verified using the licensee's Monthly Operating Reports, operator logs, Licensee Event Reports (LERs), and NRC Inspection Reports.

b. Findings

No findings of significance were identified.

.2 Mitigating Systems Cornerstone

a. Inspection Scope

The inspectors verified the accuracy of the data submitted by the licensee to the NRC for the Safety System Functional Failures PI for the 3rd quarter 2001 through 1st quarter 2002. The data was verified using the licensee's Monthly Operating Reports, operator logs, and LERs.

b. Findings

No findings of significance were identified.

.3 Emergency Preparedness Cornerstone

a. Inspection Scope

The inspectors reviewed licensee records to verify the submitted PI values through the 1st quarter of 2002 were calculated in accordance with the guidance of NEI 99-02, Revision 2, Regulatory Assessment Performance Indicator Guideline. The inspector assessed the accuracy of the following PI's:

- Emergency Response Organization (ERO) Drill/Exercise Performance
- ERO Drill Participation
- Alert and Notification System Reliability

b. Findings

No findings of significance were identified.

4OA3 Event Follow-up

.1 (Closed) LER 50-424/01-001-01: Reactor Trip Due to Loss of Generator Excitation (Rev. 1)

The circumstances associated with this event was previously discussed in sections 1R14 and 4OA3 of NRC Inspection Report 50-425,425/01-05 and Section 4OA3 of NRC Inspection Report 50-424,425/01-06. This revision to the LER provided additional information related to the root cause of the failure of the silicon controlled rectifiers associated with main generator rectifier bridge #1. No additional findings of significance were identified.

.2 (Closed) LER 50-424/02-001-00: Improperly Wired Interlocks Affects ECCS Recirculation Valve

On March 7, 2002, while shutdown for a refueling outage, the licensee discovered several Unit 1 ECCS motor operated valve (MOV) interlock circuitry wiring errors. Two of these wiring errors, in conjunction with a loss of A train power, would have prevented remote operation of valve 1HV-8804B (discharge from B RHR pump to the pump suction of both trains of Safety Injection (SI) and High Head Safety Injection (HHSI)) from the control room. Valve 1HV-8804B is opened to establish High Pressure Recirculation (HPR) from the containment sump to the reactor coolant system in several design basis accident scenarios. The licensee determined that the wiring errors were a result of human performance errors during maintenance activities on valves 1HV-8813 (Common SI miniflow isolation) and 1HV-8509B (1A HHSI pump miniflow isolation) in 1991 and/or 1996. No findings of significance were identified by the inspectors. This issue was entered in the licensee's corrective action program as CR's 2002000723 and 2002001223. The regulatory significance of this item is dispositioned in Section 4OA7 of this report. Other licensee documents used to support the inspections are listed in the Attachment.

.3 (Closed) LER 50-424/02-003-00: Loss of Main Feedwater Leads to Unplanned ESF Actuation and Manual Reactor Trip

The licensee identified that operations personnel failed to maintain steam generator water levels during power ascension and subsequently failed to take adequate action in response to the lowering steam generator water levels. This failure resulted in a Unit 1 manual trip from approximately 28% power. No findings of significance were identified by the inspectors. This issue was entered in the licensee's corrective action program as CR 2002001458. The regulatory significance of this item is dispositioned in Section 4OA7 of this report. Other licensee documents used to support the inspections are listed in the Attachment.

4OA6 Management Meetings

Exit Meeting Summary

The inspectors presented the inspection results to J. Gasser, Nuclear Plant General Manager, and other members of licensee management at the conclusion of the inspection on July 12, 2002. No proprietary information was identified.

4OA7 Licensee Identified Violations

The following findings of very low significance were identified by the licensee and are violations of NRC requirements which met the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600 for being dispositioned as NCVs.

NCV Tracking Number	Requirement Licensee Failed to Meet
NCV 50-424/02-02-03	Unit 1 Technical Specification (TS) 5.4.1.a requires that written procedures be implemented covering the activities listed in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978, which includes equipment control activities such as locking and tagging. Licensee Procedure 00304-C, Equipment Clearance and Tagging, Revision 45, Section 4.2.2.3.f, requires that clearances be evaluated for impact on component/system operability and configuration control. The failure to properly evaluate the impact of Clearance 10215123 resulted in the isolation of the designated boration flow path established by Procedure 14406-1, Boron Injection Flow Path Verification - Shutdown. This finding is of very low safety significance since core alterations and positive reactivity additions were not in progress and another boration flow path was available. This issue was placed in the licensee's corrective action program as CR 2002001251. (Green)
NCV 50-424/02-02-04	Unit 1 Technical Specification (TS) 3.5.2 requires that two trains of ECCS shall be available when in modes 1, 2 and 3. The licensee discovered that, due to valve wiring errors, a loss of A train power (single failure) would have prevented the establishment of High Pressure Recirculation from the control room from either train. This was a violation of TS 3.5.2 which was caused by human performance errors. This issue was placed in the licensee's corrective action program as CR's 2002000723 and 2002001223. Additional information on this issue can be found in Section 4OA3 of this report. (Green)

NCV 50-424/02-02-05	Unit 1 Technical Specification (TS) 5.4.1.a requires that written procedures be implemented covering the activities listed in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978, which includes administrative procedures covering authorities and responsibilities for safe operation. Licensee Procedure 10000-C, Conduct of Operations, Revision 50, requires that for any abnormal conditions or indications, the shift operating crew take appropriate actions to stabilize the plant. The failure to take appropriate actions in response to lowering steam generator water levels was a failure to follow Procedure 10000-C. This violation of TS 5.4.1.a is being treated as a non-cited violation. The failure resulted in an unexpected reactor trip and a challenge to safety systems. This issue was placed in the licensee's corrective action program as CR 2002001458. Additional information on this issue can be found in Section 4OA3 of this report. (Green)

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

50-424/02-02-01	NCV	Ineffective Implementation of Containment Equipment Hatch Emergency Closure Administrative Controls (Section 1R20)
50-424/02-02-02	NCV	Failure to Follow Scaffold Construction Procedure - Two Examples (Sections 1R19 and 1R20)
50-424/02-02-03	NCV	Failure to follow Equipment Clearance and Tagging Procedure Results in Isolation of Designated Boration Flow Path (Section 4A07)
50-424/02-02-04	NCV	Violation of TS 3.5.2 Requiring Two Independent ECCS Trains Due to ECCS Interlock Wiring Error (Section 4A07)
50-424/02-02-05	NCV	Failure to Follow Conduct of Operation Procedure Results in Manual Reactor Trip (Section 4A07)

Closed

50-424/01-001-01	LER	Reactor Trip Due to Loss of Generator Excitation (Rev. 1) (Section 4OA3)

50-424/02-001-00	LER	Improperly Wired Interlocks Affects ECCS Recirculation Valve (Section 4OA3)
50-424/02-003-00	LER	Loss of Main Feedwater Leads to Unplanned ESF Actuation and Manual Reactor Trip (Section 4OA3)

Supplementary Information

LIST OF PERSONS CONTACTED

Licensee

W. Bargeron, Manager Operations
W. Burmeister, Manager Engineering Support
G. Frederick, Plant Operations Assistant General Manager
J. Gasser, Nuclear Plant General Manager
K. Holmes, Manager Training and Emergency Preparedness
P. Rushton, Plant Support Assistant General Manager

NRC

S. Cahill, Chief, Region II Reactor Projects Branch 2

INSPECTION DOCUMENTS REVIEWED

Section 1R04

Drawing No. 1X4DB114, Chemical & Volume Control System
Drawing Nos. 1X4DB116-1, 2, Chemical & Volume Control System
Drawing Nos. 1X4DB119, 121, Safety Injection System
Procedure 13011-1, Residual Heat Removal System
Drawing 1X4DB122, Residual Heat Removal System NO. 1205
Unit 1, Residual Heat Removal System Maintenance Rule Monthly Reports (January through April, 2002)

Section 1R05

Procedure 92791-2, Zone 91, Control Building, Level A, Fire Fighting Preplan
Procedure 92792-2, Zone 92, Control Building, Level A, Fire Fighting Preplan
Procedure 92798-2, Zone 98, Control Building, Level A, Fire Fighting Preplan
Procedure 92803-2, Zone 103, Control Building, Level A, Fire Fighting Preplan
Procedure 92756B-2, Zone 56B, Control Building, Level B, Fire Fighting Preplan
Procedure 92777B-2, Zone 77B, Control Building, Level B, Fire Fighting Preplan
Procedure 92778B-2, Zone 78B, Control Building, Level B, Train “A” Battery Room Fire Fighting Preplan
Procedure 92779B-2, Zone 79B, Control Building, Level B, Fire Fighting Preplan

Section 1R12

VEGP February Maintenance Rule Report
DCP 99-VAN0071-001, Replacement of obsolete Cutler-Hammer “Citation series” starters and Overload relays

Section 1R17

Drawings 1/2X6AVO1-310, Auxiliary Relay Cabinet No. 3 Wiring Diagram
Drawings 1/2X6AVO1-311, Auxiliary Relay Cabinet No. 3 Wiring Diagram
Drawings 1/2X6AVO1-312, Auxiliary Relay Cabinet No. 3 Wiring Diagram
Drawings 1/2X3D-CD-NO4A, Auxiliary Relay Cabinet No. 3 Wiring Diagram
Drawings 1/2X6AVO1-120, Critical Function Valve Alarm
Drawings 1/2X6AVO1-308, Auxiliary Relay Cabinet No. 2 Wiring Diagram
Drawings 1/2X6AVO1-309, Auxiliary Relay Cabinet No. 2 Wiring Diagram
Drawings 1/2X6AVO1-119, Critical Function Valve Alarm
Drawings 1/2X6AVO1-305, Auxiliary Relay Cabinet No. 1 Wiring Diagram
Drawings 1/2X6AVO1-306, Auxiliary Relay Cabinet No. 1 Wiring Diagram

Section 4OA1

Event Report 1-2001-01, Rev. 1, Reactor Trip Due to Loss of Generator Excitation
CR 2001002083, Reactor Trip Caused by Generator Trip

Section 4OA3

Event Report 1-2002-01, Loss of Main Feedwater and Manual Reactor Trip
Procedure 10000-C, Conduct of Operations
Procedure 13615-1, Condensate and Feedwater Systems
Procedure 20429-C, Short Term Documentation of Temporary Jumpers and Lifted Wires
Drawing 1X4DB140-1, Nuclear Sampling System-Liquid System No. 1212
Drawing 1X3D-BD-D02B, Safety Injection System 1HV-8920
Drawing 1X3D-BD-D03C, Safety Injection System 1HV-8814
Drawing 1X3D-BD-C01T, Chem & Vol Cont System 1HV-8508A