



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION II
SAM NUNN ATLANTA FEDERAL CENTER
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ATLANTA, GEORGIA 30303-8931

July 27, 2005

Southern Nuclear Operating Company, Inc.

ATTN: D. E. Grissette, Jr.

Vice President - Vogtle Project

P. O. Box 1295

Birmingham, AL 35201-1295

**SUBJECT: VOGTLE ELECTRIC GENERATING PLANT - NRC INTEGRATED INSPECTION
REPORT 05000424/2005003 AND 05000425/2005003**

Dear Mr. Grissette:

On June 30, 2005, the U. S. Nuclear Regulatory Commission (NRC) completed an inspection at your Vogtle Electric Generating Plant (VEGP), Units 1 and 2. The enclosed integrated inspection report documents the inspection results, which were discussed on July 8, 2005, with Mr. Tom Tynan 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.

This report documents one NRC-identified finding of very low safety significance (Green) which was determined to involve a violation of NRC requirements. However, because of its very low safety significance and because it has been entered into your corrective action program, the NRC is treating this violation as a non-cited violation (NCV) consistent with Section VI.A of the NRC Enforcement Policy. If you contest this NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the United States 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 VEGP.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system

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(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/

Malcolm T. Widmann, Chief
Reactor Projects Branch 2
Division of Reactor Projects

Docket Nos.: 50-424, 50-425

License Nos.: NPF-68, NPF-81

Enclosure: Inspection Report 05000424/2005003 and 05000425/2005003

w/Attachment: Supplemental Information

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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.: 50-424, 50-425

License Nos.: NPF-68, NPF-81

Report Nos.: 05000424/2005003 and 05000425/2005003

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

Facility: Vogtle Electric Generating Plant

Location: 7821 River Road
Waynesboro, GA 30830

Dates: April 1 - June 30, 2005

Inspectors: G. McCoy, Senior Resident Inspector
T. Morrissey, Resident Inspector
C. Rapp, Senior Project Engineer (Section 1R06)
L. Cain, Resident Inspector (V.C. Summer)
S. Sanchez, Resident Inspector (St. Lucie)

Approved by: Malcolm T. Widmann, Chief
Reactor Projects Branch 2
Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000424/2005-003, 05000425/2005-003; 04/01/2005 - 06/30/2005; Vogtle Electric Generating Plant, Units 1 and 2; Identification and Resolution of Problems.

The report covered a three-month period of inspection by resident inspectors and a project engineer. One Green non-cited violation (NCV) was identified. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

C Green. An NRC-identified non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, Corrective Action, was identified for the failure to preclude repetition of a significant condition adverse to quality concerning the failure of the Unit 2 reactor protection system channel 2 over-temperature delta-temperature instrument.

This finding is of more than minor significance because it affected the mitigating systems cornerstone attribute of equipment performance and adversely affected the cornerstone objective of ensuring the availability, reliability and capability of systems that respond to initiating events. This violation is of very low safety significance because the event did not involve a reduction in the defense-in-depth for reactor protection loop over-temperature delta-temperature setpoint channels. This finding also involved the cross-cutting aspect of problem identification and resolution in that the licensee failed to properly identify or address these issues in the corrective action system. (Section 4OA2)

B. Licensee-Identified Violations

A violation of very low safety significance, which was identified by the licensee, has been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. This violation is listed in Section 4OA7.

Enclosure

REPORT DETAILS

Summary of Plant Status

Unit 1 continued a refueling outage. The unit was restarted on April 9 and attained full rated thermal power (RTP) on April 12. On April 29, the unit tripped as a result of a feedwater valve failure. The unit was restarted on May 1 and reached full RTP on May 2. The unit operated at full RTP for the remainder of this report period.

Unit 2 operated at essentially full RTP until May 23 when the reactor was shutdown to repair an extraction steam bellows and a leaking tube in the main condenser. The unit was restarted June 9 and attained essentially full RTP on June 14. The unit operated at full RTP for the remainder of this report period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R04 Equipment Alignment

a. Inspection Scope

Partial Walkdowns. The inspectors performed partial walkdowns of the following three systems to verify correct system alignment. The inspectors checked for correct valve and electrical power alignments by comparing positions of valves, switches, and breakers to the procedures and drawings listed in the Attachment. Additionally, the inspectors reviewed the condition report (CR) database to verify that equipment alignment problems were being identified and appropriately resolved.

C Unit 1, train B nuclear service cooling water (NSCW) system while NSCW pump number 2 was out of service

C Unit 1, train A containment spray system after a surveillance test

C Unit 2, auxiliary feed water system after completion of the Unit 2 forced outage and subsequent startup

Complete Walkdowns. The inspectors conducted a detailed review of the accessible portions of the Unit 1 125V DC 1E electrical system. The inspectors used licensee procedures 11405-1, 125V DC Electrical Distribution System Alignment, 13405-1, 125V DC 1E Electrical Distribution System, 18034-1, Loss of Class 1E 125V DC power and drawing 1X3D-AA-G01A to verify switch and breaker alignment, electrical power availability, labeling, and material condition. The inspectors also reviewed system health reports, maintenance rule monthly reports, CRs, and outstanding maintenance work orders to verify that alignment and equipment discrepancies were being identified and appropriately resolved.

b. Findings

No findings of significance were identified.

Enclosure

1R05 Fire Protection**a. Inspection Scope**

Fire Area Tours. The inspectors walked down the following nine plant areas to verify the licensee was controlling combustible materials and ignition sources as required by procedures 92015-C, Use, Control, and Storage of Flammable/Combustible Materials, and 92020-C, Control of Ignition Sources. The inspectors assessed the observable condition of fire detection, suppression, and protection systems and reviewed the licensee's fire protection Limiting Condition for Operation log and CR database to verify that the corrective actions for degraded equipment were identified and appropriately prioritized. The inspectors also 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 are listed in the Attachment.

C Unit 1 trains A and B piping penetration filtration unit rooms
C Unit 1 trains A and B containment spray pump rooms
C Unit 2 trains A and B motor driven auxiliary feedwater (AFW) pump rooms and turbine driven AFW pump room
C Unit 1 trains A and B auxiliary component cooling water heat exchanger rooms
C Unit 1 trains A and B motor driven AFW pump rooms and turbine driven AFW pump room
C Unit 1 emergency diesel generators A & B rooms
C Unit 1 trains A and B Nuclear Service Cooling Water (NSCW) pump rooms
C Unit 2 trains A and B NSCW pump rooms
C Unit 1 and 2 main control room

Fire Drill Observation. On April 2, 2005, the inspectors observed a fire drill conducted in the auxiliary building, room 127. The inspectors assessed the adequacy of the fire drill and fire brigade response using licensee procedures 92000-C, Fire Protection Program; 92005-C, Fire Response Procedure; 92030-C, Fire Drill Program; 92747-1, Zone 47 - Auxiliary Building level 1 Fire Fighting Preplan; and 17103-C, Annunciator Response Procedures for the Fire Alarm Computer. The inspectors evaluated the fire brigade performance to verify that they responded to the fire in a timely manner, donned proper protective clothing, used self-contained breathing apparatus, and had the equipment necessary to control and extinguish the fire. The inspectors assessed the adequacy of the fire brigade's fire fighting strategy including entry into the fire area, communications, search and rescue, and fire equipment usage.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures

Enclosure

a. Inspection Scope

External Flood Review. The inspectors reviewed the licensee's external flooding mitigation procedures and equipment to verify they were consistent with the licensee's design requirements and risk analysis assumptions. The inspectors discussed external flooding preparation with engineering personnel to verify preparation and compensatory measures met the licensee's design requirements and risk analysis assumptions. The inspectors checked selected external drain systems to verify the drains would function properly. The inspectors reviewed a sampling of CRs to verify the licensee was identifying and correcting problems associated with flood detection and protection of structures, systems and components (SSCs). Documents reviewed are listed in the Attachment.

Internal Flood Review. The inspectors reviewed the UFSAR and Individual Plant Examination and walked down the following three areas which contained risk-significant SSCs below flood level to verify flood barriers were in place. Motor controllers and terminal boxes that could become potentially submerged were inspected to ensure that the sealing gasket material was intact and undamaged. The inspectors reviewed selected licensee alarm response procedures to verify alarm setpoints and setpoints for sump pump operation were consistent with the UFSAR, the setpoint index, and Technical Specifications (TS).

- Unit 2 train A safety injection pump room
- Unit 2 train B safety injection pump room
- Unit 1 train A centrifugal charging pump room

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification

a. Inspection Scope

Resident Quarterly Review. The inspectors evaluated operator performance on April 25, 2005 during licensed operator simulator training associated with Requalification Segment 20052 and described on simulator exercise guide V-RQ-SE-05201. The simulator scenario covered operator actions resulting from a reactor trip without a safety injection. The inspectors specifically assessed the following areas:

- C Correct use of the abnormal and emergency operating procedures including licensee procedures 19000-C, E-0 Reactor Trip or Safety Injection; 19000-C, E-0 Reactor Trip or Safety Injection; and 19001, ES-0.1 Reactor Trip Response
- C Ability to identify and implement appropriate TS actions
- C Clarity and formality of communications in accordance with procedure 10000-C, Conduct of Operations
- C Proper control board manipulations including critical operator actions

- C Quality of supervisory command and control
- C Effectiveness of post-evaluation critique

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

The inspectors reviewed the following two equipment problems and associated licensee CRs to evaluate the effectiveness of the licensee's handling of equipment performance problems and 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. The reviews included adequacy of the licensee's failure characterization, establishment of performance criteria or 50.65(a)(1) performance goals, and adequacy of corrective actions. Other documents reviewed during this inspection included control room logs, system health reports, the maintenance rule database, and maintenance work orders (MWOs). Also, the inspectors interviewed system engineers and the maintenance rule coordinator to assess the accuracy of identified performance deficiencies and extent of condition. Documents reviewed are listed in the Attachment.

- C CCR 2005100937, Unit 1 vital battery B charger A current limit out of adjustment
- C CCR 2005101692, Unit 1 charging flow control valve (FV121) failed closed

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Evaluation

a. Inspection Scope

The inspectors reviewed the following five risk significant and emergent MWOs to verify plant risk was properly assessed by the licensee prior to conducting the activities. The inspectors reviewed risk assessments and risk management controls implemented for these activities to verify they were completed in accordance with procedure 00354-C, Maintenance Scheduling, and 10 CFR 50.65(a)(4). The inspectors also reviewed the CR database to verify that maintenance risk assessment problems were being identified at the appropriate level, entered into the corrective action program, and appropriately resolved.

- C Unit 1, Repair primary manway seating surface on steam generators 1 and 3 with the reactor at midloop water condition (MWOs 10516130 and 10516131)
- C Unit 1, NSCW pump #3 outage (MWOs 10503768 and 10400221)

Enclosure

C Unit 2, Block open and repair 2HV3016B, main steam isolation valve, steam generator 2 (MWO 20517408)

C Unit 1, CCW pump 2 outage and work in 230KV switchyard (MWO 10503240)

C Unit 2, train B NSCW pump #4 outage (MWOs 20411101, 20301997)

b. Findings

No findings of significance were identified.

1R14 Operator Performance During Non-Routine Plant Evolutions

a. Inspection Scope

For the non-routine plant evolution described below, the inspectors reviewed the operating crew's performance, operator logs, control board indications, and plant computer data to verify that operator response was in accordance with the associated plant procedures.

C Unit 1 reactor trip and subsequent recovery in accordance with procedures 19000-C and 19001-C

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following five operability evaluations to verify that they met the requirements of Nuclear Management Procedure (NMP)-GM-002, Corrective Action Program, and NMP-GM-002-GL02, Corrective Action Program Details and Expectations Guideline. This scope included a review of the technical adequacy of the evaluations, the adequacy of compensatory measures, and the impact on continued plant operation.

CCR 2005102672, Unit 2 train B EDG overspeed trip circuit did not function as designed during surveillance testing

CCR 2005103342, Unit 1 letdown pressure control valve control abnormalities

CCR 2005102160, pressurizer spray valve 1PV0455B friction load higher than established limits

CCRs 2005104112 and 2005104132, failure of valve 2HV8812B (RHR 2B suction valve) to fully open

CCR 2005104591, 2LT0459 deviated from the other two pressurizer level channels

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing**a. Inspection Scope**

The inspectors either observed post-maintenance testing or reviewed the test results for the following six maintenance activities to verify that the testing met the requirements of procedure 29401-C, Work Order Functional Tests, for ensuring equipment operability and functional capability was restored. The inspectors also reviewed the test procedures to verify the acceptance criteria was sufficient to meet the TS operability requirements.

C Unit 1 turbine driven auxiliary feed water pump speed control replacement (DCP 1019003501)

C Unit 1 atmospheric relief valve maintenance Work Order (WO 1050238101)

C Unit 1 ACCW pump outage (MWOs 10400923 and 10402129)

C Unit 2 CCW pump #2 discharge check valve inspection (WO 1050342401)

C Unit 1 train A piping penetration filter exhaust system outage (MWOs 10503368, 10503432, and 10201190)

C Unit 2 train B EDG excitation voltage failure and subsequent replacement of the K1 relay (MWO 20519648)

b. Findings

No findings of significance were identified.

1R20 Refueling and Outage Activities**1. Unit 1 Refueling Outage (1R12)****a. Inspection Scope**

The inspectors performed the inspection activities described below for this refueling outage which was already in progress at the beginning of this report period.

The inspectors confirmed that, when the licensee removed equipment from service, the licensee maintained defense-in-depth commensurate with the outage risk control plan for key safety functions and applicable technical specifications, and that configuration changes due to emergent work and unexpected conditions were controlled in accordance with the outage risk control plan. Documents reviewed are listed in the Attachment.

During the outage, the inspectors:

- Reviewed reactor coolant system (RCS) pressure, level, and temperature instruments to verify that those instruments were installed and configured to provide accurate indication; and that instrumentation error was accounted for;

- Reviewed the status and configuration of electrical systems to verify that those systems met technical specification requirements and the licensee's outage risk control plan;
- Reviewed system alignments to verify that the flow paths, configurations, and alternative means for inventory addition were consistent with the outage risk plan;
- Reviewed selected control room operations to verify that the licensee was controlling reactivity in accordance with the technical specifications;
- Verified that the proper plant conditions were met prior to reactor plant mode changes; and
- Monitored the reactor plant heatup to ensure that heatup rate requirements were met.

The inspectors reviewed the licensee's plans for changing plant configurations to verify on a sampling basis that technical specifications, license conditions, and other requirements, commitments, and administrative procedure prerequisites were met prior to changing plant configurations. The inspectors reviewed RCS boundary leakage and the setting of containment integrity. The inspectors examined the containment prior to reactor startup to verify that debris had not been left which could affect performance of the containment sumps.

b. Findings

No findings of significance were identified.

2. Unit 2 Outage to Repair Extraction Steam Line Bellows and Condenser Tube Leak

a. Inspection Scope

On May 23 the licensee initiated a shutdown of Unit 2 to cold shutdown conditions to investigate and repair a leaking condenser tube and a ruptured extraction steam line bellows. During the outage, the inspectors monitored the licensee's controls over the outage activities listed below. Documents reviewed are listed in the Attachment.

- Inspectors reviewed the licensee's risk assessment documentation to ensure that plant risk was properly assessed and controlled
- Reviewed the controls associated with shutdown cooling, reactivity management, reduced inventory activities, electrical power alignments, and containment integrity and closure
- Verified that the proper plant conditions were met prior to reactor plant mode changes
- Monitored the reactor plant heatup to ensure that heatup rate requirements were met

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors reviewed the following five 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. Documents reviewed are listed in the Attachment.

Surveillance Tests

C 14980A-1, Diesel Generator Operability Test

C 14667-1, Train B Diesel Generator and ESFAS test

C 24461-C & 24463-C, Common Hydrogen Recombiner, Hydrogen Inlet/Outlet Analyzer Loop AAIT1104 & AAITS1112/AAIT1118 & AAITS1119 Channel Operational Test

In-Service Tests

C 14808-2, Centrifugal Charging Pump and Check Valve IST and Response Time Test (2A, IST only)

RCS Leak Detection Systems

C 14905-1, RCS Leakage Calculation (Inventory Balance)

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors evaluated the following two Temporary Modifications (TM) and associated 10 CFR 50.59 screenings against the system design basis documentation and UFSAR to verify that the modifications did not adversely affect the safety functions of important safety systems. Additionally, the inspectors reviewed licensee procedure 00307-C, Temporary Modifications, to assess if the modification was properly developed and implemented.

- TM 2051601501, Modify Unit 2 steam generator Hi-Hi level P-14 setpoints C TM 2051559901, temporary power to selected loads during switchgear 2NA05 outage

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation

Enclosure

a. Inspection Scope

During the emergency response drill described below, the inspectors observed and reviewed emergency response activities to verify the licensee was properly classifying emergency events, making the required notifications, and making appropriate protective action recommendations. The inspectors used procedures 91001-C, Emergency Classification and Implementing Instructions, 91002-C, Emergency Notifications, and 91305-C, Protective Action Guidelines, to verify classifications, notifications, and protective action recommendations were properly performed. Additionally, the inspectors attended the licensee critique to verify that performance weaknesses and improvements were identified.

- On April 28, the licensee conducted an emergency response drill involving a steam generator tube rupture followed by a failed open main steam safety valve which created an unmonitored reactivity release pathway to the environment.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA2 Identification and Resolution of Problems

1. Daily Screening of Corrective Action Items

a. Inspection Scope

As required by Inspection Procedure 71152, Identification and Resolution of Problems, and in order to help identify repetitive equipment failures or specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the licensee's corrective action program. This review was accomplished by either attending daily screening meetings that briefly discussed major CRs, or accessing the licensee's computerized corrective action database and reviewing each CR that was initiated.

b. Findings and Observations

No findings of significance were identified.

2. Semi-Annual Trend Review

a. Inspection Scope

As required by NRC Inspection Procedure 71152, Identification and Resolution of Problems, the inspectors performed a review of the licensee's corrective action program and associated documents to identify trends which could indicate the existence of a

more significant safety issue. The inspector's review was focused on repetitive equipment issues, but also considered the results of the daily inspector CR item screening discussed in Section 4OA2.1, licensee trending efforts, and licensee human performance results. The inspector's review nominally considered the six-month period of January 2005 through June 2005. Corrective actions associated with a sample of the issues identified in the licensee's CR database were reviewed for adequacy.

b. Findings and Observations

No findings of significance were identified. The inspectors compared the licensee Quarterly Trend Report with the results of the inspectors' daily screening and did not identify any discrepancies or potential trends in the data the licensee had failed to identify. The inspectors reviewed several CRs involving as-found calibration of instruments being outside the required acceptance criteria to assess the licensee's sensitivity to potential instrument operability and related operational issues. Based on the sample reviewed, the inspectors observed that the depth of the as-found condition assessments were inconsistent. Documents reviewed are listed in the Attachment.

3. Annual Sample Review

a. Inspection Scope

The inspectors reviewed the effectiveness of the licensee's corrective actions for the important safety issues documented in CRs 2005101325, 2005101343, and 2005101450. These condition reports were associated with several failures of the Unit 2 channel 2 over-temperature delta-temperature (OTDT) instrument. This issue was chosen because it involved multiple failures of the instrument over a short period of time. The inspectors assessed whether the issue was identified in a timely manner; documented accurately and completely; properly classified and prioritized; adequately considered the extent of condition, generic implications, common cause, and previous occurrences; adequately identified root and apparent causes; and identified appropriate corrective actions. Also, the inspectors reviewed licensee procedure NMP-GM-002-GL02, Corrective Action Program Details and Expectations Guideline, to verify the issue was processed in accordance with procedural requirements. Documents reviewed are listed in the Attachment.

b. Findings and Observations

Introduction. The inspectors identified a Green non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion XVI, Corrective Action, concerning the failure of the Unit 2 reactor protection system channel 2 OTDT instrument.

Description. On February 26, 2005, control room operators noted an increase of approximately 5% in Unit 2 channel 2 OTDT setpoint. Instrumentation and Controls (I&C) technicians replaced 7300 process system summator card 2TY-421L. After the replacement card was calibrated, a channel check was performed as the functional post maintenance test (PMT) and the channel was returned to service. On February 27, operators noted that channel 2 OTDT setpoint continued to drift. On March 3, during a normally scheduled channel operability test (COT) of the Unit 2 channel 2 OTDT instrument, I&C technicians discovered that summator card 2PY-456H had failed (pressurizer pressure input to the 2TY-421L summator card) and that the recently replaced 2TY-421L summator card was aligned out of technical specification tolerance low. This card was misaligned because of the undetected bad input from the failed 2PY-456H summator card during the earlier calibration. The 2PY-456H summator card was replaced and the 2TY-421L summator was re-calibrated. A COT was successfully re-performed and the channel was returned to service.

During the review of this condition, the inspectors found that the I&C technicians had replaced summator card 2TY-421L based on previous experience and did not perform troubleshooting of the entire channel. The technicians missed this opportunity to identify that summator card 2PY-456H had failed. The channel check which was used as a PMT did not meet the management expectation that a COT be performed as the PMT. Performing a COT as the PMT would have checked the entire channel and identified the failed card. The failure to properly identify that summator card 2PY-456H had failed caused the technicians to improperly calibrate summator card 2TY-421L outside of acceptable tolerances, further mis-aligning the OTDT channel.

Analysis. This finding is more than minor because it affected the mitigating systems cornerstone attribute of equipment performance and adversely affected the cornerstone objective of ensuring the availability, reliability and capability of systems that respond to initiating events. The finding is of very low safety significance because the event did not involve an actual reduction in the defense-in-depth for reactor protection loop OTDT setpoint channels since three redundant channels remained available to initiate the reactor trip functions. This finding directly involved the cross-cutting aspect of problem identification and resolution in that the licensee failed to properly identify or address these issues in the corrective action system.

Enforcement. 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that measures be established to assure that for significant conditions adverse to quality that the cause of the condition is determined and corrective actions be taken to preclude repetition. Contrary to this, the licensee failed to take adequate corrective actions following the failure of the Unit 2 channel 2 OTDT instrument on February 26, 2005. As a result, the Unit 2 channel 2 instrument continued to deteriorate and led to another failure on March 3. Because this finding is of very low safety significance and has been entered into the corrective action program as CR 2005104571, this violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000425/2005003-01, Failure to Take Adequate Corrective Actions to Preclude Repetitive Failure of Unit 2 Channel 2 OTDT Instrument.

The inspectors also observed that the management expectation that a COT would be the proper PMT for a card replacement was not documented in plant procedure 24901-C, Work Order Functional Tests; I&C technicians did not generate a CR when both summator cards 2TY-421L and 2TY-456H were found out of tolerance; and the second channel failure was not identified as rework.

4OA3 Event Follow-up

Unit 1 Automatic Reactor Trip

The inspectors reviewed the licensee's actions associated with the reactor trip that occurred on April 29. The inspectors observed plant parameters for mitigating systems and fission product barriers, evaluated performance of systems and operators, and confirmed the proper classification and reporting of the event. Documents reviewed are listed in the Attachment. No findings of significance were identified.

4OA5 Other Activities

(Closed) Temporary Instruction (TI) 2515/163, Operational Readiness of Offsite Power

The inspectors collected data pursuant to TI 2515/163, Operational Readiness of Offsite Power. The inspectors reviewed the licensee's procedures related to General Design Criteria 17, Electric Power Systems; 10 CFR 50.63, Loss of All Alternating Current Power; 10 CFR 50.65(a)(4), Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants; and the Technical Specifications for the offsite power system. The data was provided to the Office of Nuclear Reactor Regulation for further review. Documents reviewed are listed in the Attachment.

4OA6 Meetings, Including Exit

On July 8, 2005, the resident inspectors presented the inspection results to Mr. Tom Tynan and other members of his staff, who acknowledged the findings. The inspectors confirmed that proprietary information was not provided or examined during the inspection.

4OA7 Licensee-Identified Violations

The following violation of very low safety significance (Green) was identified by the licensee and is a violation of NRC requirements which meet the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as NCVs.

CTS 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 procedures for maintenance that can affect the performance of safety-related equipment. On March 25, 2005, during the removal of the steam generator manway covers, the licensee failed to perform an inspection of the Unit 1 number 1 steam generator cold leg primary manway gasket seating surface and the Unit 1 number 3

steam generator hot leg primary manway gasket seating surface as required by step 4.5.6 of procedure 25269-C, Steam Generator Primary Manway Cover Removal and Installation. Because of this failure, depressions in the seating surfaces were not discovered until reactor water level was reduced to mid-loop. The seating surfaces were repaired extending mid-loop operations and the risk window for a loss of RCS inventory event by approximately 24 hours. This finding is of very low safety significance because both trains of decay heat removal were available and there were no evolutions in progress which would increase the likelihood of a loss of RCS inventory. The licensee has documented this issue on condition reports 2005102571 and 2005102460.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel:

R. Brown, Training and Emergency Preparedness Manager
C. Buck, Chemistry Manager
J. Robinson, Operations Manager
K. Dyar, Security Manager
T. Tynan, Nuclear Plant General Manager
I. Kochery, Health Physics Manager
J. Williams, Assistant General Manager - Plant Support
S. Swanson, Engineering Support Manager
R. Dedrickson, Assistant General Manager - Operations

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000425/2005003-01	NCV	Failure to Take Adequate Corrective Actions to Preclude Repetitive Failure of Unit 2 Channel 2 OTDT Instrument.
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Closed

2515/163	TI	Operational Readiness of Offsite Power
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LIST OF DOCUMENTS REVIEWED

Section 1R04: Equipment Alignment

Procedures

11115-1, Containment Spray System Alignment
11150-1, Nuclear Service Cooling Water System Alignment
11610-2, Auxiliary Feedwater System Alignment
Drawings: 1X4DB133-1,2; 1X4DB134; 2X4DB161-1,2,3; 1X4DB131
CR 2004001121

Section 1R05: Fire Protection

Procedures

92704-1 Zone 4 - Auxiliary Building Wing Area Fire Fighting Preplan
92705-1 Zone 5 - Auxiliary Building - Level D Fire Fighting Preplan
92749-1 Zone 49 - Auxiliary Building Level 1 Fire Fighting Preplan
92752-1 Zone 52 - Auxiliary Building Level 1 Fire Fighting Preplan
92847-1 Zone 147 - Auxiliary Building - Level 2 Fire Fighting Preplan
92855-2 Zone 155 - Auxiliary Feedwater Pumphouse Train B Fire Fighting Preplan

Attachment

92856-2 Zone 156 - Auxiliary Feedwater Pumphouse Fire Fighting Preplan
 92857A-2 Zone 157A - Auxiliary Feedwater Pumphouse Train C Fire Fighting Preplan
 92860A-1 Zone 160A - NSCW Pumphouse - Train A Fire Fighting Preplan
 92860B-1 Zone 160B - NSCW Pumphouse - Train B Fire Fighting Preplan
 92860A-2 Zone 160A - NSCW Pumphouse - Train A Fire Fighting Preplan
 92860B-2 Zone 160B - NSCW Pumphouse - Train B Fire Fighting Preplan
 92872-1 Zone 172 - Auxiliary Building - Level 2 Fire Fighting Preplan
 92805-1 Zone 105 - Control Building - Level 1 Fire Fighting Preplan
 92805-2 Zone 105 - Control Building - Level 1 Fire Fighting Preplan

Section 1R06: Flood Protection Measures

VEGP Design Manual DC-1218

VEGP Flooding Analysis (Calculation No. X6CXC-30)

CRs: 2005104360, 2005100460, 2005103333, 2005100078, 2005104068, 2005100770,
2005101311, 2005101018, 2005101960

Section 1R12: Maintenance Effectiveness

Maintenance Rule Database: April 2003-March 2005 for Unit 1 125 Vdc 1E electrical system

Maintenance Rule Database: April 2003-March 2005 for Unit 2 125 Vdc 1E electrical system

Maintenance Rule Database: 2003-April 2005 for Unit 1 chemical volume and control system

System Health reports: 2004-1st quarter 2005 for 125 Vdc 1E electrical systems

CRs: 2004001121, 2005102505

Work Orders: 10401979, 10525058

Drawings: 1X4DB114, 1X4DB116-1

Procedures

27811-C, C&D Autoreg Battery Charger Calibration

22408-C, Circuit Board Removal and Reinstallation

Section 1R20: Refueling and Outage Activities

Procedures

00309-C, Control of Unattended Temporary Material in Containment in Modes 1-4

11899-1, RCS Drainedown Configuration Checklist

12000-C, Post Refueling Operations (Mode 6 to Mode 5)

12001-C, Unit Heatup to Hot Shutdown (Mode 5 to Mode 4)

12002-C, Unit Heatup to Normal Operating Temperature and Pressure (Mode 4 to Mode 3)

12003-C, Reactor Startup (Mode 3 to Mode 2)

12004-C, Power Operation (Mode 1)

12006-C, Unit Cooldown to Cold Shutdown

12008-C, Midloop Operations

13005-1, Reactor Coolant System and Refueling Cavity Draining

14210-1, Containment Building Penetrations Verification - Refueling

14406-1, Boron Injection Flow Path Verification - Shutdown

14900-C, Containment Exit Inspection

18019-C, Loss of Residual Heat Removal

27504-C, Equipment Hatch Emergency Closure

29540-C, Risk Assessment Monitoring

29542-C, Shutdown Risk Assessment
93300-C, Conduct of Refueling Operations

Section 1R22: Surveillance Testing

Procedures

24461-C, Inlet Hydrogen/Oxygen Analyzer Channel Operational Test and Channel Calibration
24463-C, Outlet Hydrogen/Oxygen Analyzer Channel Operational Test and Channel Calibration

Section 4OA2: Identification and Resolution of Problems

Procedures

24811-2, Delta T/T avg Loop 2 Protection Channel II 2T-421 Channel Operational Test and Channel Calibration

29401-C, Work Order Functional Tests
20071-C, Maintenance Rework Program

Work Orders: 20504461, 20504575

Condition Reports: 2005100125, 2005101731, 2005101717, 2005101524, 2005100120, 2005101406, 2005101405, 2005101402, 2005100121, 2005103572, 2005103573, 2005103575, 2005103576, 2005103577, 2005103578, 2005103579, 2005103580

Other Documents

Condition Report Quarterly Trend Report, November, December 2004 and January 2005

Condition Report Quarterly Trend Report, February, March and April 2005

QA audit of Refueling Outage 1R12, dated May 23, 2005

QA audit of Chemistry and Radioactive Waste dated June 27, 2005

Section 4OA3: Event Follow-up

Procedures

19000-C, E-0 Reactor Trip or Safety Injection

19001-C, ES-0.1 Reactor Trip Response

91001-C, Emergency Classification and Implementing Instructions

Section 4OA5: Other Activities

Procedures

00354-C Maintenance Scheduling

19100-C ECA-0.0 Loss of all AC Power

00152-C Federal and State Reporting Requirements

18017-C Abnormal Grid Disturbances/Loss of Grid

14230-2 AC Source Verification

13427-1 4160 VAC 1E Electrical Distribution System

Other Documents

AX3BB02-0001 Power Quality Guide for Vogtle Generating Plant