



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II  
SAM NUNN ATLANTA FEDERAL CENTER  
61 FORSYTH STREET, SW, SUITE 23T85  
ATLANTA, GEORGIA 30303-8931

October 29, 2008

Mr. Tom E. Tynan  
Vice President - Vogtle  
Southern Nuclear Operating Company, Inc.  
Vogtle Electric Generating Plant  
7821 River Road  
Waynesboro, GA 30830

SUBJECT: VOGTLE ELECTRIC GENERATING PLANT - NRC INTEGRATED INSPECTION  
REPORT 05000424/2008004 AND 05000425/2008004

Dear Mr. Tynan:

On September 30, 2008, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Vogtle Electric Generating Plant, Units 1 and 2. The enclosed integrated inspection report documents the inspection findings, which were discussed on October 15, with Mr. D. R. Vineyard 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 on the results of this inspection, one finding of very low safety significance was identified which was determined to be a violation of regulatory requirements. The NRC is treating this violation as a non-cited violation (NCV) consistent with Section VI.A.1 of the NRC Enforcement Policy because of the very low safety significance of the violation and because it was entered into your corrective action program. 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 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 Electric Generating Plant.

SNC

2

In accordance with the Code of Federal Regulations 10 CFR 2.390 of the NRC's Rules of Practice, a copy of this letter, its enclosures, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of the 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/**

Scott M. Shaeffer, Chief  
Reactor Projects Branch 2  
Division of Reactor Projects

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

Enclosures: Inspection Report 05000424/2008004 and 05000425/2008004  
w/Attachment: Supplemental Information

cc w/encl: (See page 3)

SNC

2

In accordance with the Code of Federal Regulations 10 CFR 2.390 of the NRC's Rules of Practice, a copy of this letter, its enclosures, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of the 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/**

Scott M. Shaeffer, Chief  
Reactor Projects Branch 2  
Division of Reactor Projects

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

Enclosures: Inspection Report 05000424/2008004 and 05000425/2008004  
w/Attachment: Supplemental Information

cc w/encl: (See page 3)

X PUBLICLY AVAILABLE      ☐ NON-PUBLICLY AVAILABLE      ☐ SENSITIVE      X NON-SENSITIVE  
ADAMS: ☐ Yes      ACCESSION NUMBER: \_\_\_\_\_      X SUNSI REVIEW COMPLETE **CWR**

OFFICE	RII:DRP	RII:DRP	RII:DRP	RII:DRP	RII:DRS	RII:DRS	
SIGNATURE		SMS /RA/	via email	via telecom	via email	via email	
NAME	CRapp	SShaeffer	GMcCoy	TChandler	RMoore	CEven	
DATE		10/29/2008	10/28/2008	10/28/2008	10/21/2008	10/27/2008	
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

OFFICIAL RECORD COPY DOCUMENT NAME: I:\RPB2\VOGTLE\REPORTS\08-04\IR 2008-004.DOC

cc w/encl:  
N. J. Stringfellow  
Manager  
Licensing  
Southern Nuclear Operating Company, Inc.  
Electronic Mail Distribution

Jeffrey T. Gasser  
Executive Vice President  
Southern Nuclear Operating Company, Inc.  
Electronic Mail Distribution

L. Mike Stinson  
Vice President  
Fleet Operations Support  
Southern Nuclear Operating Company, Inc.  
Electronic Mail Distribution

Michael A. MacFarlane  
Southern Nuclear Operating Company, Inc.  
40 Inverness Center Parkway  
P.O. Box 1295  
Birmingham, AL 35201-1295

David H. Jones  
Vice President  
Engineering  
Southern Nuclear Operating Company, Inc.  
Electronic Mail Distribution

Bob Masse  
Resident Manager  
Vogtle Electric Generating Plant  
Oglethorpe Power Corporation  
Electronic Mail Distribution

Moanica Caston  
Vice President and General Counsel  
Southern Nuclear Operating Company, Inc.  
Electronic Mail Distribution

Laurence Bergen  
Oglethorpe Power Corporation  
Electronic Mail Distribution

Mr. N. Holcomb  
Commissioner  
Department of Natural Resources  
Electronic Mail Distribution

Dr. Carol Couch  
Director  
Environmental Protection  
Department of Natural Resources  
Electronic Mail Distribution

Cynthia Sanders  
Program Manager  
Radioactive Materials Program  
Department of Natural Resources  
Electronic Mail Distribution

Jim Sommerville  
(Acting) Chief  
Environmental Protection Division  
Department of Natural Resources  
Electronic Mail Distribution

Mr. Steven M. Jackson  
Senior Engineer - Power Supply  
Municipal Electric Authority of Georgia  
Electronic Mail Distribution

Mr. Reece McAlister  
Executive Secretary  
Georgia Public Service Commission  
Electronic Mail Distribution

Office of the Attorney General  
Electronic Mail Distribution

M. Stanford Blanton, Esq.  
Balch and Bingham Law Firm  
Electronic Mail Distribution

Office of the County Commissioner  
Burke County Commission  
Electronic Mail Distribution

Arthur H. Domby, Esq.  
Troutman Sanders  
Electronic Mail Distribution

SNC

4

Director  
Consumers' Utility Counsel Division  
Governor's Office of Consumer Affairs  
2 M. L. King, Jr. Drive  
Plaza Level East; Suite 356  
Atlanta, GA 30334-4600

Susan E. Jenkins  
Director, Division of Waste Management  
Bureau of Land and Waste Management  
S.C. Department of Health and  
Environmental Control  
Electronic Mail Distribution

SNC

5

Letter to Tom E. Tynan from Scott M. Shaeffer dated October 29, 2008

SUBJECT: VOGTLE ELECTRIC GENERATING PLANT - NRC INTEGRATED INSPECTION  
REPORT 05000424/2008004 AND 05000425/2008004

Distribution w/encl:

C. Evans, RII

L. Slack, RII

OE Mail

RIDSNRRDIRS

PUBLIC

R. Martin, NRR

**U. S. NUCLEAR REGULATORY COMMISSION**

**REGION II**

Docket Nos.: 50-424, 50-425

License Nos.: NPF-68, NPF-81

Report Nos.: 05000424/2008004 and 05000425/2008004

Licensee: Southern Nuclear Operating Company, Inc.

Facility: Vogtle Electric Generating Plant, Units 1 and 2

Location: Waynesboro, GA 30830

Dates: July 1, 2008 through September 30, 2008

Inspectors: G. McCoy, Senior Resident Inspector  
T. Chandler, Resident Inspector  
R. Moore, Senior Reactor Inspector (Section 4OA5.2)  
C. Even, Reactor Inspector (Section 4OA5.2)

Approved by: Scott M. Shaeffer, Chief  
Reactor Projects Branch 2  
Division of Reactor Projects

Enclosure

## SUMMARY OF FINDINGS

IR 05000424/2008-004, 05000425/2008-004; 07/01/2008 - 09/30/2008; Vogtle Electric Generating Plant, Units 1 and 2; Event Followup

The report covered a three-month period of inspection by resident inspectors and two reactor inspectors. One Green non-cited violation 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 assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, Reactor Oversight Process, Rev 4 dated December 2006.

### A. NRC-Identified and Self-Revealing Findings

Green. A self-revealing non-cited violation of TS 5.4, Procedures, was identified when the licensed control room operator failed to perform step 4.3.5.10.b of procedure 3010-1, Boron Thermal Regeneration System, Rev 57. Failure to properly perform this step resulted in approximately 500 gallons of unborated water being added to the VCT causing an inadvertent positive reactivity addition to the Unit 1 reactor.

The failure to place handswitch 1-HS-7054 in the CLOSED position as required by procedure is a performance deficiency. The minor screening criteria in IMC 0612, Power Reactor Inspection Reports, Appendix B, was not used due to the lack of clear guidance regarding inadvertent reactivity additions. Therefore, in consultation with the NRR program office, regional management determined this finding is more than minor because the licensed operator failed to properly implement procedure 13010-C which resulted in an inadvertent positive reactivity addition causing reactor power to briefly increase above 100%. The finding, assessed using the Significance Determination Process, was determined to be of very low safety significance (Green) because the resulting transient did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. The inspectors determined this finding was related to the Work Practices component of the Human Performance cross-cutting area in that the licensed operator did not have the procedure in-hand during use as required by procedure 00054-C, Rules for Performing Procedures, Rev. 19. [H.4(b)] (Section 4OA3)

### B. Licensee-Identified Violations

None

Enclosure



## REPORT DETAILS

### Summary of Plant Status

Unit 1 operated at full rated thermal power (RTP) for the entire inspection period.

Unit 2 started the inspection period at essentially full RTP. The unit was shutdown on September 14 for a planned refueling outage.

### 1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

#### 1R01 Adverse Weather Protection

##### a. Inspection Scope

Impending Adverse Weather Condition. On September 4, inspectors reviewed procedures 11889-C, Severe Weather Checklist, and 20054-C, Maintenance Support for the Severe Weather Checklist to verify that the licensee was prepared to implement actions when hurricane Hanna was predicted to affect the Burke County area. The inspectors walked down the outside areas of the plant to identify the presence of loose materials which could affect the operation of plant equipment.

##### b. Findings

No findings of significance were identified.

#### 1R04 Equipment Alignment

##### a. Inspection Scope

Partial System Walkdown. 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 documents listed in the Attachment. Additionally, the inspectors reviewed the condition report database to verify that equipment alignment problems were being identified and appropriately resolved.

- Unit 2 auxiliary feedwater (AFW) system prior to testing of the turbine driven AFW pump
- Unit 2 train A high head safety injection pump when the B train was out of service for maintenance
- Unit 2 train A safety injection (SI) pump during a refueling outage

##### b. Findings

No findings of significance were identified.

Enclosure

## 1R05 Fire Protection

### a. Inspection Scope

Fire Area Tours. The inspectors walked down the following five 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 condition report (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 Section 9.5.1, Fire Protection Program, and Appendix 9A, Fire Hazards Analysis, were met. Documents reviewed are listed in the Attachment.

- Unit 1 and Unit 2 main control room
- Technical support center
- Unit 1 auxiliary building pipe penetration area on level C
- Unit 2 auxiliary building pipe penetration on level B
- Unit 2 auxiliary component cooling water pump room

### b. Findings

No findings of significance were identified.

## 1R06 Flood Protection Measures

### a. Inspection Scope

Internal Flood Review. The inspectors walked down the following area which contained risk-significant structures, systems and components 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 (TSs).

- Unit 2 AFW building

### b. Findings

No findings of significance were identified.

## 1R11 Licensed Operator Requalification

### a. Inspection Scope

Resident Quarterly Observation. The inspectors observed operator performance on July 16, during licensed operator simulator training described on simulator exercise guide Dynamic Simulator Scenarios V-RQ-SE-08405. The simulator scenarios covered operator actions resulting from steam generator tube rupture, a pressurizer steam space leak, and an automatic reactor trip failure. Documents reviewed are listed in the Attachment. The inspectors specifically assessed the following areas:

- Correct use of the abnormal and emergency operating procedures
- Ability to identify and implement appropriate actions in accordance with the requirements of the technical specifications
- Clarity and formality of communications in accordance with procedure 1000-C, Conduct of Operations
- Proper control board manipulations including critical operator actions
- Quality of supervisory command and control
- Effectiveness of the post-evaluation critique

### b. Findings

No findings of significance were identified.

## 1R12 Maintenance Effectiveness

### a. Inspection Scope

The inspectors reviewed the following two condition reports 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 inspector also reviewed one safety-significant system to verify that 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. Also, the inspectors interviewed system engineers and the maintenance rule coordinator to assess the accuracy of identified performance deficiencies and extent of condition.

- CR 2008105578, Containment cooling fan number 1 failed to start in slow speed.
- CR 2008106489, Unit 2 train B NSCW fan number 4 tripped.

### b. Findings

No findings of significance were identified.

Enclosure

### 1R13 Maintenance Risk Assessments and Emergent Work Evaluation

#### a. Inspection Scope

The inspectors reviewed the following four work activities 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.

- July 25, planned maintenance outages for the Unit 2 train A containment spray (CS) pump and the Unit 2 Train A SI pump
- July 28, Unit 2 train B coolant charging pump was out of service for planned maintenance
- August 4, Unit 2 train A CS pump was out of service for corrective maintenance
- September 6, performance of multiple surveillances in preparation for Unit 2 refueling outage

#### b. Findings

No findings of significance were identified.

### 1R15 Operability Evaluations

#### a. Inspection Scope

The inspectors reviewed the following five evaluations to verify they met the requirements of procedure NMP-GM-002, Corrective Action Program, and NMP-GM-002-001, Corrective Action Program Instructions. The scope of this inspection included a review of the technical adequacy of the evaluations, the adequacy of compensatory measures, and the impact on continued plant operation.

- CR 2008107647, Unit 2 train A sequencer power supply failure.
- CR 2008107492, Fuel assembly in the spent fuel pool lifted by the hold down spring
- CR 2008109254, Defective security diesel generator breaker
- CR 2008109286, Breaches in the Unit 2 piping penetration negative pressure boundary
- CR 2008109859, ultra-low sulfur diesel fuel was added to the 2B EDG fuel oil storage tank.

#### b. Findings

No findings of significance were identified.

Enclosure

## 1R19 Post-Maintenance Testing

### a. Inspection Scope

The inspectors either observed post-maintenance testing or reviewed the test results for the following four 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 were sufficient to meet the (TS) operability requirements.

- Work order (WO) 10813359, Replacement of failed Unit 1 Train B reactor trip breaker
- WOs 20601148, 20802972, and 20802974, Unit 2 train A CS pump Outage
- WO 20715268, Clean/inspect/test/lubricate the Unit 2 train B NSCW pump #4 discharge valve (2HV11613)
- WO 20810774, Unit 2 train B CS pump mechanical seal replacement

### b. Findings

No findings of significance were identified.

## 1R20 Refueling and Other Outage Activities

### a. Inspection Scope

The inspectors performed the inspection activities described below for the Unit 2 refueling outage that began on September 14. 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. Inspection activities included:

- Prior to the outage, the resident inspectors reviewed the licensee's integrated risk control plan to verify that activities, systems, and/or components which could cause unexpected reactivity changes were identified in the outage risk plan.
- Observed portions of the plant shutdown and cooldown to verify that the technical specification cooldown restrictions were followed.
- Reviewed reactor coolant system pressure, level, and temperature instruments to verify that the instruments provided accurate indication and that allowances were made for instrumentation errors
- Verified that outage work did not impact the operation of the spent fuel cooling system during and after core load.
- 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
- Observed decay heat removal parameters to verify that the system was properly functioning and providing cooling to the core

Enclosure

- 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
- Observed the licensee's control of containment penetrations to verify that the requirements of the technical specifications were met
- Reviewed the licensee's plans for changing plant configuration to verify that technical specifications, license conditions, and other requirements, commitments, and administrative procedure prerequisites were met prior to changing plant configuration

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors reviewed the following four 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.

Surveillance Tests

- 14980A-2, Unit 2 train A EDG monthly operability test

In-Service Tests (IST)

- 14545-2, Unit 2 train A MDAFW pump monthly operability test
- 14545-2, Unit 2 train B MDAFW pump monthly operability test
- 14802-1, Unit 1 B train NSCW pump #6 IST and response time test

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation

a. Inspection Scope

The inspectors reviewed the facility activation exercise guide and observed the following emergency response activity to verify the licensee was properly classifying emergency events, making the required notifications, and making appropriate protective action recommendations in accordance with procedures 91001-C, Emergency Classifications, and 91305-C, Protective Action Guidelines.

- On August 6 the licensee conducted an emergency preparedness drill involving an uncontrolled release of activity from a waste decay tank, followed by a loss of all offsite power and a loss of all onsite AC power. The technical support center was activated and the site participated in the exercise.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification

a. Inspection Scope

The inspectors sampled licensee submittals for the listed PIs during the period from July 1, 2007 - June 30, 2008, for Unit 1 and Unit 2. The inspectors verified the licensee's basis in reporting each data element using the PI definitions and guidance contained in procedures 00163-C, NRC Performance Indicator and Monthly Operating Report Preparation and Submittal, and Nuclear Energy Institute (NEI) 99-02, Regulatory Assessment Indicator Guideline.

Mitigating Systems Cornerstone

- Mitigating Systems Performance Index, High Pressure Injection System
- Mitigating Systems Performance Index, Residual Heat Removal System
- Mitigating Systems Performance Index, Heat Removal System

The inspectors reviewed Unit 1 and Unit 2 operator log entries, the Vogtle MSPI basis document, the monthly operating reports and monthly PI summary reports to verify that the licensee had accurately submitted the PI data.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems

- .1 Daily Condition Report Review. 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.

## .2 Focused Review

### a. Inspection Scope

The inspectors performed a detailed review of the following CR to verify the full extent of the issue was identified, an appropriate evaluation was performed, and appropriate corrective actions were specified and prioritized. The inspectors evaluated the CR against the licensee's corrective action program as delineated in licensee procedure NMP-GM-002, Corrective Action Program, and 10 CFR 50, Appendix B.

- CR 2008106941, During a surveillance test the inboard seal of the Unit 2 train B CS pump overheated.

### b. Findings

No findings of significance were identified.

## 4OA3 Event Followup

### .1 Inadvertent Positive Reactivity Addition

#### a. Inspection Scope

Resident inspectors reviewed the circumstances surrounding an unintended dilution of the reactor coolant system as described in condition report 2008108672, Inadvertent dilution while performing procedure for chemistry control of the Boron Thermal Regeneration System (BTRS) chilled water system. The inspectors interviewed operators on-shift at the time of the event, reviewed the condition report and subsequent disposition, attended the associated human performance board, reviewed the applicable procedures, and evaluated the plant response using plots of reactor power and Tave during the event.

#### b. Findings

Introduction. A Green self-revealing NCV of TS 5.4, Procedures, was identified when the licensed control room operator failed to perform step 4.3.5.10.b of procedure 3010-1, Boron Thermal Regeneration System, Rev 57. Failure to properly perform this step resulted in approximately 500 gallons of unborated water being added to the VCT, causing an inadvertent positive reactivity addition to the Unit 1 reactor.

Description. On August 19, the licensee was conducting a flush of the BTRS chilled water piping using procedure 13010-1. This procedure was designated as 'Continuous Use' which required operators to have the procedure in-hand during use. The flush was being directed by a field operator because the majority of the operator actions were performed outside the main control room. However, a few steps were performed in the main control room by the licensed operator who was designated as "Operator at the Controls." Due to the limited number of steps to be performed, the licensed operator decided that it was not necessary to have the procedure in-hand. Step 4.3.5.10.b

Enclosure



directed the CVCS BTRS inlet isolation valve handswitch, 1-HS-7054, be placed in the CLOSED position. When directed by the field operator to perform step 4.3.5.10.b, the licensed operator verified that valve 1-HV-7054 was closed, but did not place handswitch 1-HS-7054 in the CLOSED position as required by procedure 13010-1. Subsequently, when the licensed operator placed the CVCS BTRS selector switch in the DILUTE position, valve 1-HV-7054 automatically opened. As a result, approximately 500 gallons of unborated water from the BTRS was added to the VCT. The addition of unborated water to the VCT resulted in an inadvertent positive reactivity addition to the Unit 1 reactor which caused power to increase above 100% RTP. The operators became aware of the reactivity addition when control rods began to automatically insert. The control room operators responded to the event by manually inserting control rods and reducing main generator load to reduce reactor power below 100%. The maximum 1-minute average power achieved was 100.73%.

Analysis. The failure to place handswitch 1-HS-7054 in the CLOSED position as required by procedure is a performance deficiency. The minor screening criteria in IMC 0612, Power Reactor Inspection Reports, Appendix B, was not used due to the lack of clear guidance regarding inadvertent reactivity additions. Therefore, in consultation with the NRR program office, regional management determined this finding is more than minor because the licensed operator failed to properly implement procedure 13010-C which resulted in an inadvertent positive reactivity addition causing reactor power to briefly increase above 100%. This finding, assessed using the SDP, was determined to be of very low safety significance (Green) because the resulting transient did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. The inspectors determined this finding was related to the Work Practices component of the Human Performance cross-cutting area in that the licensed operator did not have the procedure in-hand during use as required by procedure 00054-C, Rules for Performing Procedures, Rev. 19. [H.4(b)]

Enforcement. Technical Specification 5.4.1.a. requires that written procedures as specified in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978, be established, implemented, and maintained. Regulatory Guide 1.33 states that instructions for energizing, filling, venting, draining, startup, shutdown, and changing modes of operation should be prepared for the CVCS, which contains the BTRS. Contrary to the above, on August 19, 2008, a licensed reactor operator failed to implement procedure 13010-1 when he improperly performed step 4.3.5.10.b. Because the finding was of very low safety significance and was entered into the licensee's corrective action program as CR 2008108672, this violation is being treated as an NCV, consistent with section VI.A.1 of the NRC Enforcement Policy: NCV 05000424/2008004-01, Human Performance Error Results in Unplanned Reactivity Addition.

Enclosure

#### 4OA5 Other Activities

##### .1 Quarterly Resident Inspector Observations of Security Personnel and Activities

###### a. Inspection Scope

During the inspection period, the inspectors conducted observations of security force personnel and activities to ensure that the activities were consistent with licensee security procedures and regulatory requirements relating to nuclear plant security. These observations took place during both normal and off-normal plant working hours.

###### b. Findings

No findings of significance were identified.

##### .2 (Discussed) Temporary Instruction (TI) 2515/176, Emergency Diesel Generator Technical Specification Surveillance Requirements Regarding Endurance and Margin Testing

###### a. Inspection Scope

The objective of this TI was to gather information to assess the adequacy of nuclear power plant EDG endurance and margin testing as prescribed by plant-specific TSs. The inspector interfaced with the appropriate station staff to obtain the information specified in Attachment 1 of the TI Worksheet. The TI applies to all operating nuclear power reactor licensees that use EDGs as the onsite standby power supply. The inspector verified the accuracy of the information by review of TS, EDG Design Basis Event (DBE) loading calculations, EDG endurance run test procedures, test data from the last three endurance tests performed on each EDG, EDG ratings, and EDG operating history. The information gathered will be forwarded to Nuclear Reactor Regulation/Division of Engineering/Electrical Engineering Branch (NRR/DE/EEEB) for further review to assess the adequacy and consistency of EDG testing at nuclear stations.

###### b. Findings and Observations

The TI is presently scheduled to be open until completion of the NRR/DE/EEEB review.

##### .3 Review of Institute of Nuclear Power Operations (INPO) Evaluation Report

The inspectors reviewed the results of an INPO evaluation of licensee performance conducted during January and February 2008. The report did not identify any significant licensee performance issues that had not been previously addressed and/or reviewed by the NRC.

Enclosure

4OA6 Meetings, Including Exit

Exit Meeting

On October 15, the resident inspectors presented the inspection results to Mr. D. R. Vineyard and other members of his staff, who acknowledged the findings. The inspectors confirmed that proprietary information was not provided or examined during the inspection.

ATTACHMENT: SUPPLEMENTAL INFORMATION

Enclosure

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### **Licensee personnel:**

R. Brown, Training and Emergency Preparedness Manager  
C. Buck, Chemistry Manager  
W. Copeland, Performance Analysis Supervisor  
R. Dedrickson, Plant Manager  
K. Dyar, Security Manager  
I. Kochery, Health Physics Manager  
J. Robinson, Work Control Superintendent  
T. Tynan, Site Vice-President  
D. Vineyard, Operations Manager  
J. Williams, Site Support Manager  
T. Youngblood, Site Engineering Manager

#### **NRC personnel:**

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

### **LIST OF ITEMS OPENED AND CLOSED**

#### **Opened and Closed**

05000424/2008004-01	NCV	Human Performance Error Results in Unplanned Reactivity Addition
---------------------	-----	--

#### **Discussed**

2515/176	TI	Emergency Diesel Generator Technical Specification Surveillance Requirements Regarding Endurance and Margin Testing
----------	----	---

### **LIST OF DOCUMENTS REVIEWED**

#### **Section 1R04: Equipment Alignment**

##### **Procedures**

11610-2, Auxiliary Feedwater System Alignment  
11105-2, Safety Injection System Alignment

##### **Drawings**

2X4DB161-1, 2, 3, Auxiliary Feedwater System  
2X4DB168-3, Condensate and Feedwater System  
2X4DB116-1, 2 Chemical and Volume Control System

##### **System Health Reports**

Auxiliary Feedwater System 1302A, Second Quarter 2008  
Safety Injection System 1204, Second Quarter 2008  
Chemical and Volume Control System 1208, Second Quarter 2008

**Section 1R05: Fire Protection**Procedures

92805-1, Zone 105 Unit 1 Control Bldg. Level 1 Fire Fighting Preplan  
 92805-2, Zone 105 Unit 2 Control Bldg. Level 1 Fire Fighting Preplan  
 92806-1, Zone 106 Unit 1 Control Bldg. Level 1 Fire Fighting Preplan  
 92883A-1, Zone 183A Unit 1 Control Bldg. Level 1 Fire Fighting Preplan  
 92921-1, Zone 601 TSC Fire Fighting Preplan  
 92922-1, Zone 602 TSC Fire Fighting Preplan  
 92923-1, Zone 603 TSC Electrical Equipment Room Fire Fighting Preplan  
 92924-1, Zone 604 TSC Battery Room Fire Fighting Preplan  
 92925-1, Zone 605 TSC Fire Fighting Preplan  
 92714B-1, Zone 14B Unit 1 Aux. Bldg. Level C Fire Fighting Preplan  
 92726B-2, Zone 26B Unit 2 Aux. Bldg. Levels A&B Fire Fighting Preplan

**Section 1R20: Refueling and Other Outage Activities**Procedures

12005-C, Reactor Shutdown to Hot Standby (Mode 2 to Mode 3)  
 12006-C, Unit Cooldown to Cold Shutdown  
 12007-C, Refueling Operations (Entry into Mode 6)

Other Documents

2R13 Outage Risk Control Plan

**Section 4OA5: Other**

Technical Specifications, Unit 1, Amendment 151  
 Technical Specifications, Unit 2, Amendment 132

Procedures

14668A-1, Train A Diesel Generator 24 Month Operability Test, Rev. 4.2  
 14668A-2, Train A Diesel Generator 24 Month Operability Test, Rev. 3.2  
 14668B-1, Train B Diesel Generator 24 Month Operability Test, Rev. 3.3  
 14668B-2, Train B Diesel Generator 24 Month Operability Test, Rev. 3.3

Calculations

X3CE01, Diesel Generator Steady State Load Study, Rev. 9

Other

14666-103X-134068, Train A Diesel Generator and ESFAS Test, 2/03  
 14668-101-146021, Train A Diesel Generator 24 Month Operability Test, 1/05  
 14668-101-1061126701, Train A Diesel Generator 24 Month Operability Test, 2/07  
 14667-103X-133802, Train B Diesel Generator and ESFAS Test, 2/03  
 14668-102-146022, Train B Diesel Generator 24 Month Operability Test, 1/05  
 14668-102-1061126801, Train B Diesel Generator 24 Month Operability Test, 1/07  
 14668-201-2071185301, Train A Diesel Generator 24 Month Operability Test, 5/08  
 14668-201-2052772901, Train A Diesel Generator 24 Month Operability Test, 1/06  
 14668-201-14065, Train A Diesel Generator 24 Month Operability Test, 2/04  
 14668-202-2071185401, Train B Diesel Generator 24 Month Operability Test, 6/08  
 14668-202-2052773001, Train B Diesel Generator 24 Month Operability Test, 1/06  
 14668-202-142254, Train B Diesel Generator 24 Month Operability Test, 1/04