



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

July 20, 2004

Virginia Electric and Power Company  
ATTN: Mr. David A. Christian  
Sr. Vice President and  
Chief Nuclear Officer  
Innsbrook Technical Center - 2SW  
5000 Dominion Boulevard  
Glen Allen, VA 23060-6711

**SUBJECT: SURRY POWER STATION - NRC INTEGRATED INSPECTION REPORT  
05000280/2004003, 05000281/2004003, AND 07200002/2004001**

Dear Mr. Christian:

On June 26, 2004, the United States Nuclear Regulatory Commission (NRC) completed an inspection at your Surry Power Station, Units 1 and 2, and the Surry Independent Spent Fuel Storage Installation. The enclosed integrated inspection report documents the inspection findings which were discussed on July 12, 2004, with Mr. Blount 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. No findings of significance were identified by the NRC.

Based on the results of this inspection, no findings of significance were identified. However one licensee-identified violation which was determined to be of very low safety significance is listed in Section 4OA7 of this report. If you contest this non-cited violation, 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 the Surry Power Station.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, 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

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/**

Kerry D. Landis, Chief  
Reactor Projects Branch 5  
Division of Reactor Projects

Docket Nos.: 50-280, 50-281, 72-002  
License Nos.: DPR-32, DPR-37, SNM-2501

Enclosure: Integrated Inspection Report 05000280, 281/2004003 and 07200002/2004001  
w/Attachment: Supplemental Information

cc w/encl:  
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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.: 50-280, 50-281, 72-002

License Nos.: DPR-32, DPR-37, SNM-2501

Report Nos.: 05000280/2004003, 05000281/2004003, 07200002/2004001

Licensee: Virginia Electric and Power Company (VEPCO)

Facility: Surry Power Station, Units 1 & 2  
Surry Independent Spent Fuel Storage Installation

Location: 5850 Hog Island Road  
Surry, VA 23883

Dates: March 28 - June 26, 2004

Inspectors: G. McCoy, Senior Resident Inspector  
N. Garrett, Senior Resident Inspector  
D. Arnett, Resident Inspector  
L. Miller, Sr. Operations Engineer (Section 1R11.1)  
M. Scott, Senior Reactor Inspector (Section 1R12.2 )  
K. Van Doorn, Senior Reactor Inspector (Section 1R07)

Approved by: K. Landis, Chief, Reactor Projects Branch 5  
Division of Reactor Projects

Enclosure

## SUMMARY OF FINDINGS

IR 05000280/2004-003, IR 05000281/2004-003, IR 07200002/2004-001, 3/28/2004 - 6/26/2004, Virginia Electric and Power Co.; Surry Power Station Units 1 & 2 and Independent Spent Fuel Storage Installation, Routine Integrated Report.

The report covered a three month period of inspection by resident inspectors and announced inspections by an operations engineer, and two senior reactor inspectors. No findings of significance were identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using IMC 0609, "Significance Determination Process," (SDP). Findings for which the SDP does not apply may be Green or be 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, Revision 3, dated July 2000.

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

No findings of significance were identified.

### B. Licensee Identified Violations

One violation of very low safety significance that 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 of this report.

## REPORT DETAILS

### Summary of Plant Status

Unit 1 started the report period at full power. On May 13, 2004, Unit 1 power was reduced in order to address temperature problems on the Unit 1 A main transformer high side bushing. On May 15 the unit was taken offline for repairs. The unit was returned online and reached full power on May 16. The unit operated at full power for the remainder of the inspection period.

Unit 2 started the report period at full power. On May 21, Unit 2 tripped because of a generator trip due to a failure of a coupling capacitor potential device in the switchyard. After repairs were completed, the unit was returned to full power on May 31. The unit operated at full power for the remainder of the inspection period.

### 1. REACTOR SAFETY

#### **Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity**

#### 1R04 Equipment Alignment

##### .1 Partial System Walkdowns

##### a. Inspection Scope

The inspectors performed partial walkdowns of the following 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 corrective action system to verify that equipment alignment problems were being identified and properly resolved.

- Unit 1 outside recirculation spray system, while 1-RS-P-2A was out of service,
- Number 1 and number 2 emergency diesel generators while the number 3 emergency diesel generator was out of service, and
- Unit 2 auxiliary feedwater system after the completion of maintenance.

##### b. Findings

No findings of significance were identified.

##### .2 Complete System Walkdown

##### a. Inspection Scope

The inspectors performed a detailed walkdown on the accessible portions of the Unit 2 safety injection system to review the system alignment and condition. The inspectors reviewed applicable documents to determine the correct system alignment, reviewed outstanding maintenance work orders, plant issues associated with system deficiencies, verified valve and breaker position, and component labeling. In addition, the inspectors

verified material condition of valves, pumps, hangers, brackets, and other system supports. The inspectors reviewed the corrective action database to identify that equipment alignment issues are being identified and resolved. The documents reviewed are listed in the attachment.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

.1 Fire Area Walkdowns

a. Inspection Scope

The inspectors conducted tours of the following nine areas to assess the adequacy of the fire protection program implementation. The inspectors checked for the control of transient combustibles and the condition of the fire detection and fire suppression systems (using "Surry Power Station (SPS) Appendix R Report,") in the following areas:

- Unit 2 emergency switchgear room,
- Battery room 1A,
- Battery room 2A,
- North fuel oil pump house,
- South fuel oil pump house,
- Unit 1 main steam valve house,
- Unit 1 emergency switchgear room,
- Number 2 emergency diesel generator room, and
- Battery room 2B.

b. Findings

No findings of significance were identified.

.2 Annual Fire Brigade Drill

a. Inspection Scope

The inspectors observed a fire brigade drill to evaluate the readiness of the licensee's personnel to fight fires. Specific aspects evaluated were: use of protective clothing and self contained breathing apparatus; fire hose deployment and reach; approach into the fire area; effectiveness of communications among the fire brigade members and the control room; sufficiency of fire fighting equipment brought to the fire scene; and the drill objectives and acceptance criteria. The drill was performed in mechanical equipment room number 1 which contains the Unit 1 feedwater regulation valves and the nitrogen-16 monitors.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance

a. Inspection Scope

The inspectors reviewed inspection and test procedures and associated records and other documentation to ensure that heat exchanger (HX) deficiencies that could mask or degrade performance were identified. Inspection and monitoring records for risk significant HXs were reviewed which included performance for the charging pump lube oil coolers, control room chiller condensers, and the recirculation spray system. The inspectors also reviewed general health of the service water (SW) system via review of chemistry activities; review of SW corrective maintenance history; review of SW system health reports; and discussions with the system engineer. Selected Plant Issues and a self-assessment were reviewed for potential common cause problems and problems which could affect system performance, to confirm the licensee was entering problems into the corrective action program and initiating appropriate corrective actions. In addition, the inspectors conducted a walk down of most of the SW system and the major components.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification

.1 Annual Operating Test Results

a. Inspection Scope

The licensee completed the comprehensive requalification written examinations on February 13, and the annual operating tests on April 9, required to be given to all licensed operators by 10 CFR 55.59(a)(2). The inspector reviewed the overall pass/fail results of the written examinations, individual operating tests, and the crew simulator operating tests. These results were compared to the thresholds established in Manual Chapter 609 Appendix I, Operator Requalification Human Performance Significance Determination Process.

b. Findings

No findings of significance were identified.

## .2 Operator Requalification Testing

### a. Inspection Scope

The inspectors observed licensed operator performance during simulator training session RQ-04.2-SE-1 to determine whether the operators:

- were familiar with and could successfully implement the procedures associated with recognizing and recovering from a loss of condenser vacuum and a major steam line break inside containment;
- recognized the high-risk actions in those procedures; and,
- were familiar with related industry operating experience.

### b. Findings

No findings of significance were identified.

## 1R12 Maintenance Effectiveness

### .1 Review of Performance Issues

#### a. Inspection Scope

For the equipment issues described in the plant issues listed below, the inspectors evaluated the licensee's effectiveness of the corresponding preventive and corrective maintenance. For each selected item below, the inspectors performed a detailed review of the problem history and surrounding circumstances, evaluated the extent of condition reviews as required, and reviewed the generic implications of the equipment and/or work practice problem. Inspectors performed walkdown of the accessible portions of the system, performed in-office reviews of procedures and evaluations, and held discussions with system engineers. Inspectors compared the licensee's actions with the requirements of the Maintenance Rule (10 CFR 50.65) VPAP 0815, "Maintenance Rule Program," and the Surry Maintenance Rule Scoping and Performance Criteria Matrix.

- Emergency service water pump maintenance, and
- Battery maintenance program (black battery, technical support center battery & security diesel battery).

#### b. Findings

No findings of significance were identified.

### .2 Maintenance Rule Periodic Evaluation (Biennial)

#### a. Inspection Scope

The inspectors reviewed the licensee's maintenance rule (MR) periodic assessment, "Self-Assessment SPS-SA-03-27, 2003 Maintenance Rule Periodic Assessment" dated 12/18/03, while on-site the week of April 19, 2004. The report was issued to satisfy



paragraph (a)(3) of 10 CFR 50.65 and covered the 18 month period ending May 31, 2003. The inspection was to determine the effectiveness of the assessment and that it was issued in accordance with the MR time requirement and included evaluation of: balancing reliability and unavailability, (a)(1) activities, (a)(2) activities, and use of industry operating experience. To verify compliance with 10 CFR 50.65, the inspectors reviewed selected MR activities covered by the assessment period for the following maintenance rule systems: station blackout generator, emergency diesel generators, 125 Volt DC vital bus, instrument and service air systems, residual heat removal system. Specific procedures and documents reviewed are listed in the attachment to this report.

During the inspection, the inspectors reviewed selected plant work order (WO) data and the site guidance implementing procedure, discussed and reviewed relevant corrective action issues, reviewed generic operations event data, structural reports, and probabilistic risk data, and discussed issues with system engineers. Operational event information use in MR functions was evaluated by the inspectors. The inspectors selected work orders, a MR assessment, and other corrective action documents of systems recently removed from 10 CFR 50.65 a(1) status and those in a(2) status for some period to assess the justification for their status. The documents were compared to the site's MR program criteria, and the MR a(1) evaluations and MR related databases.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors evaluated the adequacy, accuracy, and completeness of plant risk assessments performed prior to changes in plant configuration for maintenance activities or in response to emergent conditions. When applicable, inspectors assessed if the licensee entered the appropriate risk category in accordance with plant procedures. Specifically, the inspectors reviewed:

- Turbine building sump pumps out of service for sump inspection with the Unit 2 B bearing cooling pump out of service for maintenance and work in the 230KV switchyard,
- Number 3 emergency diesel generator (EDG), the Unit 2 service air compressor and the D component cooling water pump out of service for maintenance,
- Blackout diesel generator out of service for maintenance with the number 2 EDG out of service for a surveillance test,
- Number 3 emergency diesel generator out of service for maintenance and a high temperature on the Unit 1 A main transformer high side bushing,
- Operational test of the Unit 1 B charging pump, number 1 EDG monthly start test and the unit 1 turbine driven auxiliary feed water pump surveillance.

b. Findings

No findings of significance were identified.

1R14 Operator Performance During Non-Routine Evolutions and Events

a. Inspection Scope

For the non-routine events described below, the inspectors reviewed operator logs, plant computer data, and strip charts to determine what occurred and how the operators responded, and to verify if the response was in accordance with plant procedures;

- Unit 1 ramp to repair the 'A' main transformer high side bushing, and
- Unit 2 trip following failure of the 'A' phase coupling capacitor potential device.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors evaluated the technical adequacy of the five operability evaluations to ensure that operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The operability evaluations were described in the engineering transmittal (ET) and plant issues listed below:

- Plant Issue S-2004-1510, Clogging of the charging pump heat exchanger;
- Plant Issue S-2004-1984, Low residual heat removal differential pressure during surveillance test;
- Justification for Continued Operation (JCO) SC-03-003 revision 3, Control of auxiliary feedwater to the steam generators with one emergency bus de-energized;
- Plant Issue S-2004-1567, Unit 1 Main Steam Pressure transmitter tubing support; and
- Plant Issue S-2004-2112 and WO 513688-01, Oil contamination of the security diesel battery.

b. Findings

No findings of significance were identified.

#### 1R16 Operator Workarounds

##### a. Inspection Scope

The inspectors reviewed the licensee's list of identified operator workarounds as of April 6, 2004, to assess the cumulative effects of operator workarounds on the reliability, availability, and potential for mis-operation of a system to verify that there was no increase in overall plant risk. This assessment included increases of initiating event frequencies, effects on multiple mitigating systems, and the ability of operators to correctly respond to abnormal plant conditions.

##### b. Findings

No findings of significance were identified.

#### 1R19 Post Maintenance Testing

##### a. Inspection Scope

The inspectors reviewed the five post maintenance test procedures and activities associated with the repair or replacement of the following components to determine whether the procedures and test activities were adequate to verify operability and functional capability following maintenance of the following equipment:

- Work Order (WO) 511177-01, Replace 3-EG-P-1 and 3-EG-FL-2 flange leak;
- WO 512482-01, PS 2 Non-urgent failure of U1 2BD rod control;
- WO 512181-01, Replace relay 3-CLS-IBM-X;
- WO 512673-01, 1-FW-MOV-160A, AFW X-tie; and
- WO 513004-01, AFW recirculation line modification.

##### b. Findings

No findings of significance were identified.

#### 1R20 Refueling and Outage Activities (Unit 2)

##### a. Inspection Scope

The inspectors performed the inspection activities described below for the Unit 2 forced outage that began on May 21, 2004, and ended May 27, 2004.

The inspectors reviewed portions of the cooldown process to verify that technical specification cooldown restrictions were followed.

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 evaluated.

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 selected control room operations to verify that the licensee was controlling reactivity in accordance with the technical specifications;

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 various problems that arose during the outage to verify that the licensee was identifying problems related to refueling outage activities at an appropriate threshold and entering them in the corrective action program.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

For the seven surveillance tests listed below, the inspectors examined the test procedure and either witnessed the testing and/or reviewed test records to determine whether the scope of testing adequately demonstrated that the affected equipment was functional and operable:

- 0-OPT-SW-001, "Emergency Service Water 1-SW-P-1A performance test;"
- 0-NSP-CW-001, "High Level Intake Structure Canal Level Probe Inspection;"
- 0-OPT-EG-001, "Number 3 Emergency Diesel Generator Monthly Start Test;"
- 2-PT-1.2, "Nuclear Instrumentation System Power Range Trip Channel Test;"
- 0-OP-AAC-001, "Auxiliary AC Diesel Operation;"
- 2-PT-8.1, "Reactor Protection System Logic (Normal Operations);"
- 0-MOP-EG-001 and 0-OPT-EG-001, "Number 3 Emergency Diesel Generator Surveillance Test."

b. Findings

No findings of significance were identified.

## Cornerstone: Emergency Preparedness

### 1EP6 Drill Evaluation

#### a. Inspection Scope

The inspectors observed an emergency response training drill conducted on April 13, in the simulator and the technical support center to assess the licensee's performance in emergency classification, notification, and protective action recommendation development.

#### b. Findings

No findings of significance were identified.

## 4 OTHER ACTIVITIES

### 4OA1 Performance Indicator Verification

#### .1 "Safety System Unavailability" Performance Indicator

#### a. Inspection Scope

The inspectors performed a periodic review of the "Safety System Unavailability" performance indicators for the following two systems:

- Residual heat removal system, and
- Emergency AC power system.

This review included information from both Unit 1 and Unit 2. Specifically, the inspectors reviewed this performance indicator (PI) from the second quarter of 2003 through the first quarter of 2004. Inspectors evaluated whether the performance indicator was calculated in accordance with the guidance contained in NEI 99-02, "Regulatory Assessment Performance Indicator Guideline." Documents reviewed included applicable monthly operating reports, licensee event reports, and operator logs.

#### b. Findings

No findings of significance were identified.

#### .2 "Reactor Coolant System Leakage" Performance Indicator

#### a. Inspection Scope

The inspectors performed a periodic review of the "Reactor Coolant System Leakage" PI for Units 1 and 2. Specifically, the inspectors reviewed this PI for the first quarter through the fourth quarter of 2003. This inspection was to assess the accuracy of the submitted information and if the PI was calculated in accordance with the methodology

established in Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Performance Indicator Guideline." The inspectors compared the submitted data with that recorded in operator logs for the period January 1, 2003, through December 31, 2003. The inspectors also discussed this PI with the cognizant engineer and licensing staff and reviewed the system engineer's data sheets.

b. Findings

No findings of significance were identified.

.3 "Reactor Coolant System Specific Activity" Performance Indicator

a. Inspection Scope

The inspectors performed a periodic review of the "Reactor Coolant System Specific Activity" PI for Units 1 and 2. Specifically, the inspectors reviewed this PI from the second quarter of 2003 through the first quarter of 2004. Inspectors evaluated whether the PI was calculated in accordance with the guidance contained in NEI 99-02, "Regulatory Assessment Performance Indicator Guideline." Chemistry logs were reviewed to verify the data in the PI.

b. Findings

No findings of significance were identified.

40A2 Problem Identification and Resolution

.1 Routine Reviews

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 reviewing hard copies of each condition report, and attending the daily Plant Issue Review Team meetings.

b. Findings

No findings of significance were identified.

.2 Semi-Annual Review of Plant Issues

a. Inspection Scope

As required by Inspection Procedure 71152, "Identification and Resolution of Problems," the inspectors performed a review of the licensee's corrective action program (CAP) and associated documents to identify trends that could indicate the existence of a more

significant safety issue. The inspectors initially performed a review of the licensee's corrective action program to identify trends that might indicate the existence of more significant safety issues as documented in NRC inspection report 05000280/2004002 and 05000281/2004002, dated April 19, 2004. This review was continued during this inspection report. The inspector's review was focused on repetitive equipment issues, but also considered the results of daily inspector CAP item screening discussed in section 4OA2.1 above, licensee trending efforts, and licensee human performance results. The inspector's review nominally considered the six month period of January 2004 through June 2004, although some examples expanded beyond those dates when the scope of the trend warranted. Inspectors also reviewed nine specific CAP items associated with component mis-positioning events that occurred during the period. The review also included issues documented outside the normal CAP in major equipment problem lists, repetitive and/or rework maintenance lists, departmental problem/challenges lists, system health reports, quality assurance audit/surveillance reports, self assessment reports, and maintenance rule assessments. The specific items reviewed are listed in the Documents Reviewed section attached to this report. The inspectors compared and contrasted their results with the results contained in the licensee's latest quarterly trend reports. Corrective actions associated with a sample of the issues identified in the licensee's trend report were reviewed for adequacy.

b. Findings

No findings of significance were identified.

4OA5 Other Activities

.1 Review of the Operation of an Independent Spent Fuel Storage Installation (60855)

a. Inspection Scope

Inspectors reviewed the normal operations of the Independent Spent Fuel Storage Installation (ISFSI). Inspectors verified through a review of selected records that the licensee has properly identified each fuel assembly placed in the two latest casks which have been placed on the ISFSI pad. Inspectors also verified that the fuel placed in these casks met the requirements of the technical specifications. Inspectors also walked down both ISFSI pads to assess the material condition of the casks, the installation of security equipment, and the performance of the monitoring systems. Inspectors verified that the required records are being retained for the ISFSI pad and duplicate records are being kept at a separate location.

b. Findings

No findings of significance were identified.

.2 INPO Peer Review

On May 13, 2004, the Senior Resident Inspector reviewed the Institute of Nuclear Power Operations/ World Association of Nuclear Operators (INPO / WANO) Peer Review of Surry Power Station report, dated March, 2003.

.3 (Closed) Temporary Instruction (TI) 2515/154, Spent Fuel Material Control and Accounting at Nuclear Power Plants

Temporary Instruction (TI) 2515/154, Spent Fuel Material and Accounting at Nuclear Power Plants, Phase I and Phase II, were completed during this inspection period. Appropriate documentation was provided to NRC management as required. This TI is considered closed. Documents reviewed for this TI are listed in the attachment.

.4 (Open) Temporary Instruction (TI) 2515/156, Offsite Power System Operational Readiness

a. Inspection Scope

The inspectors collected data from licensee maintenance records, event reports, corrective action documents and procedures and through interviews of station engineering, maintenance, and operations staff, as required by TI 2515/156. The data was gathered to assess operational readiness of the offsite power systems in accordance with NRC requirements such as Appendix A to 10 CFR Part 50, General Design Criteria (GDC) 17; Criterion XVI of Appendix B to 10 CFR 50.63; 10 CFR 50.65 (a)(4), and licensee procedures. Documents reviewed for this TI are listed in the attachment.

b. Findings

No findings of significance were identified. Based on the inspection, no immediate operability issues were identified. In accordance with TI 2515/156 reporting requirements, the inspectors provided the required data to the headquarters staff for further analysis. This TI remains open pending completion of that analysis.

40A6 Meetings, Including Exit

On July 12, 2004, the resident inspectors presented the inspection results to Mr. Blount and other members of his staff who acknowledge the findings.

The inspectors confirmed that proprietary information was not provided or examined during the inspection.

40A7 Licensee Identified Violations

The following findings of very low significance were identified by the licensee and are violations of NRC requirements which meet the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as Non-Cited Violations (NCV).

- Technical Specification (TS) section 6.4.A.7 requires that the licensee develop procedures for preventive or corrective maintenance operations on equipment which would have an effect on the safety of the reactor and TS section 6.4.D requires that these procedures be followed. On June 14, 2004, the licensee determined that a lug was not properly crimped onto the motor lead on the Unit 1



A high head charging pump and that the pump would not have been able to successfully start from April 12, 2004, until June 13, 2004. The improper installation of the lug on the power cable for this safety related motor is a failure to follow procedure GMP-15. This finding was of very low safety significance because the other two high head safety injection pumps remained operable during this period, and could have fulfilled the required safety functions. This issue is addressed in the licensee's corrective action program as Plant Issue S-2004-2242 and S-2004-2279.

If you deny these NCVs, you should provide a response with the basis for your denial, within 30 days of the date of this inspection report, 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 the Surry Power Station.

## SUPPLEMENTAL INFORMATION

### KEY POINTS OF CONTACT

#### Licensee

R. Allen, Manager, Outage and Planning  
R. Blount, Site Vice President  
M. Gaffney, Director, Nuclear Station Safety and Licensing  
B. Garber, Supervisor, Licensing  
T. Huber, Manager, Engineering  
L. Jones, Manager, Radiation Protection and Chemistry  
D. Llewellyn, Manager, Training  
R. MacManus, Manager, Nuclear Oversight  
K. Sloane, Director, Nuclear Station Operations and Maintenance  
B. Stanley, Manager, Maintenance  
J. Swintoniewski, Manager, Operations

### LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

#### Opened

None

#### Closed

2515/154                      TI      Spent Fuel Material Control and Accounting at Nuclear Power Plants (Section 4OA5.3)

#### Discussed

2515/156                      TI      Offsite Power System Operational Readiness (Section 4OA5.4)

### LIST OF DOCUMENTS REVIEWED

#### **Section 1R04**

##### Plant Procedures

2-OP-SI-001A, Safety Injection System Alignment  
OC-20, Admin Lock Log  
1-OP-EG-001, Number 1 Emergency Diesel Generator  
2-OP-EG-001, Number 2 Emergency Diesel Generator  
1-OP-EG-001A, EDG 1 System Alignment  
2-OP-EG-001B, EDG 2 System Alignment  
2-OP-FW-001A, Auxiliary Feedwater System Alignment

Plant Drawings

11448-FM-084B, Recirculation Spray System  
 11548-FM-088B, Chemical and Volume Control System  
 11548-FM-089A, Safety Injection System  
 11548-FM-089B, Safety Injection System  
 11548-FM-068A, Feedwater System

Plant Issues

S-2003-0992, 2-SI-P-1B Upper Motor Bearing in Alert Range  
 S-2003-3745, 2-SI-P-1B Intermittent Horizontal Vibrations Since 2000  
 S-2003-4473, 2-SI-P-1B Upper Motor Bearing Vibrations High  
 S-2003-4506, 2-SI-P-1B Declared Inoperable due to High Vibrations  
 S-2003-5373, 2-SI-P-1B Vibrations in Alert Following Installation of Additional Supports  
 S-2003-5571, 2-SI-P-1B Vibrations in Upper Motor Bearing in Alert Range  
 S-2003-5903, Proposal to Resolve 2-SI-P-1B Vibrations  
 S-2004-0061, 2-SI-P-1B Upper Motor Bearing Remains in Alert  
 S-2004-1687, 2-SI-P-1B Upper Motor Bearing Remains in Alert Following Maintenance

**Section 1R07**Procedures and Associated Results

0-LOG-AUX-001, Auxiliary Building Logs, Rev. 77 and selected lube oil cooler data for charging pumps 1 & 2A, B and C  
 0-LOG-SBIS-001, Service Building Inside Logs, Rev. 88 and selected data for Control Room chillers A, B, and C  
 0-MPM-0210-01, Control Room Chillers Performance Checks, Rev. 11 and selected performance data (approximate two year time frame) for chillers A, B, C, D, and E  
 1-OSP-SW-007, Service Water Flow Test of Recirculation Spray Heat Exchangers 1-RS-E-1A and 1-RS-E-1D, Rev. 2 and latest test data for HXs 1 and 2A, B, C, and D  
 1-OSP-SW-001, Maintenance and Sampling of RS HX Service Water Piping in Wet Lay-Up, Rev. 4 and data (approximately two year time frame) for HXs 1 and 2A, B, C, and D

Plant Issues

S-2003-0010, Swagelok Valve Stem Binding  
 S-2003-0144, Water in Oil for ESW Pump 1C  
 S-2003-3631, Sensing Line Disconnected from SW Pipe  
 S-2003-3923, Clogged SW to Chiller Y Strainer  
 S-2003-3928, Control Room Chiller Condenser Pressure Low  
 S-2003-4161, ESW Pumps Tripped due to High Engine Coolant Temperature  
 S-2003-4291, Clogged SW to Chiller Y Strainer  
 S-2003-4655, Degraded Wall between SW Valve Pits  
 S-2003-4761, ESW Pump Battery Modification did not Adequately Account for Cable Resistance  
 S-2003-5040, ESW Pump House Space Heater Design Problems  
 S-2003-5198, SW to Control Room Chiller Air Bound  
 S-2004-1196, Multiple SW Transmitter Problems  
 S-2004-1291, Charging Pump Lube Oil Temperature Low

S-2004-1510, Charging Pump Lube Oil Cooler Restricted

Miscellaneous

Service Water System Health Reports for 3<sup>rd</sup> quarter, 2003 and 1<sup>st</sup> quarter, 2004  
 VPAP-0811, Service Water System Inspection and Maintenance Program, Rev. 3  
 Letter 89-572G, Consolidated Response to Generic Letter 89-13; dated October 2, 1991  
 Self-Assessment ITC-SA-04-29, Dominion GL 89-13 Program; dated May 20, 2004

**Section 1R12**

Plant Issues

S-2004-2159, 1-SW-P-1C abnormally high wear products in an oil sample  
 S-2004-1424, 1-SW-P-1B oil pan drain plug weepage  
 S-2004-1867, 1-SW-P-1C failed compression checks  
 S-2004-1672, 1-SW-P-1B oil leakage  
 S-2004-1396, 1-SW-P-1B abnormally high wear products in an oil sample  
 S-2004-1367, 1-SW-P-1B broken radiator cap  
 S-2004-0865, 1-SW-P-1C failure of oil cannister seal  
 S-2004-0245, 1-SW-P-1B failed compression checks  
 S-2004-0048, Received Annunciator VSP-H-8, Black Battery Trouble Unit 2  
 S-2004-0717, Received Annunciator VSP-H-8, AMSAC Invertor on Alternate Source to Load  
 S-2004-0945, Corrosion build on 10 cell posts & 4 cells < 70 degrees and > 59 degrees F.  
 S-2004-0936, Alarm VSP-H-8 did not clear upon completion of equalizing charge  
 S-2004-1106, Received Annunciator VSP-H-8, No cause provided for cause of the alarm  
 S-2004-0047, TSC batteries and cell 69 had a voltage reading of 2.06 VDC  
 S-2004-0351, TSC pilot cell was found to have an Alert temperature reading  
 S-2004-1393, 10 cells for the TSC batteries were in Alert  
 S-2004-1546, Pilot cell 11 on TSC battery considered in Inoperable condition due to low voltage  
 S-2004-1590, TSC monthly battery check found 9 cells in Alert Range and 5 cells Inoperable  
 S-2004-1893, TSC monthly battery check found 9 cells in Alert and 9 cells Inoperable  
 S-2004-2058, While performing PMT, found 7 TSC battery cells in Alert and 7 Inoperable  
 S-2004-2178, While performing a TSC battery discharge test, cell 49 fell into the Alert range  
 S-2004-2112, Security diesel engine oil was found in 3 of 12 battery cells

**Section 1R12.2 (Biennial)**

MR - Corrective Action Program Documents

Audit 01-03: Maintenance Rule a(4) Program, February 2, 2002

Audit 02-11: Maintenance, January 15, 2003

Corrective Action Program Reports

S-2002-1254, CC header flow low

S-2002-2364, Failure of 2-CC-TV-209B

S-2001-3243, 1-IA-RV-127 Relief Valve evaluation

S-2002-2734, 1-SA-C-1 Trouble Alarm

S-2002-0751, 2-IA-C-4B will not carry Load  
 S-2002-3485, 3-EE-EG-1 Exceeded MR Criteria  
 S-2001-3513, 2-EE-EG-2 Exceeded MR Criteria  
 S-2001-3453, 2-EE-EG-1 Failed to Rotate  
 S-2002-0075, 0-AAC-DG-1 Breaker 04M1-2 Failed to Close  
 S-2003-1402, 0-AAC-B-1-39 Cell Voltage Low  
 S-2003-2375, 1-EP-UPS-1B-1, Implement Setpoint Change on Unit 1 Chargers

#### Administrative Procedures

VPAP-0815, Maintenance Rule Program, Rev. 14

#### Miscellaneous

ET S-02-0119, Rev. 0, Condition Assessment of Plant Structures (First Five Year Interval)  
 38-ENGSA-01-003, Assessment Report Maintenance Rule a(4) Peer Assessment - Surry  
 Power Station, dated 11/15/01  
 DCP 02-058, Dedicated Power Supply for RHR CC Trip Valves (completed)  
 DCP 03-062, RH Heat Exchanger CC Return Trip Valve Modification/Surry/Unit 1 & 2  
 (scheduled)  
 Operator Work Around List - April 6, 2004

#### **Section 40A5**

Procedure 0-OP-FH-062, "TN-32 Cask Loading and Handling"  
 Monthly Operating Report 04-03  
 Monthly Operating Report 04-04  
 Cask Loading Report for TN-32 Cask serial number 39  
 Cask Loading Report for TN-32 Cask serial number 40  
 ISFSI Technical Specifications  
 Dominion System Operations Procedures Manual  
 Procedure 1-DRP-006, Protective Relay Setpoints  
 ET CEE-99-0029, Rev. 0, Switchyard Requirements North Anna and Surry Power Stations, Unit  
 1 and 2  
 ET CEE 00-0018, Rev. 0, INPO SOER 99-01 Review: Recommendation #4, Review 500 KV  
 and 230 KV Switchyard Voltage Assumptions, Surry Power Station, Unit 1 and 2  
 ET CEE 01-0010, Rev. 1, Electrical Power Input for ITS Electrical Package Surry Power  
 Station, Unit 1 and 2  
 Response to SEN 242, Loss of Grid Event, August 14, 2003  
 S-2000-0083, SOER 99-1, Loss of Grid