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

July 30, 2007

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 - INTEGRATED INSPECTION REPORT 05000280/2007003 AND 05000281/2007003

Dear Mr. Christian:

On June 30, 2007, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Surry Power Station. The enclosed report documents the inspection results which were discussed on July 17, 2007, with Mr. Sloane and members of your staff.

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

Based on the results of this inspection, the NRC has identified two findings of very low safety significance (Green), which were determined to be violations of NRC requirements. However, because of the very low safety significance and because the issue was entered into your corrective action program, the NRC is treating this finding as a non-cited violation (NCV) consistent with Section VI.A of the NRC Enforcement Policy. If you contest any NCV in this report, 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, D.C. 20555-0001, with copies to the Regional Administrator, Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, D.C. 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 any response 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/

Eugene F. Guthrie, Chief
Reactor Projects Branch 5
Division of Reactor Projects

Docket Nos.: 50-280, 50-281
License Nos.: DPR-32, DPR-37

Enclosure: NRC Integrated Inspection Report 05000280/2007003 and 05000281/2007003
w/Attachment: Supplemental Information

cc w\encl: (See page 3)

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/

Eugene F. Guthrie, Chief
Reactor Projects Branch 5
Division of Reactor Projects

Docket Nos.: 50-280, 50-281
License Nos.: DPR-32, DPR-37

Enclosure: NRC Integrated Inspection Report 05000280/2007003 and 05000281/2007003
w/Attachment: Supplemental Information

cc w\encl: (See page 3)

X PUBLICLY AVAILABLE ☐ NON-PUBLICLY AVAILABLE ☐ SENSITIVE X NON-SENSITIVE

ADAMS: X Yes ACCESSION NUMBER:________________________

OFFICE	RII:DRP	RII:DRP	RII:DRP	RII:DRP	RII:DRP	RII:DRS	RII:DRS
SIGNATURE	/RA/	/RA by E-mail/	/RA/	/RA By Guthrie/	/RA by fax/	N/A	/RA/
NAME	JDodson	JReece	GMcCoy	ERiggs	DArnett	JKreh	LMiller
DATE	7/30/07	7/30/07	7/30/07	7/30/07	7/30/07	7/30/07	7/30/07
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO
OFFICE	RII:DRS	RII:DRS	RII:DRS	RII:DRS	RII:DRS		
SIGNATURE	/RA/	/RA/	/RA By Hopper/	/RA by Gurthrie/	/RA by Gurthrie/		
NAME	AIssa	WLewis	RChou	GGardner	DPenaranda		
DATE	7/30/07	7/30/07	7/30/07	7/30/07	7/30/07		
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

OFFICIAL RECORD COPY DOCUMENT NAME: C:\FileNet\ML072120265.wpd

cc w/encl:
Chris L. Funderburk, Director
Nuclear Licensing and
Operations Support
Virginia Electric & Power Company
Electronic Mail Distribution

Donald E. Jernigan
Site Vice President
Surry Power Station
Virginia Electric & Power Company
Electronic Mail Distribution

Virginia State Corporation Commission
Division of Energy Regulation
P. O. Box 1197
Richmond, VA 23209

Lillian M. Cuoco, Esq.
Senior Counsel
Dominion Resources Services, Inc.
Electronic Mail Distribution

Attorney General
Supreme Court Building
900 East Main Street
Richmond, VA 23219

<u>Distribution w/encl</u>:
S. P. Lingam, NRR
C. Evans (Part 72 Only)
L. Slack, RII EICS
OE Mail (email address if applicable)
RIDSNRRDIRS
PUBLIC

U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.:	50-280, 50-281
License Nos.:	DPR-32, DPR-37
Report No.:	05000280/2007003, 05000281/2007003,
Licensee:	Virginia Electric and Power Company (VEPCO)
Facility:	Surry Power Station, Units 1 & 2
Location:	5850 Hog Island Road Surry, VA 23883
Dates:	April 1, 2007 - June 30, 2007
Inspectors:	G. McCoy, Senior Resident Inspector J. Reece, Senior Resident Inspector E. Riggs, Acting Senior Resident Inspector D. Arnett, Resident Inspector R. Chou, Senior Reactor Inspector (Sections 1R02, 1R17) G. Gardner, Reactor Inspector (Sections 1R02, 1R17) A. Issa, Reactor Inspector (Sections 1R02, 1R17) W. Lewis, Reactor Inspector (Sections 1R02, 1R17) D. Mas-Penaranda, Reactor Inspector (Sections 1R02, 1R17) L. Miller, Senior Emergency Preparedness Inspector (Section 4OA2.3) J. Kreh, Emergency Preparedness Inspector (Section 4OA2.3)
Approved by:	E. Guthrie, Chief, Reactor Projects Branch 5 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000280/2007003, 05000281/2007003; 04/01/07 - 06/30/07; Surry Power Station Units 1 and 2; Other Activities and Permanent Plant Modifications.

The report covered a three-month period of inspection by resident inspectors and announced regional-based inspections conducted by five reactor inspectors and two emergency preparedness inspectors. Two Green findings, all of which were non-cited violations (NCVs), were identified. The significance of the finding is indicated by the 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 4, dated December 2006.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Initiating Events

Green. The inspectors identified a non-cited violation of 10 CFR 50.65 (a)(4), which requires that the licensee assess and manage the increase in risk that may result from the proposed maintenance activities. Specifically, in assessing the increase in risk of planned maintenance activities, the licensee failed to adequately assess planned risk. The licensee entered this issue in their corrective action program as CR-003611 for resolution.

The finding was considered to be more than minor because the licensee’s risk assessment had known errors or incorrect assumptions that had the potential to change the outcome of the assessment. The inspectors determined that the finding is of very low safety significance (Green) since the incremental core damage probability deficit was less than 1E-6. The inspectors determined that the cause of the finding was related to the proper work planning aspect of the human performance cross-cutting area. (Section 4OA5)

Cornerstone: Mitigating Systems

Green. The NRC identified a non-cited violation (NCV) for the failure to ensure the suitability of application of equipment essential to the safety-related functions of structures, systems, and components (SSCs) through their commercial dedication process as required by 10 CFR Part 50, Appendix B, Criterion III, Design Control. The licensee entered each of the two examples identified by the team into their corrective actions program as CR-013984, including an action to review their overall commercial dedication program.

The examples involve Agastat 7000 relays used in supporting the emergency diesel generator (EDG) start sequence and pressure control valves (PCVs) for use in the safety-related air supply supporting design operation of the power-operated relief valves (PORVs). In the first example, the licensee’s commercial grade dedication did not verify the adequacy of seismic qualification. In the second, the licensee utilized a non-conservative test pressure as part of their dedication to critical characteristics. Both

examples of the finding are more than minor because they are associated with the Design Control attribute affecting the Reactor Safety Mitigating Systems Cornerstone objective. The examples to the finding were evaluated using the SDP for Reactor Inspection Findings for At-Power Situations. The SDP Phase 1 analysis demonstrates the finding to be of very low safety significance (Green) as the licensee confirmed operability in accordance with plant procedures for both examples. The cause of the first example is related to the cross cutting aspect of human performance. (Section 1R17.2)

B. Licensee-Identified Violations

None

REPORT DETAILS

Summary of Plant Status

Unit 1 began the report period operating at 100 percent rated thermal power (RTP). On May 30, the unit was down-powered to 88.6 percent until June 1, due to a malfunctioning Turbine Stop Valve. The unit operated at or near full RTP for the remainder of the report period.

Unit 2 operated at or near full RTP for the entire reporting period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection

Hurricane Preparations

a. Inspection Scope

On June 11 and 27, 2007, inspectors conducted a tour of the owner-controlled area to evaluate the licensee's preparedness for high winds and hurricane conditions well in advance of the approach of any hurricanes. Specifically, the inspectors toured the following areas: Service and Auxiliary Building rooftop, the low level intake, the construction buildings, the sewage treatment plant, the area outside the warehouse, and the area surrounding the Gravel Neck gas turbines. The tour emphasized the identification of loose material, which could become airborne and potentially damage structures, systems, components (SSCs) or the switchyard. The inspectors also reviewed Operations Checklist OC-21 "Severe Weather Checklist", Abnormal Procedure (AP) 37.01 "Abnormal Environmental Conditions", and the Dominion Hurricane Response Plan (Nuclear).

b. Findings

No findings of significance were identified.

1R02 Evaluations of Changes, Tests or Experiments

a. Inspection Scope

The inspectors reviewed selected samples of evaluations to confirm that the licensee had appropriately considered the conditions under which changes to the facility, Updated Final Safety Analysis Report (UFSAR), or procedures may be made, and tests conducted, without prior NRC approval. The inspectors reviewed evaluations for six changes and additional information, such as calculations, supporting analyses, the UFSAR, and drawings to confirm that the licensee had appropriately concluded that the changes could be accomplished without obtaining a license amendment. The six evaluations reviewed are listed in the Attachment to this report.

The inspectors also reviewed samples of changes for which the licensee had determined that evaluations were not required, to confirm that the licensee's conclusions to screen out these changes were correct and consistent with 10CFR50.59. The 13 screen out changes reviewed are listed in the Attachment to this report.

The inspectors also reviewed one Condition Report (CR) to confirm that the problem was identified at an appropriate threshold, was entered into the corrective action program, and appropriate corrective actions had been initiated.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment

.1 Partial System Walkdown

a. Inspection Scope

The inspectors conducted partial equipment alignment walkdowns to evaluate the operability of selected redundant trains or backup systems while the other train or system was inoperable or out of service (OOS). The walkdowns included, as appropriate, reviews of plant procedures and other documents to determine correct system lineups, and verification of critical components to identify discrepancies which could affect operability of the redundant train or backup system. Additionally, the inspectors reviewed the corrective action system to verify that equipment alignment problems were being identified and properly resolved. Specific documents utilized for this inspection sample are listed in the Attachment to this report. The following three systems were included in this review:

- Unit 2 Auxiliary Feedwater system while the number 2, Emergency Diesel Generator (EDG) was OOS for maintenance
- Number 1 and 3 EDGs while number 2 EDG was OOS for maintenance and testing
- Unit 1, A and B Emergency Service Water Pumps, 1-SW-P-1A/B, while 1-SW-P-1C was OOS for 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 containment spray system. The walkdown emphasized piping routing, pump and piping overall conditions, proper bolting, plant issues associated with system deficiencies, valve

and breaker position verifications, and component labeling. The inspectors reviewed the following operating procedures (OPs) and drawings: 0-OP-CS-001/2/3/4/5, FM-84A, DCP 94-059, RC and CS MOV Modification and UFSAR Section 6.3.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

Fire Area Walkdowns

a. Inspection Scope

The inspectors conducted inspections in twelve areas of the plant to verify that combustibles and ignition sources were properly controlled, and that fire detection and suppression capabilities were intact. The inspectors selected the areas based on a review of the licensee's safe shutdown analysis and probabilistic risk assessment based sensitivity studies for fire-related core damage sequences. Specific documents utilized for this inspection sample are listed in the Attachment to this report. Inspections of the following areas were conducted during this inspection period:

- EDG room #2 (1)
- Battery room 1A (1)
- Battery room 1B (1)
- Battery room 2A (1)
- Battery room 2B (1)
- Unit 1 and 2 Control Room (1)
- Unit 1 Emergency Switchgear room (1)
- Unit 2 Emergency Switchgear room (1)
- Auxiliary Building - 2 foot level (1)
- Auxiliary Building - 13 foot level (1)
- Auxiliary Building - 27 foot level (1)
- Auxiliary Building - 45 foot level (1)

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program

a. Inspection Scope

The inspectors observed licensed operator simulator training on June 27, 2007, to verify that operator performance was adequate, evaluators were identifying and documenting crew performance problems, and training was being conducted in accordance with licensee procedures. The scenario involved manually tripping the reactor and initiating safety injection following the development of excessive reactor coolant system leakage

with a loss of all makeup capability and a faulted steam generator (SG). As the scenario progressed, multiple tubes in the faulted SG ruptured, resulting in a radiological release. The inspectors observed crew performance in terms of: communications; ability to take timely and proper actions; prioritizing, interpreting, and verifying alarms; correct use and implementation of procedures, including alarm response procedures; and timely control board operation and manipulation, including high-risk operator actions. Additionally, the inspectors observed the oversight and direction, provided by the shift supervisor, including the ability to identify and implement appropriate technical specification (TS) actions.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

For the two 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 walkdowns 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.

- Condition Report (CR) 007238, Multiple indications of valve plug to valve stem separation in steam dump valve 1-MS-TCV-105B
- CR 012712, Unit 1 and 2 turbine stop valves and associated limit switches

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:

- Plan of the Day (POD) for the week of 4/2 - 6, including the removal of smoke detectors, emergent work on “D” control room chiller breaker 1-VS-E-4D, and a RECO involving “B” Residual Heat Removal pump,1-RH-P-1B
- POD for the week of 4/9 - 13, including the addition of OC-21 “Severe Weather Checklist”, due to a tornado warning, verified that the proper IPT term was being used for the rods being placed in manual, and shifting of safety related maintenance
- POD for the week of 4/30 - 5/4, including shifting 2-OPT-CS-002, adding 2-OPT-CH-001, and the possible inclusion of any system affected by the bolting hardness issue
- POD for the week of 5/21 - 25, including emergent work for the failure of Unit 1 main steam flow channel, 1-MS-FI-1495 and the shifting of safety related surveillances
- POD for the week of 5/28 - 6/1, including the decrease in RTP of Unit 1 for Turbine Valve Freedom testing, maintenance on 1-MS-TV-3 and increase in RTP of Unit 1
- POD for the week of 6/17 -23, including emergent repair of 2-BC-E-1C endbell leak, as well as disassembly and drying of A and B main feedwater pump recirculation valve limit switches and clearing the resulting grounds on DC busses

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors evaluated the technical adequacy of the four 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 transmittals and plant issues listed below:

- CR009891, Unit 1 Residual Heat Removal Pumps
- CR011234, Unit 2 Containment Spray Piping
- CR012712, Unit 1, Number 3 Turbine Stop Valve
- CR014703, Number 2 EDG high silver content

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications

.1 Annual Review

a. Inspections Scope

The inspectors reviewed one Design Change Package (DCP) related to a safety significant system to verify that the associated systems' design bases, licensing bases, and performance capability would be maintained following the modifications; and that the modifications would not render or place the plant in an unsafe condition. The associated 10 CFR 50.59 screenings/evaluations were also reviewed for technical accuracy and to verify license amendments were not required. The DCP contained the technical basis for the modification, the post maintenance test (PMT) requirements to return the pump to service, revised drawings, and other engineering documents. The inspectors reviewed:

DCP 04-036, Change Nuttall Gear to IMO Pump Coupling on 2B Charging Pump.

b. Findings

No findings of significance were identified.

.2 Biennial Review

a. Inspection Scope

The inspectors evaluated nine engineering Design Change Packages (DCPs), for adverse effects on system availability, reliability, and functional capability. The nine modifications and the associated attributes reviewed are as follows:

DCP-06-031, 1-CH-MOV-1381 Defeat Torque Closure, Rev. 0 (Barrier Integrity)
- Control Signals
- Failure Modes

DCP-06-047, Defeat Auto-Open Function for Auxiliary Feedwater Flow Isolation Motor Operated Valves, Rev. 0 (Mitigating Systems)
- Equipment Protection
- Operations
- Flowpaths
- Control Signals

PTE 9002974, Circle Seal Controls PCV Commercial Dedication Inspection Plan, Ver. 0 (Mitigating Systems)
- Materials/Replacement Components
- Pressure Boundary
- Failure Modes

DCP-06-046, Emergency Diesel Generator Timing Relay Replacement, Surry Units 1 & 2, Rev. 0 (Mitigating Systems)
- Materials/Replacement Components
- Timing
- Licensing Basis

DCP-5-020, Alternate Power Supply for Appendix R Remote Monitoring Panels, Surry Units 1 & 2, 2/23/06 (Mitigating Systems)
- Energy Needs
- Materials/Replacement Components
- Control Signals
- Operations

DCP-05-052, Installation of Replacement Annubars for 38-01-SW-FE-121A, B, & C (Mitigating Systems)
- Control Signals
- Licensing Basis
- Flowpaths
- Structural
- Material/Replacement Components

DCP-06-019, Pressurizer Pressure Controller Modification (Mitigating Systems)
- Control Signals
- Licensing Basis
- Operations
- Energy Needs

DCP-06-052, Modify Circuit Breaker Logic for Loading AAC Diesel onto the Emergency Buses (Mitigating Systems)
- Control Signals
- Licensing Basis
- Operations
- Energy Needs

DCP-05-060, Replace Stainless Steel Service Water Piping, Rev. 0 (Mitigating Systems)
- Materials/Replacement Components
- Pressure Boundary

Documents reviewed included procedures, engineering calculations, modification design and implementation packages, work orders, drawings, corrective action documents, applicable sections of the current UFSAR, supporting analyses, Technical Specification (TS), and design basis information. The inspectors additionally reviewed test documentation to ensure adequacy in scope and conclusion. The inspectors verified that as-built notice details were incorporated in licensing and design basis documents and associated plant procedures.

The inspectors also reviewed selected CRs, Deviation Reports (DRs), and one Audit Report associated with modifications to confirm that problems were identified at an

appropriate threshold, were entered into the corrective action process, and appropriate corrective actions had been initiated and tracked to completion.

b. Findings

Introduction: The NRC identified a non-cited violation (NCV) of very low safety significance (Green) involving commercial grade dedication with two examples. The examples involved Agastat 7000 relays used in supporting the emergency diesel generator (EDG) start sequence and pressure control valves (PCVs) for use in the safety-related air supply supporting design operation of the power-operated relief valves (PORVs). In the first example, the licensee's commercial grade dedication did not verify the adequacy of seismic qualification. In the second, the licensee utilized a non-conservative test pressure as part of their dedication to critical characteristics.

Description: Regarding the Agastat 7000 relay example, the licensee issued commercial grade dedication PTE 9002287 pending Design Change Package (DCP) and seismic qualification approval. The approved seismic qualification justification in DCP-06-046 did not qualify the dedicated commercial grade Agastat 7000 relays, but used the justification for the Safety Related (SR) E7000 series relays. This oversight was not dispositioned through DCP closeout and review. The affected relays had not been installed in the plant, but were available for use.

Regarding the PCV example, the licensee routinely performs commercial grade dedication of new or rebuilt PCVs for use in regulating the 2200 psi safety-related air supply (from storage flasks) to the nominal 85 psi application pressure for the PORVs in the absence of the normal non-safety instrument air supply as described in TS 3.1.A.6.C. Commercial grade dedication plan PTE 9002974 specifies a test pressure of only 1500 pounds per square inch (PSI) minimum for satisfying pressure boundary, pressure regulation and air-flow-shutoff requirements necessary in support of the design basis. The licensee used an existing maintenance procedure as the basis for the pressure selection, vice the original equipment manufacturer (OEM) testing or system operating requirements. The licensee performed an operability determination for valves currently installed in the system with the reactor coolant system operating at temperatures above 350° F and pressures above 2000 psi, and determined that the valves were operable based upon OEM-performed commercial-grade testing.

Analysis: In the first example, the inspectors found that the licensee's failure to adequately perform the commercial grade dedication of the Agastat 7000 series relays for applications that provide safety-related timing control during EDG start was more than minor in that it was associated with the Design Control attribute affecting the Reactor Safety Mitigating Systems Cornerstone objective. The finding was found to be of very low safety significance (Green) because the dedicated relays were available for use but were not placed into service. In the second example, the licensee's failure to adequately perform the commercial grade dedication of the PCVs for applications that provide the safety-related air supply to the PORVs was more than minor in that it is associated with the Design Control attribute affecting the Reactor Safety Mitigating Systems Cornerstone objective. The finding was found to be of very low safety

significance (Green) based upon confirmation of operability by the licensee as described above.

In addition, the inspectors identified a cross-cutting aspect of this finding, associated with the first example, in the area of human performance - decision making - as illustrated in NRC Inspection Manual Chapter 0305, Section 06.07.c, Substantive Cross-Cutting Issues, Components Within the Cross-Cutting Areas H.1(a). The licensee did not make safety significant or risk significant decisions using a systematic process causing the seismic qualification justification to be missed.

Enforcement: 10 CFR 50 Appendix B Criterion III, Design Control, requires in part that measures shall be established for the selection and review for suitability of application of materials, parts, equipment, and processes that are essential to the safety-related functions of the structures, systems, and components (SSCs). Contrary to this requirement, in the first example, the licensee failed to establish that the dedicated relays are suitable for the application by not performing an adequate seismic qualification; and in the second example, the licensee failed to establish test criteria which demonstrated that the dedicated PCVs were appropriate for system pressure requirements. Because this finding is of very low safety significance and was entered into the licensee's corrective action program (CRs 013815, 013846, and 013984), it is considered an NCV consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000280, 281/2007003-01, Failure to Ensure the Suitability of Application of Equipment Essential to Safety-Related Functions.

1R19 Post Maintenance Testing

a. Inspection Scope

The inspectors reviewed PMT procedures and/or test activities, as appropriate, for selected risk significant systems to assess whether: (1) plant testing had been adequately addressed by control room and/or engineering personnel; (2) testing was adequate for the maintenance performed; (3) acceptance criteria were clear and adequately demonstrated operational readiness consistent with design and licensing basis documents; (4) test instrumentation had current calibrations, range, and accuracy consistent with the application; (5) tests were performed as written with applicable prerequisites satisfied; (6) jumpers installed or leads lifted were properly controlled; (7) test equipment was removed following testing; and (8) equipment was returned to the status required to perform its safety function. The inspectors observed testing and/or reviewed the results of the following six tests listed below:

- 0-OPT-SW-003, Emergency Service Water Pump (ESW), 1-SW-P-1C
- 2-OPT-CH-001, Charging Pump Operability and Performance Test for 2-CH-P-1A
- 0-OPT-SW-001, ESW Pump, 1-SW-P-1A
- 2-OPT-CH-002, Charging Pump Operability and Performance Test for 2-CH-P-1B
- 0-OPT-EG-001, Number 3 EDG Monthly Start Exercise Test
- 1-OSP-TM-001, Unit 1 Turbine Inlet Valve Freedom Test

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors witnessed surveillance tests and/or reviewed test data of the seven risk-significant SSCs listed below, to assess, as appropriate, whether the SSCs met TS, the Updated Final Safety Analysis Report (UFSAR), and licensee procedural requirements. The inspectors also determined if the testing effectively demonstrated that the SSCs were ready and capable of performing their intended safety functions.

Surveillance Tests

- 1-OPT-EG-001, Number 1 EDG Monthly Start Exercise
- 1-IPT-FT-RP-SI-001A (B), Train A (B) Safeguards Actuation Logic Functional Test
- 2-IPT-FT-RC-444/445, Pressurizer Pressure Control Loop Test
- 1-OSP-TM-001, Unit 1 Turbine Inlet Valve Freedom Test
- 2-OSP-TM-001, Unit 2 Turbine Inlet Valve Freedom Test

Inservice Tests

- 1-OPT-CH-002, Charging Pump Operability and Performance Test for 1-CH-P-1B

Reactor Coolant System (RCS) leakage detection surveillances

- 2-OPT-RC-10.0, Reactor Coolant Leakage, Computer Calculated

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed documents and observed portions of the S2–07-052 and 2-RC-P-1C Frame Alert set-point modification. Among the documents reviewed were system design bases, the UFSAR, TS, system operability/availability evaluations, and the 10 CFR 50.59 screening. The inspectors observed, as appropriate, that the installation was consistent with the modification documents, was in accordance with the configuration control process, adequate procedures and changes were made, and post installation testing was adequate.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation

a. Inspection Scope

The inspectors observed the announced emergency response training drill conducted on May 23, 2007, to assess the licensee's performance in emergency classification, off-site notification and protective action recommendations. The drill included emergency response actions taken by the management team in the Technical Support Center. This drill evaluation is included in the Emergency Response Performance Indicator statistics.

a. Findings

No findings of significance were identified.

4 OTHER ACTIVITIES

4OA1 Performance Indicator Verification

Initiating Events Cornerstone

.1 Unplanned Scrams per 7000 Critical Hours Performance Indicator

a. Inspection Scope

The inspectors performed a periodic review of the "Unplanned Scrams per 7000 Critical Hours" performance indicator for Units 1 and 2. Specifically, the inspectors reviewed this performance indicator from the third quarter of 2006 through the first quarter of 2007. 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 Scrams with Loss of Normal Heat Removal Performance Indicator

a. Inspection Scope

The inspectors performed a periodic review of the "Scrams with Loss of Normal Heat Removal" performance indicator for Units 1 and 2. Specifically, the inspectors reviewed

this performance indicator from the third quarter of 2006 through the first quarter of 2007. 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

Inspectors found that the licensee had not counted the Unit 2 reactor trip on October 7, 2006, as a Scram with Loss of Normal Heat Sink. The licensee submitted the corrected PI and documented the revision in CR 16147.

.3 Unplanned Power Changes per 7000 Critical Hours Performance Indicator

a. Inspection Scope

The inspectors performed a periodic review of the "Unplanned Power Changes per 7000 Critical Hours" performance indicator for Units 1 and 2. Specifically, the inspectors reviewed this performance indicator from the second quarter of 2006 through the first quarter of 2007. 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.

4OA2 Identification and Resolution of Problems

.1 Daily Review of Plant Issues

a. Inspection Scope

As required by Inspection Procedure (IP) 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 daily screening of items entered into the licensee's corrective action program (CAP). This review was accomplished by reviewing copies of CRs, attending daily screening meetings, and accessing the licensee's computerized database.

b. Findings

No findings of significance were identified.

.2 Semi-Annual Review of Plant Issues

a. Inspection Scope

As required by Inspection Procedure 71152, 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 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 2007, through June 2007, although some examples expanded beyond those dates when the scope of the trend warranted. The review included the following areas/documents:

- 2007 first quarter trend report and graphs
- NRC performance indicators
- Station indicators
- 2007 first quarter system heath reports
- Station reliability issues list
- Corrective action program status reports
- Work management/normal process list
- Maintenance rule program reports

b. Findings

No findings of significance were identified.

.3 Focused Review

a. Inspection Scope

The inspectors performed an in-depth review of Emergency Preparedness (EP) related CRs for the October 7, 2006, loss of offsite power event. The inspectors reviewed the actions taken to determine if the licensee had adequately addressed the following attributes:

- Complete, accurate and timely identification of the problem
- Evaluation and disposition of operability and reportability issues
- Consideration of previous failures, extent of condition, generic or common cause implications
- Prioritization and resolution of the issue commensurate with safety significance
- Identification of the root cause and contributing causes of the problem
- Identification and implementation of corrective actions commensurate with the safety significance of the issue.

The following EP related CRs and corrective actions for the October 7, 2006, loss of offsite power event were reviewed:

- CR 002191, Emergency Classification Opportunity
- CR 002562, Performance Indicator Evaluation
- CR 003087, Final Evaluation of Performance Indicator Opportunity on missed NOUE 10/07/2006
- CR 002193, TSC response adversely affected by loss of power
- CR 002300, VPAP2802 reportability review for CR002193 (loss of power to the TSC) relate to equipment problems associated with the loss of offsite power event of October 7, 2006.

b. Findings and Observations

No findings of significance were identified.

4OA5 Other Activities

(Closed) Unresolved Item (URI) 5000280,281/2006011-01, Evaluation of Risk Analysis for Unit 1 For Cross-under Relief Valve Events

a. Inspection Scope

The inspectors completed the review and risk determination of URI 05000280, 281/2006011-01. The inspectors reviewed the licensee's risk procedures and program requirements, correspondence between licensee site personnel and Dominion corporate personnel, and interviewed licensing personnel to evaluate the adequacy of the risk assessments relative to the requirements of 10 CFR 50.65 (a)(4), "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants."

b. Findings

Introduction: A Green, non-cited violation (NCV) was identified by the NRC regarding a failure to adequately assess the increase in risk due to an emergent condition consisting of the cross-under relief valve (CURV) configuration which resulted in a partial loss of offsite power on Units 1 and 2.

Description: On October 7, 2006, Unit 2 was manually tripped during a transient based on indications associated with main steam flow, main steam pressure, and steam generator feedwater flow and level perturbations. During the transient, exhaust steam discharging from the Unit 2 CURVs impacted the adjacent turbine building siding and created flying debris. The flying debris impacted the 'A' and 'C' Reserve Service Station Transformers' electrical conductors resulting in a loss of normal offsite power to both Unit 1 and one of the Unit 2 emergency buses. Additional details associated with this event are contained in Inspection Report 05000280/2006011 and 05000281/2006011.

Upon arrival at the site on October 23, 2006, approximately two weeks after the event, the inspectors requested a risk assessment of this event and the existing configuration of the Unit 1 cross-under relief valves on the south side of the turbine building. The current plant configuration could result in removal and ejection of turbine building siding

on discharge of the relief valves similar to that which occurred on Unit 2 on October 7, 2006. The licensee informed the inspectors that they did not have the risk calculations available, initiated action to perform the risk evaluation, and subsequently incorporated the results into the risk matrix for Unit 1 maintenance rule evaluations.

The inspectors obtained additional correspondence information from the licensee which demonstrated that the licensee had indeed received a risk evaluation with recommended compensatory actions completed by a Dominion corporate risk analyst on October 11, 2006. However, the licensee failed to integrate this risk assessment, which included a new baseline core damage frequency and compensatory actions, into the site risk program. Following the inspector's request to review a risk assessment on October 23, 2006, the licensee obtained a second risk assessment from another corporate risk analyst on October 25, 2006, and appropriately it was included within the site's overall risk program.

Analysis: The inspectors determined that the licensee's failure to integrate a risk assessment into the site's on-line risk program constituted a failure to perform an adequate risk assessment, which was a performance deficiency. The inspectors utilized MC 0612, Appendix B Section 3, to assess if the finding was more than minor. The finding was considered to be more than minor because the licensee's risk assessment had known errors or incorrect assumptions that had the potential to change the outcome of the assessment. Utilizing MC 0609, Appendix K, Maintenance Risk Assessment and Risk Management Significance Determination Process, the inspectors determined that the incremental core damage probability deficit for the affected time period was less than 1.0E-6. As such, the finding is of very low safety significance (Green). The inspectors determined that the cause of the finding was related to the proper work planning aspect of the human performance cross-cutting area.

Enforcement: 10 CFR 50.65(a)(4) "Requirements for monitoring the Effectiveness of Maintenance at Nuclear Power Plants" requires, in part, that before performing maintenance activities the licensee shall assess and manage the increase in risk that may result from the proposed maintenance activities. Contrary to the above, during the time period from October 8 through 24, 2006, the licensee failed to perform an adequate risk assessment due to the failure to integrate a Dominion corporate risk assessment into the site's risk program. Because the finding was determined to be of very low safety significance and has been entered into the licensee's corrective action program as Condition Report 003611, this violation is being treated as a NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy: NCV 05000280,281/2007003-02, Failure to Perform an adequate Risk Assessment for Unit 2 Cross-Under Relief Valve Event.

4OA6 Management Meetings (Including Exit Meeting)

Exit Meeting Summary

On July 17, 2007, the resident inspectors presented the inspection results to Mr. Sloane and other members of his staff who acknowledge the findings.

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

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

M. Adams, Director, Nuclear Station Safety and Licensing
K. Grover, Manager, Operations
B. Garber, Supervisor, Licensing
J. Grau, Manager, Nuclear Oversight
E. Hendrixson, Director, Site Engineering
D. Jernigan, Site Vice President
L. Jones, Manager, Radiation Protection and Chemistry
C. Luffman, Manager, Protection Services
R. Simmons, Manager, Outage and Planning
K. Sloane, Director, Nuclear Station Operations and Maintenance
B. Stanley, Manager, Maintenance
M. Wilson, Manager, Training

NRC

E. Guthrie, Chief, Branch 5, Division of Reactor Projects, Region II

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Opened and Closed

05000280,281/2007003-01	NCV	Failure to Ensure the Suitability of Application of Equipment Essential to Safety-Related Functions (Section 1R17.2)
05000280,281/2007003-02	NCV	Failure to Perform an adequte Risk Assessment for Unit 2 Cross-Under Relief Valve Event (Section 4OA5)

Closed

05000280,281/2006011-01	URI	Evaluation of Risk Analysis for Unit 1 for Cross Under Relief Valve Events (Section 40A5)

LIST OF DOCUMENTS REVIEWED

Section 1R02: Evaluation of Changes, Tests, or Experiments

Evaluations
DCP-05-031, NRC GSI-191 Containment Sump Strainer Design, Rev. 0 (Regulatory Evaluation, RE, 06-011)
ET-NAF-06-0002, Appendix K Small Break and Large Break LOCA, Implementation of IFBA, Quantification and 10CFR50.46 Assessment for PCT Impact, Rev. 0 (RE-06-001)
DCP-06-047, Defeat Auto-Open Function for Auxiliary Feedwater Flow Isolation Motor Operated Valves, Rev. 0 (REs-06-006 and 06-009)
RE-06-007, Completing of 1H Bus Logic Testing
Commitment, Remove Restriction Committed to GL 91-11
RE-07-001, Evaluation of Charging Pump Discharge Check Valve Back Leakage

Screen Out Changes
DCP-06-031, 1-CH-MOV-1381 Defeat Torque Closure, Rev. 0
DCP-5-020, Alternate Power Supply for Appendix R Remote Monitoring Panels, Surry Units 1 & 2, 2/23/06
DCP-05-052, Installation of Replacement Annubars for 38-01-SW-FE-121A, B, & C
DCP-06-019, Pressurizer Pressure Controller Modification
DCP-06-052, Modify Circuit Breaker Logic for Loading AAC Diesel onto the Emergency Buses
FS-206-009, Emergency Bus Power to Engineered Safeguard Equipment, TSCR 349
0-AP-12.01, Loss of Intake Canal Level (various revisions)
IEER 000 SEL00909 – 000, ESI Relay Model MKN51103 – 01 for EMD Relay Part Number 8263337
DCP-06-046, Emergency Diesel Generator Timing Relay Replacement, Surry Units 1 & 2
DCP-05-060, Replace Stainless Steel Service Water Piping, Rev. 0
SEL-00945-000, Circuit Breaker, Molded Case - Cutler Hammer Model HFB2030 to HFBDC303L, 9/26/06
FS-2006-022, Change Request UFSAR Section 4.3.4.2 Air Supply, R38V1 9/28/06
Procedure Action Request (PAR) 0-DRP-049, Rev. 0, Time Critical Operator Actions, 9/29/05

FSAR Changes
FS-2006-022, Change Request USFAR Section 4.3.4.2 Air Supply, R38V1 9/28/06
FS-206-009, Emergency Bus Power to Engineered Safeguard Equipment, TSCR 349

Procedures
VPAP-3001, Safety and Regulatory Reviews, Rev. 14
DNAP-3004, Dominion Program for 10 CFR 50.59 and 10 CFR 72.48 - Changes, Tests, and Experiments, Rev. 1
Procedure Action Request (PAR) 0-DRP-049, Time Critical Operator Actions, Rev. 0, 9/29/05
VPAP-0708, Item Equivalency Evaluation, Rev. 10
SU-STD-000-STD-GN-0038, Seismic Qualification of Equipment, Rev. 007, 5/13/06
LFFG1 and LFFG2, Large Flood and Fire Guidelines, Portions Pertaining to DCP-05-020, Database Reviewed on 6/14/07

1-OPT-ZZ-001, ESF Actuation with Undervoltage and Degraded Voltage - 1H Bus, Rev. 21

Drawings
SU-DWG-000-11448-FE-1G, 125 VDC One Line Diagram, Rev. 35, 4/24/06
SU-DWG-000-11448-FE-10A, Wiring Diagram 125 VDC, Rev. 27, 12/29/05
SU-DWG-000-11454-FE-1G, 125 VDC One Line Diagram, Rev. 32, 2/12/07
S-06052-0-2FE21Q, D.C. Elementary Diagram 4160V Bus 2H BKR 25H3 and 25H8 Surry Unit 2, Rev. 0
11548-FE-21Q, S-06052-0-2FE21Q, D.C. Elementary Diagram 4160V Bus 2H BKR 25H3 and 25H8 Surry Unit 2, Rev. 12
S-06052-0-1FE21J, D.C. Elementary Diagram 4160V Circuits Surry Unit 1, Rev. 0
11448-ESK-6BN, Elementary Diagram 480V Circuit Motor Operated Valve 01-CW-MOV-106A & B, Rev. 16
11448-ESK-6BN, Elementary Diagram 480V Circuit Motor Operated Valve 01-CW-MOV-106C & D, Rev. 17
11448-ESK-6BN1, Elementary Diagram 480V Circuit Motor Operated Valve 01-SW-MOV-101A & B, Rev. 14
11448-ESK-6BP, Elementary Diagram 480V Circuit Motor Operated Valve 01-CW-MOV-100A & B, Rev. 16
11448-ESK-6BP, Elementary Diagram 480V Circuit Motor Operated Valve 01-CW-MOV-100C & D, Rev. 17
11448-ESK-6CD4, Elementary Diagram CNTMT Isolation Trip Valves, Rev. 17
11448-FE-1D, 4160V One Line Diagram Unit 1, Rev. 17
11448-ESK-5Q, Elementary Diagram 4160V Charging Pumps Sheet 2 , Rev. 27
11448-ESK-5U, Elementary Diagram 4160V Charging Pumps Sheet 4 , Rev. 16
11448-FE-1A2, Electrical Power Distribution One Line Integrated Schematic Unit 1, Rev. 17

Calculations
SM-1451, Risk Informed Allowed Outage Time for Train H and J Inverters at Surry Power Station Units 1 and 2, Rev. 0
0139-2410-UR(B)-115, Transit Time of Radioactive Release form a Fuel Handling Accident in the Fuel Building to the Control Room Normal Intake, Rev. 0, Addendum 00A, 3/30/06

Other Documents
Letter Serial 06-312, Virginia Electric and Power Company North Anna and Surry Power Stations 30-Day Report of Emergency Core Cooling System (ECCS) Model Changes Pursuant to the Requirements of 10CFR50.46, 04/20/2006
DCP-03-057, Allow More Design Margin for Various Motor Operated Valves, Rev. 0
ET-NAF-06-0050, Transmittal of Technical Report NE-1050, Rev 0, Addendum 1, 5/17/06
Technical Report NE-1050, Reanalysis of Pressurizer PORV Air Bottles Minimum Pressure Limit, Rev 0, Addendum 1, May 2006
USFAR Sections 7.7.2, 7.11.2, 8.4.3, 9.10.35, Database Reviewed on 6/14/07
Technical Requirements Manual, Sections 3.3.2 and 3.7.9, Database Reviewed on 6/14/07
SDBS-SPS-NI Surry Design Basis Document- Nuclear Instrumentation System, Database Reviewed on 6/14/07

SDBS-SPS-EV, Surry Design Basis Document- Emergency Power and Vital Bus (120-240V) System, Database Reviewed on 6/14/07
CO-AGREE-000IA1-1, Nuclear Switchyard Interface Agreement Switchyard Control, 01/23/07

CO-AGREE-000IA1-3, Nuclear Switchyard Interface Agreement Maintenance Protocol, 02/14/07
ET-CME-07-0012, Evaluation of Charging Pump Discharge Check Valve Back Leakage

Condition Report (CR)
CR 001351, Deficiency in DNAP-3004, Rev. 0 Related to 50.59/72.48 Screen Form Screening Out the Review Process Early

Section 1R04: Equipment Alignment

CR007502, 2-MS-PCV-202A and/or 202B leaking by
CR001972, 1-MS-PCV-102A and/or 102B leaking by
Procedure 2-OP-FW-001A, Auxiliary Feedwater System Valve Alignment
Drawing 11548-FM-0068A, sheets 1, 3, and 4
Vendor Technical Manual 38-T291-00001, Terry Turbine

Section 1R05: Fire Protection

Surry Power Station, Appendix R Report
VPAP-2401, Fire Protection Program
1-FS-FP-109, Battery room 1A Elevation 9 feet 6 inches
1-FS-FP-110, Battery room 1B Elevation 9 feet 6 inches
2-FS-FP-109, Battery room 2A Elevation 9 feet 6 inches
2-FS-FP-110, Battery room 2B Elevation 9 feet 6 inches
0-FS-FP-122, Diesel Generator Room number 2, Elevation 27 feet - 6 inches
0-FS-FP-154, Evaporator Area - Unit 2 Auxiliary Building Elevation 2 Feet
0-FS-FP-156, Component Cooling Pump Area Auxiliary Building Elevation 2 Feet
1-FS-FP-159, Auxiliary Building - General Area Unit 1 Elevation 13 Feet
2-FS-FP-159, Auxiliary Building - General Area Unit 2 Elevation 13 Feet
0-FS-FP-161, Auxiliary Building Elevation 27 Feet - 6 Inches
0-FS-FP-162, Auxiliary Building Elevation 45 Feet - 10 Inches
1-FS-FP-107, Unit 1 Emergency Switchgear Room Elevation 9 Feet - 6 inches
2-FS-FP-107, Unit 2 Emergency Switchgear Room Elevation 9 Feet - 6 inches

Section 1R12: Maintenance Effectiveness

Condition Reports
CR007238, 1-MS-TCV-105B has multiple indications of valve plug to valve stem separation
CR007115, 1-MS-TCV-105B inoperable
CR006145, Limit switches for 1-MS-TCV-105B does not make contact with the valve stem.
CR001668, Continuous air from positioner bleed port on steam dump valve 1-MS-TCV-106A

Other Documents
MRE 00379, 1-MS-TCV-105B inoperable
ODM 000008, 1-MS-TCV-105B has multiple indications of valve plug to valve stem separation.
WO 00768537-04, Inject valve to prevent inadvertent valve opening
System Health Report for Main Steam System, First Quarter 2007.

Section 1R17: Permanent Plant Modifications

Procedures
VPAP-0301, Design Change Process, Rev. 26
1-OP-FW-001, Motor Driven AFW Pumps Startup and Shutdown, Rev. 11-OTO1
2-OP-FW-001, Motor Driven AFW Pumps Startup and Shutdown, Rev. 9-OTO1
LFFG1 and LFFG2, Large Flood and Fire Guidelines, Portions Pertaining to DCP-05-020, Database Reviewed on 6/14/07
0-ECM-1803-01, Agastat Time Delay Relay Replacement And Testing, Rev.14

Calculations
ME-0211, Operator Capability Calculation for Re-configured 1-CH-MOV-1381, Rev. 3
ME-0805, Maximum MD AFW Pump Flow and NPSHr Analysis for One MD AFW Pump Delivering Flow to Two Low Pressure Steam Generators, Rev. 0
ME-0807, Maximum AFW Pump Flow and NPSHr Analysis for One AFW Pump Delivering Flow to Three Low Pressure Steam Generators, Rev. 0
ME-0813, Maximum AFW Pump Flow and NPSHr Analysis for One AFW Pump Delivering Flow to Two Low Pressure Steam Generators, Rev. 0

Condition Reports (CRs) and Deviation Reports (DRs)
CR 009722, 2-IA-PCV-201 Downstream Pressure Setpoint is Drifting, 3/30/2007
CR 006907, 1-IA-PCV-101 Downstream Pressure Setpoint is Drifting, 1/29/2007
CR 004859, 2-IA-PCV-201 Downstream Pressure Setpoint is Drifting, 11/23/2006
CR 001398, Incorrect DCP Numbers Were Specified in the DCP Packages
DR S-2004-4305-E2, 1-IA-PCV-101 “Popped” Open Resulting in Overpressurization of the Instrument Air Supply Manifold, Opening the PORV, 11/21/2004
DR S-2003-3115, 2-IA-PCV-201 Downstream Pressure Setpoint is Drifting, 6/27/2003
DR S-2002-0177, Use of Non-conservative Valve Factors for Rising Stem Gate MOVs, 01/22/2002
DR S-2006-0873, An ASME XI Preservice Examination Was Not Performed As Required
DR S-2006-0878, NDE Surface Examination (MT or PT) Were Not Performed As Required

Work Orders
00724962-01, Containment Isolation Valve Local Leak Rate Testing (Type C Containment Testing) Using 1-OPT-CT-201, Rev. 017 and Cold Shutdown Testing of 1-CH-MOV-1381 Using 1-PT-18.6D, Rev. 006, 05/21/2006
00761935, Flush Annubar and Sensing Lines, 11/28/06
00761934, Flush Annubar and Sensing Lines, 04/17/07
00742560, Flush Annubar and Sensing Lines, 04/18/06
00741896, Implment DCP-06-019 Wiring Configuration, 05/11/06

00737588, Replace Stainless Steel Service Water Piping, Rev. 0

Drawings
S-93037-3-M-400, PORV Bottle Air System Modifications to 1-RC-PCV-1455C, Rev. 3
11448-FM-075C, Sheet 1 of 5, Flow/Valve Operating Numbers Diagram, Compressed Air System, Rev. 33
11448-FM-075E, Sheet 1 of 2, Flow/Valve Operating Numbers Diagram, Compressed Air System, Rev. 45
S-06047-0-1ESK6BY, Elementary Diagram 480V Circuits Motor Operated Valves 1-FW-MOV-151C and D, Rev. 0
S-06047-0-1FE9BC, Wiring Diagram 480V MCC 1H1-2 South, Rev. 0
11448-FE-88D, Wiring Diagram 4160V Emergency Bus 1H Stm Gen Aux FD PP 1-FW-P-3A Ckt 15H4, Rev. 22
S-06047-0-1ESK5K, Elementary Diagram 4160V Aux Stm Gen Feed Pumps, Rev. 0
S-06047-0-113E244A, Reactor Protection System Miscellaneous Signals, Rev. 0
11448-FE-4AT, Wiring Diagram Reactor Protection System, Rack 3 - Train A, Rev. 13
SU-DWG-000-11448-FE-1G, 125 VDC One Line Diagram, Rev. 35, 4/24/06
SU-DWG-000-11448-FE-10A, Wiring Diagram 125 VDC, Rev. 27, 12/29/05
SU-DWG-000-11454-FE-1G, 125 VDC One Line Diagram, Rev. 32, 2/12/07
S-06052-0-2FE21Q, D.C. Elementary Diagram 4160V Bus 2H BKR 25H3 and 25H8 Surry Unit 2, Rev. 0
11548-FE-21Q, S-06052-0-2FE21Q, D.C. Elementary Diagram 4160V Bus 2H BKR 25H3 and 25H8 Surry Unit 2, Rev. 12
S-06052-0-1FE21J, D.C. Elementary Diagram 4160V Circuits Surry Unit 1, Rev. 0
11448-ESK-6BN1, Elementary Diagram 480V Circuit Motor Operated Valve 01-SW-MOV-101A & B, Rev. 14
11448-ESK-6BP, Elementary Diagram 480V Circuit Motor Operated Valve 01-CW-MOV-100A & B, Rev. 16
11448-ESK-6BP, Elementary Diagram 480V Circuit Motor Operated Valve 01-CW-MOV-100C & D, Rev. 17
11448-ESK-6CD4, Elementary Diagram CNTMT Isolation Trip Valves, Rev. 17
11448-FE-1D, 4160V One Line Diagram Unit 1, Rev. 17
11448-ESK-5Q, Elementary Diagram 4160V Charging Pumps Sheet 2 , Rev. 27
11448-ESK-5U, Elementary Diagram 4160V Charging Pumps Sheet 4 , Rev. 16
11448-FE-1A2, Electrical Power Distribution One Line Integrated Schematic Unit 1, Rev. 17
S-05060-0-M-400, Replace Stainless Steel Service Water Piping, MER3/MER4/ Turbine Building, Units 1 & 2, Rev. 1

Other Documents
Purchase Order 45466613, Circle Seal Controls, Inc SR800B-33312-G Pressure Regulator (Qty 2), 09/26/2006
Inspection Test Documents, Material 06399610, Lot 104247, 01/17/2007
SPS Engineering Department Log Entry, 06/14/2007
STD-GN-0001, Instructions for DCP Preparation, Rev. 38
STD-GN-0003, Standard for Determining the Safety Classification of Structures, Systems, and Components, Rev. 16

STD-GN-0041, Instructions for Engineering Transmittals, Rev. 21
SPS UFSAR, Chapter 4, Reactor Coolant System, Rev. 38
SU-VTM-000-38-C006-00001, Operating and Maintenance Instructions for SR800 Series Regulators, Rev. 6
PPR 2002-002, Non-conservative Valve Factors Used in MOV Program, 01/16/2002
CME-02-0027, Recommended Margin Improvement Activities for Priority 1 Rising Stem Valves, Rev. 1
IPR 06-0533, AFW Pump Testing Indicated Loading Higher Than Estimated in DCP
ET-NAF-06-0045, Evaluation of Proposed Change to Surry FW-MOV-151/251 Operation and Alignment, Rev. 0
ET-CME-06-0009, Evaluation of Flow Testing of Surry MD AFW Pump 1-FW-P-3A Flowing to Two Low Pressure Steam Generators, Rev. 0
ET-CME-06-0012, Evaluation of a Single AFW Pump Delivering Flow to Three Low Pressure Steam Generators, Rev. 0
USFAR Sections 7.7.2, 7.11.2, 8.4.3, 9.10.35, Database Reviewed on 6/14/07
Technical Requirements Manual, Sections 3.3.2 and 3.7.9, Database Reviewed on 6/14/07
SDBS-SPS-NI Surry Design Basis Document- Nuclear Instrumentation System, Database Reviewed on 6/14/07
SDBS-SPS-EV, Surry Design Basis Document- Emergency Power and Vital Bus (120-240V) System, Database Reviewed on 6/14/07
Test Plan Surry Power Station 6/13/07
IEER 000 SEL00909 – 000, ESI Relay Model MKN51103 – 01 for EMD Relay Part Number 8263337
PTE 9002287, Commercial Grade Dedication of EDG Agastat Series 7012 Relays
DCP-06-046, Emergency Diesel Generator Timing Relay Replacement, Surry Units 1 & 2
USNRC Information Notice 87-66, Inappropriate Application of Commercial Grade Components
USNRC Information Notice 92-24, Distributor Modification to Certain Commercial grade Agastat Electrical Relays
Engineering Transmittal ET-S-01-0209, Maximum Opening Size in the Main Control Room Pressure Boundary, Rev. 1
Audit Report 06-03, Design Control and Engineering Programs

Condition Reports Written as Result of the Inspection

CR 013846, Inadequate Pressure Specified by Dedication Process for Regulator in PORV Air System
CR 013875, Two Temporary Modifications in Place in 2006 Had the Same Number Assigned
CR 013984, NRC Identifies Two Examples of Commercial Dedication Issues
CR 013815, Problems with the Commercial Grade Dedication of Agastat 7000 Relays
CR 013857, Problems with IEER SEL00909-000
CR 013867, Flat Washer or Lock Washer Missing from EDG # 2 Relay
CR 013986, UFSAR Pending Changes Issues

<u>Section 4OA2: Identification and Resolution of Problems</u>

<u>Plans and Procedures</u>
VPAP-1501, Deviations, Rev. 18
VPAP-1601, Corrective Action, Rev. 23
EPIP-1.01, Emergency Manager Controlling Procedure, Revs. 48 and 49
Dominion Central Reporting System Handbook

<u>Condition Reports (CRs)</u>
CR 002191, Emergency Classification Opportunity
CR 002562, Performance Indicator Evaluation
CR 003087, Final Evaluation of Performance Indicator Opportunity on missed NOUE 10/07/2006
CR002193, TSC response adversely affected by loss of power”
CR002300, VPAP2802 reportability review for CR002193 (loss of power to the TSC) relate to equipment problems associated with the loss of offsite power event of October 7, 2006.