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

January 18, 2002

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 INSPECTION REPORT NOS. 50-280/01-07, 50-281/01-07

Dear Mr. Christian:

On December 14, 2001, the NRC completed an inspection at your Surry Power Station, Units 1 and 2. The enclosed report presents the results of that inspection which were discussed on December 14, 2001, and January 16, 2002, with Mr. R. Blount and other members of your staff.

The inspection was an examination of activities conducted under your licenses as they relate to the identification and resolution of problems, and compliance with the Commission's rules and regulations and with the conditions of your licenses. Within these areas, the inspection involved selective examination of procedures and representative records, observations of activities, and interviews with personnel.

Based on the results of this inspection, the team concluded that the licensee was appropriately identifying problems and prioritizing and evaluating issues commensurate with their safety significance in a timely manner.

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

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Sincerely,

/RA by Larry Garner for/

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

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

Enclosure: Inspection Report Nos. 50-280/01-07
and 50-281/01-07

cc w/encl.:
Stephen P. Sarver, Acting Manager
Nuclear Licensing and
Operations Support
Virginia Electric & Power Company
Electronic Mail Distribution

Richard H. Blount, II
Site Vice President
Surry Power Station
Virginia Electric & Power Company
Electronic Mail Distribution

D. A. Heacock
Site Vice President
North Anna Power Station
Electronic Mail Distribution

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

Donald P. Irwin, Esq.
Hunton and Williams
Electronic Mail Distribution

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

Distribution w/encl.:
G. Edison, NRR
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NAME	MWidmann	JBartley	GMcCoy			
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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

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

Report Nos.: 50-280/01-07, 50-281/01-07

Licensee: Virginia Electric and Power Company (VEPCO)

Facilities: Surry Power Station, Units 1 & 2

Location: 5850 Hog Island Road
Surry, VA 23883

Dates: November 26 - 30, 2001
December 10 - 14, 2001

Inspectors: M. Widmann, Senior Resident Inspector, Virgil C. Summer, Region II
J. Bartley, Senior Resident Inspector, Watts Barr, Region II
G. McCoy, Resident Inspector, Surry Power Station

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

Attachments: 1. Supplemental Information
2. Documents Reviewed

Enclosure

SUMMARY OF FINDINGS

IR 05000280-01-07, IR 05000281-01-07, on 11/26-30 and 12/10-14/2001; Virginia Electric and Power Co., Surry Power Station, Units 1 & 2. Annual baseline inspection of the identification and resolution of problems.

The inspection was conducted by two senior resident inspectors and a resident inspector from the Surry Power Station. The significance of the findings is indicated by their color (Green, White, Yellow, Red) using IMC 0609 "Significance Determination Process." The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described at its Reactor Oversight Process website.

Identification and Resolution of Problems:

A. Inspector Identified Findings

The licensee's threshold for identifying problems and entering them into the corrective action program (CAP) was at an appropriate level. Self-disclosing events, equipment failures and human errors were appropriately evaluated. Formal processes such as audits and self-assessments performed by the licensee's staff and outside organizations were effective in identifying issues. The inspectors concluded that external industry operating experience and NRC generic communications had been evaluated for plant applicability and incorporated into the CAP as appropriate. The inspectors determined that the licensee was effective in prioritizing and evaluating issues commensurate with the safety significance. Licensee reviews adequately addressed the extent of condition, generic implications, common cause failure modes, and previous occurrences. Significant conditions adverse to quality were evaluated and resolved in a timely manner. Plant employees were not reluctant to report safety concerns.

B. Licensee Identified Violations

Two violations of very low safety significance (Green) which were identified by the licensee were reviewed by the inspectors. Corrective actions taken or planned appeared reasonable. The violations are listed in Section 4OA7 of this report.

Report Details

4 OTHER ACTIVITIES

4OA2 Problem Identification and Resolution

a. Effectiveness of Problem Identification

(1) Inspection Scope

The inspectors reviewed items selected across three strategic performance areas (reactor safety, radiation safety, and physical protection) to verify that problems were being properly identified, appropriately characterized, and entered into the corrective action program (CAP) for evaluation and resolution. The inspectors reviewed licensee procedure Virginia Power Administrative Procedure (VPAP)-1601, "Corrective Action," Revision 15, which described the administrative process for initiating and resolving problems. A plant issue report is initiated to document problems. The inspectors reviewed items from the licensee's corrective action database associated with high risk significant components and systems identified in the plant specific probabilistic risk assessment. The inspectors reviewed a sample of plant issues for components and systems with a risk achievement worth of greater than 2.0. Safety-related components and systems selected included the emergency diesel generators (EDGs) and service water (SW) and component cooling water (CCW) systems. The inspectors reviewed 43 plant issue reports from the approximately 3600 which had been generated from January 1 through December 13, 2001. The specific plant issues reviewed are listed in Attachment 2. The inspectors reviewed NRC inspection reports, issues that required a licensee event report (LER), and discussed the routine observation of the licensee's problem identification and resolution program with the Surry Power Station resident inspectors.

In addition, the inspectors reviewed a sample of maintenance rule (a)(1) items, including associated plant issues, to verify that maintenance rule equipment deficiencies were being appropriately entered into the CAP and the maintenance rule program. Corrective action, goals and monitoring for these items were also reviewed.

The inspectors reviewed 23 operating experience (OE) items, including selected NRC generic communications, to determine whether they were appropriately evaluated for applicability and whether problems identified through these reviews were entered into the CAP. Three temporary modifications and eight work orders were reviewed to verify that the issues had been properly identified in the corrective action system.

The inspectors reviewed a Nuclear Oversight audit of the CAP, two station level self-assessments and four department self-assessments to determine whether audit and self-assessment findings were entered into the licensee's CAP. Deviation Report (DR) Trend Reports for the fourth quarter 2000 as well as the first and second quarters of 2001 were reviewed to evaluate the identification of trends in the plant issues submitted during that time period. Corrective Action Annunciator Panels for the fourth quarter 2000 as well as the first and second quarters of 2001 were reviewed to evaluate management oversight of the CAP.

The inspectors reviewed a listing of all open and closed requests for engineering assistance (REAs), not associated with a plant issue report, to determine whether any included adverse conditions that should have been entered into the CAP. Additionally, the inspectors assessed whether the REAs were evaluated in a timely manner.

(2) Findings

The inspectors concluded that the licensee's threshold for identifying problems and entering them into the CAP was at an appropriate level. In addition to capturing self-disclosing events, equipment failures and human errors, formal processes such as audits and self-assessments performed by the licensee's staff and outside organizations were effective in identifying issues. The inspectors concluded that external industry operating experience and NRC generic communications had been evaluated for plant applicability. Both internal and external operating experience issues had been incorporated into the CAP with minor exceptions.

b. Prioritization and Evaluation of Issues

(1) Inspection Scope

The inspectors reviewed the plant issue reports, audits and self assessments listed in Attachment 2 to determine if issues were being appropriately prioritized in accordance with their safety significance and to evaluate the licensee's efforts in establishing the scope of problems and the cause determinations. During this review, the focus was placed on plant systems with the highest risk significance. The inspectors reviewed all the Category 1 root cause evaluations (RCEs) performed within the last year and selected Category 2 RCEs. The inspectors determined whether the root cause analyses and the specified corrective actions were appropriate and in accordance with licensee procedures. VPAP-1604, "Root Cause Evaluations," Revision 3 provided instructions on performing Category 1 (the most rigorous) and Category 2 RCEs. Category 3 RCEs (the lowest level cause evaluation) were defined and discussed in VPAP-1601.

The inspectors reviewed a station level self-assessment relating to the effectiveness of RCEs and compared the findings and problems identified by the self-assessment with the findings and observations of the inspectors.

The inspectors attended a Station Nuclear Safety and Operating Committee (SNSOC) meeting and reviewed selected SNSOC meeting minutes to determine if plant issues were being properly reviewed and if appropriate management attention was applied to plant issues. The inspectors also attended selected Plant Issue Review Team meetings to confirm significance level and assignment of required reviews were appropriate and in accordance with procedures confirm significance level and assignment of required reviews.

(2) Findings

The inspectors determined that the licensee was effective in prioritizing and evaluating issues commensurate with the safety significance. Although risk significance was not formally used in prioritizing issues, the methodology used, based on procedural

guidance, experience and judgement, was effective in identifying and prioritizing issues. The issues were evaluated and corrective actions were developed commensurate with their safety significance. In addition, the inspectors concluded that the licensee's reviews adequately addressed extent of condition, generic implications, common cause failure modes, and previous occurrences. Operability and reportability issues were appropriately evaluated and resolved. Significant conditions adverse to quality were evaluated and resolved in a timely manner. Category 1 and 2 RCEs were thorough and identified corrective actions were appropriate. Other evaluations were normally satisfactory and corrective actions were generally implemented in a timely manner.

c. Effectiveness of Corrective Actions

(1) Inspection Scope

The inspectors reviewed a sample of the plant issues listed in Attachment 2 to verify that the licensee had identified and implemented corrective actions commensurate with an issue's safety-significance, and where possible, evaluated the effectiveness of the actions taken. In addition, the inspectors reviewed a sample of open plant issues to verify that appropriate immediate corrective actions were taken to correct or compensate for the identified problem. The inspectors reviewed two non-cited violations and two licensee event reports to evaluate the adequacy of corrective actions and to verify that the identified corrective actions were completed. The inspectors also reviewed operator distractions (OD) to determine whether appropriate corrective actions are being taken to address the work-around condition(s).

The inspectors reviewed three Category 1 RCEs and seven Category 2 RCEs to evaluate the effectiveness of the corrective actions in preventing recurrence of the conditions.

The inspectors reviewed findings concerning the effectiveness of corrective actions from the Nuclear Oversight corrective action audit, two station level self-assessments and three quarterly trend reports to determine if they were generally consistent with NRC findings from this inspection and those documented in the NRC inspection reports.

(2) Findings

The inspectors determined that in general the licensee's corrective actions were appropriately focused to correct problems and, for significant conditions adverse to quality, to prevent recurrence. Corrective actions developed and implemented for plant equipment problems were generally effective in correcting the equipment deficiencies. The root cause evaluations were generally correct in identifying why equipment problems occurred. The licensee was typically thorough in completing corrective actions. Some minor examples were identified where recommended corrective actions in plant issue responses were not assigned and tracked by the CAP. The licensee generated plant issues to resolve these examples. The findings of licensee's self-assessments, audits, and trend reports were consistent with the inspectors observations. Two licensee-identified non-cited violations (NCVs) are discussed in Section 4OA7.

Operator distraction and Performance Indicators

Operator distraction 2001-ODD-001 was appropriate to track concerns with the dedicated resources needed during surveillance testing to realign the EDGs to mitigate certain accidents. The inspectors concluded that the realignment actions specified in procedures were adequate. However, the inspectors questioned whether these restoration actions constitute a few simple steps. If they do, then Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Performance Indicator Guidelines," Revision 1, allows the time during surveillance testing not to be included in unavailability calculations for a performance indicator. NEI 99-02 indicates that the intent is to allow credit for restoration actions that are virtually certain to be successful during accident conditions. Specifically, the guidance allows a licensee not to count unavailability hours of a component if the safety function can be promptly restored by a dedicated operator using written procedures containing a single action or a few simple actions. The EDG restoration actions were attached to the monthly performance test 0/1/2/-OPT-EG-001 and normal alignment procedure 0/1/2-OP-EG-001. The restoration actions for Number 1 and Number 2 EDGs require operators to be stationed in the control room, at the emergency switchgear bus and locally at the EDG. The operators must coordinate actions to manipulate supply breaker switches, reset functions, adjust voltage and speed, and set the governor speed droop to zero. The restoration actions for the Number 3 EDG requires additional actions if an accident were to occur on the opposite unit from the one being tested. The uncounted hours during surveillance testing were approximately 10 percent of the overall reported unavailability time that the EDGs accumulated throughout the year. The inspectors noted that a similar situation occurs with procedure 1/2-PT-8.5, Revision 12, which tests high high Consequence Limiting Safeguards Logic. Pending further review by the NRC, this item is identified as unresolved item (URI) 50-280, 281/01007-01.

d. Assessment of Safety-Conscious Work Environment

(1) Inspection Scope

The inspectors interviewed licensee operations, maintenance, security, chemistry, health physics, engineering, and supervisory personnel to develop a general view of the safety-conscious work environment and to determine whether any conditions existed that would cause workers to be reluctant to raise safety concerns. The inspectors queried licensee employees to determine whether any conditions existed that would cause employees to be reluctant to raise safety concerns. The inspectors also reviewed the licensee's employee concerns program which provides an alternate method to the CAP for employees to raise safety concerns and remain anonymous.

(2) Findings

The inspectors concluded that licensee management emphasized the need for all employees to identify and report nonconforming conditions using the appropriate methods established within their administrative programs. Methods available included plant issues, work requests, and the employee concerns program. These methods were readily accessible to all employees. Licensee management encouraged all employees to promptly identify nonconforming conditions through the CAP. Based on discussions

conducted with plant employees from various departments, the inspectors determined that employees were not reluctant to report safety concerns.

4OA6 Management Meetings

Exit Meeting Summary

The inspectors discussed the inspection results with Mr. Richard Blount, the Site Vice President, and other members of licensee management at the conclusion of the inspection on December 14, 2001. On January 17, 2002, Mr. Larry Garner, Senior Project Engineer and other members on Region II staff discussed the NCV associated with a Number 2 EDG breaker problem with Mr. Richard Blount and other members of licensee management.

The inspectors asked the licensee whether any of the material examined during the inspection should be considered proprietary. No proprietary information was identified.

4OA7 Licensee Identified Violations

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

NCV Tracking Number	Requirement Licensee Failed to Meet
(1) NCV 50-281/01007-02	10 CFR Part 50, Appendix B, Criterion XVI, requires that measures shall be established to assure that conditions adverse to quality, such as failures and malfunctions, are promptly identified and corrected. On September 27, 2001, the licensee identified that they had returned the Number 2 Emergency Diesel Generator breaker to service on September 16 without identifying and correcting the cause of the breaker to close twice on that day prior to returning it to service. This issue has been entered in the licensee's corrective action program as Plant Issue S-2001-2640 and 3850.
(2) NCV 50-280/01007-03	Technical Specifications (TS) 6.4.D requires that all procedures specified in TS 6.4.A be followed. TS 6.4.A.1 and 6.4.A.2 requires detailed procedures for operation and testing of systems and components involving nuclear safety of the station be provided. Between September 24 and October 17, 2001, the licensee failed to properly follow Operations Procedure, 1-OP-EG-001, Revision 12. Specifically, the licensee failed to ensure that Number 1 Emergency Diesel Generator (EDG) was properly aligned for standby operation in that the load limit knob was discovered by the licensee to be set to zero, thereby, disabling the Number 1 EDG to start and carry the

required loads on a valid start signal. This issue was discovered during surveillance testing on October 17, 2001. This issue has been entered in the licensee's corrective action program as Plant Issue S-2001-2975.

If one or both of these NCVs are denied, provide a response with the basis for the denial, within 30 days of the date of this inspection report, to the United States Nuclear Regulatory Commission, ATTN: Document Control Desk, Washingtion, DC 20555-0001; with copies to the Regional Administrator, Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washingtion, DC 20555-0001; and the NRC Resident Inspector at the Surry Power Station.

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee

M. Adams, Superintendent, Engineering
R. Allen, Superintendent, Maintenance
R. Blount, Site Vice President
T. Cyburt, Nuclear Quality Specialist, Nuclear Oversight
B. Foster, Director, Nuclear Station Safety and Licensing
T. Gillespie, Supervisor, Nuclear Construction, Nuclear Site Services
W. Gross, Shift Supervisor, Nuclear Operations
D. Hart, Engineer, Station Nuclear Safety
B. Langevin, Supervisor, Nuclear Planning, Nuclear Outage and Planning
R. Savedge, Supervisor, Security Operations, Nuclear Security
J. Spence, Supervisor, Nuclear Training
E. Turko, Supervisor Nuclear Engineering, Station Nuclear Safety
R. Yzzi, Nuclear Specialist, Nuclear Oversight

NRC

R. Musser, Senior Resident Inspector, Surry
K. Landis, Chief, Branch 5, Division of Reactor Projects, Region II

ITEM OPENED

50-280, 281/01007-01	URI	Adequacy of Emergency Diesel Generator contingency plans to meet intent of Nuclear Energy Institute 99-02 guidance and report unavailability time accurately (Section 4AO2.c)

ITEMS OPENED AND CLOSED

50-281/01007-02	NCV	Number 2 Emergency Diesel Generator output breaker returned to service without identifying and correcting the cause of the failure (Section 4OA7)
50-280/01007-03	NCV	Failure to follow procedure for Number 1 Emergency Diesel Generator standby operation alignment (Section 4OA7)

DOCUMENTS REVIEWED

Audit

Nuclear Oversight Audit Report 01-09, Corrective Action dated 10/11/01

External Assessment

Employee Concerns Program Assessment, July 2001
Safety Conscious Work Environment Survey Comments, May 2001

Engineering Transmittals

S-00-0308	Maintenance Rule Scoping and Performance Criteria Matrix/s/1&2
S-01-0004	Reference Stroke Time for 2-RS-MOV255 A & B and 256 A & B/S/2
S-01-0005	EDG Fuel Oil Level Switch Setpoint Reference Change/s/1&2
S-01-0027	Acceptance Criteria for Auxiliary Feedwater Pump/s/1&2
S-01-0049	Main Control Room Test Door/s/1&2
S-01-0054	Revision 0, Operability and Stroke time Acceptance Criteria of 2-CV-TV-250D
S-01-0074	Acceptance Criteria for Low Head Safety Injection Pump and Valve Procedure/s/1&2
S-01-0087	Stroke Time Acceptance Criteria for 1-CS-MOV-101A, B, C, D/S/1
S-01-0089	Revision of 1-DRP-007 and 2-DRP-007 MOV Operable Bands/s/1&2
S-01-0113	Containment Closeout Issues/s/2
S 01-0147	Emergency Diesel Generator No. 1 Vibration Analysis, Revision 0
S 01-0193	Evaluation of 1-EE-EG-1-Generator Vibrations, Revision 0 and 1

Licensee Event Reports

50-281/2001-001-00	Extended Snubber Results in Technical Specifications Violation
50-280,281/2001-002-00	Control Room Chillers Breakers Improper Trip Rating Resulted in Potential for Breaker Trip

Management Reports

Station Nuclear Safety: Fourth Quarter 2000 DR Trend Report
Station Nuclear Safety: First Quarter 2001 DR Trend Report
Station Nuclear Safety: Second Quarter 2001 DR Trend Report
Surry Performance Annunciator Panel for Corrective Actions, Fourth Quarter 2000
Surry Performance Annunciator Panel for Corrective Actions, First Quarter 2001
Surry Performance Annunciator Panel for Corrective Actions, Second Quarter 2001

Non-Cited Violations

50-280, 281/00005-01	Failure to adequately resolve a condition adverse to quality, the auxiliary ventilation exhaust filter fans tripping on low suction pressure

50-280, 281/01002-01	Failure to implement a fire brigade drill program as required by Surry License Condition 3.I

Operating Experience Items (assigned plant issue, if applicable)

IN 00-10	Recent Events Resulting in Extremity Exposures Exceeding Regulatory Limits
IN 00-12	Potential Degradation of Firefighter Primary Protective Garments (S-2000-2203
IN 00-13	Review of Refueling Outage Risk
IN 00-14	Non-Vital Bus Fault Leads to Fire and Loss of Offsite Power (S-2000-2439)
MISC 00-20	Failure of 125VDC battery to Meet Load Capacity Requirements (S-2000-2802)
PT21 00-07	Low Torque on Bettis Actuators (S-2000-2803)
IN 00-15	Recent Events Resulting in Whole Body Exposures Exceeding Regulatory Limits
IN 00-20	Potential Loss of Redundant Safety-Related Equipment Because of the Lack of High-Energy Line Break Barriers
IN 00-21	Detached Check Valve Disc not Detected by Use of Acoustic and Magnetic Non-intrusive Test Techniques (S-2001-0039)
MISC 01-07	Notification of Potential Defect in K-line Control Device Close Coil Hairpin Retainers (S-2001-1457)
IN 01-07	Unescorted Access Granted on the Basis of Incomplete and/or Inaccurate Information (S-2001-1507)
IN 01-09	Main Feedwater System Degradation in Safety-Related ASME Code Class 2 Piping Inside the Containment of a Pressurized Water Reactor (S-2001-1867)
IN 01-12	Hydrogen Fire at Nuclear Power Station (S-2001-2181)
MISC 01-02	Ingersoll-Dresser Pump Co - Vendor Notification #37703, Broken Capscrew in Auxiliary Feedwater Pump (10CFR21 Notification 2001-10) (S-2001-0461)
OE 11730	Pressurizer Code Safety Valve Leakage
OE 11783	Incore Flux Thimble Failure
OE 11784	Reactor Trip Due to Personnel Error
OE 11817	Emergency Diesel Generator Inoperable Due to Low Viscosity Oil
OE 11832	Smoke Removal Fan Operation Makes Control Room Habitability Envelope Inoperable
OE 11847	Red Rubber Hose Fittings Degraded by Oil
OE 11898	Unexpected/Undesirable Changes in MOV Position
OE 11810	Safety Injection Hot Leg Injection Line Air Void
OE 11906	Reactor Trip and Safety Injection Due to Controller Failure
OE 12133	Safety Injection Accumulator Tank Nozzles Replaced Due to Intergranular Stress Corrosion Cracking
OE 12212	Coil Failures of Westinghouse 600 VDC Relays in 125 VDC Applications
OE 12356	Pump Discharge Motor Operated Valve (MOV) Failed to Open (S-2001-1868)
SEN 217	EDG Failure During Surveillance Testing
SOER 99-1	Concerns About Offsite Power Voltage Inadequacies and Grid Reliability Challenges Due to Industry Deregulation
SOER 01-1	Unplanned Radiation Exposure
S-2001-0786	Incorrect Valve Weight and Center of Gravity Used in Calculations

Operator Work-Arounds

1999-0DB-008 RHR Flow Control System
2000-0DC-016 1-CH-P-1B Charging Pump Degraded Performance
2001-0DD-001 EDG Contingency Action Attachments in the Monthly OPT

Other

NEI 99-02, Safety System Unavailability, Revision 1
Temporary Shielding Request 92-062, Revision 1

Plant Issue Reports

S-1999-2114 Additional performances of unscheduled runs of the SW pump diesel were necessary due to bad test equipment
S-1999-2134 Low compression on three cylinders of 1-SW-P-1A
S-2000-0550 Rebuild of 1-CH-P-1B Charging Pump Performance Degraded
S-2000-0915 Charging Pump 1B Pump Curve Data Below Expected Range
S-2000-2180 1-VS-F-58A and 58B Both Tripped Following AUTO Start, Associated with the 2J Bus ESF Portion of U-2 Logic Testing
S-2000-2229 A Steam Generator Feedwater Line Thickness Below Code Minimum
S-2000-2686 2-EP-BKR-25H6 Cell Switch Did Not Reposition Properly When Breaker Was Racked to Disconnect
S-2000-2784 Potential Problem with Bettis Actuators Shipped to Surry Power Station
S-2001-0059 Fuse Holder Failure on 01-CH-LC-1115A Comparator
S-2001-0235 CCW MOVs exceed seating torque limits for installation of shaft locking pin
S-2001-0285 Acceptance criteria for AAC diesel generator surveillance
S-2001-0344 2-CW-MOV-200A exceeded the maximum close torque limit
S-2001-1098 Voltage Transient on Vital Bus 2-III
S-2001-1104 Proper test medium for relief valve testing
S-2001-1368 1b2 Uninterruptable Power Supply (UPS) Switched to Alternate Source When Returning 1B1 UPS to Service
S-2001-1440 CS pump 1A vibrations significantly higher than reference values but within acceptance criteria
S-2001-1541 2-AS-PCV-200 identified to be leaking through
S-2001-1557 Unit 1 RWST inleakage
S-2001-1698 Iodine Detected in Surry Site Well Water Sample
S-2001-1733 During disassembly of 1-SW-P-1A Engine due to low compression it was identified that the main bearings were damaged
S-2001-1827 Flow Inbalance for TSC Ventilation Supply and Exhaust
S-2001-1839 Woodward Governor Model 2301A Part 21 report for electrolytic capacitors
S-2001-1883 During Number 1 EDG testing it took 3.29 seconds to reach 40 rpm
S-2001-2070 An excess 55 gallons of oil was added to the Number 1 EDG sump during maintenance
S-2001-2146 1-VS-MOD-101C Did Not Open Automatically

S-2001-2229	Through-Wall Leakage from 2-SW-186, Service Water Inlet Vent for Unit 2 B Charging Pump
S-2001-2234	Feeder Breaker for 1-VS-E-4A, “A” Control Room Chiller Tripped
S-2001-2261	Through-Wall Leakage from 1-SW-175, “C” Charging Pump Lube Oil Cooler Service Water Vent
S-2001-2269	Installation of Containment Sump Walls are Unsafe
S-2001-2467	Electrician installed temporary switch for testing
S-2001-2493	1984 calculation to determine pump NPSH does not correctly account for potential canal inventory losses
S-2001-2723	#1 EDG vibrations in danger range during 1-OPT-EG-001
S-2001-2726	#1 EDG vibrations were in the danger range during 1-OPT-EG-001 on 9-23-01
S-2001-2814	Failure to Test Both Start Circuits During Logic Testing
S-2001-2890	Failure in the Closing Coil Anti-pump Contact on 2-EP-BKR-25H3
S-2001-2975	#1 EDG Failed to Start During “H” Bus Logic Test
S-2001-2986	#1 EDG trouble alarm due to low lube oil temperature
S-2001-3037	Oil analysis on 1-CH-P-1A motor inboard and outboard bearings indicate high silicon and some copper
S-2001-3068	Blocking device slipped and severed linkage for limit switch
S-2001-3240	Main steam trip valve actuator will come in contact with scaffolding
S-2001-3268	#1 EDG trouble alarm due to low lube oil temperature
S-2001-3327	B station battery was returned to service without properly dispositioning required PMT
S-2001-3379	#1 EDG frequency was low on initial start

Procedures

0-OP-EG-001	EDG Availability Contingency Actions, Attachment 6, Revision 14
1-OP-EG-001	EDG Availability Contingency Actions, Attachment 6, Revision 11
2-OP-ZZ-01	Preparation for Hot Spot Flushes, Revision 1
0-OPT-EG-001	EDG Availability Contingency Actions, Attachment 5, Revision 22
1-OPT-EG-001	EDG Availability Contingency Actions, Attachment 5, Revision 17
OPAP-0012	Valve Operations
VPAP-1408	System Operability
VPAP-1501	Deviations
VPAP-1601	Corrective Actions
VPAP-1604	Root Cause Evaluations

Requests For Engineering Assistance

99-0134	Low Lube Oil Temperature on #2 EDG
01-0016	SW Valves Removal 1/2-SW-MOV-106/206A,B/S/1&2
01-0031	Safety Injection Flow Transmitter/S/1&2
01-0055	Blend Integrators/S/1&2
01-0060	Zero Leakage Removable Covers Installation on TSC Supply Dampers 1-VS-AOD-133C & 133E/S/1
01-0068	Containment Sump for the Inside and Outside RS/SI Pumps/S/1&2
01-0082	Breaker Replacement for U1 A, B, C Chillers/S/1

01-0083 Unit 1/2 Letdown Radiation Monitors and Associated Piping
01-0084 Abandoned Non-Safety Related Cable 2VB211 Terminated at Vital Bus 2-111 circuit 28/S/2
01-0086 Intrusion Detection System - Protected Area Barriers/s/1&2
01-0087 Unit 1 and 2 High Level Intake Grating
01-0093 Emergency SW Diesel Pump and Oil Storage Room Alarm Installation/s/1&2
01-0094 Increase MCR Bottled Air Flow Rate/S/1&2

Root Cause Evaluations - Category 1

S-2000-1666 #2 EDG Failure to Start During Return to Service Testing
S-2000-2473 Unit 1 Reactor Trip Due to Work on Wrong Unit EHC System
S-2001-0375 Hydraulic Snubber 2-RC-HSS-116 Over-extension
Failure to identify and correct a condition adverse to qualify in a timely manner

Root Cause Evaluations - Category 2

S-2000-2569 Unit 2 pressurizer safety valves continued to leak at normal operating pressure
S-2001-0273 Low compression on four cylinders of 1-SW-P-1C
S-2001-0273 #1 EDG vibrations in danger range during 1-OPT-EG-001
S-2001-0845 Misalignment of the Surry Unit 2 pressurizer relief tank vent
S-2001-0845 PRT to overhead jumper was incorrectly installed
S-2001-2640 25H3 failed to close after two attempts to parallel the #2 EDG
S-2001-2975 Failure of #1 EDG to automatically start during 1H bus degraded voltage testing IAW 1-OPT-ZZ-001

Root Cause Evaluations - Category 3

S-2000-0550 1-OPT-CH-002 degraded performance following rebuild of 1-CH-P-1B pump
S-2001-0127 Removal of 1/2-SW-MOV-106/206A,B from SW system

Self-Assessments

Engineering Self-Assessment 00-002, Review of Post Modification Testing
Engineering Self-Assessment 01-010, Safety and Relief Valve Program
Operations Department Self-Assessment 01-04, Operations Sensitivity to Plant Issues and Deviating Conditions
Operations Department Self-Assessment 01-02, Operations Use of Operating Experience (OE)
Station Self-Assessment 01-0009, RP Department Corrective Action Program
Station Level Self-Assessment 00-03, Corrective Action
Station Level Self-assessment “Root Cause Effectiveness” approved 8/26/2000

Temporary Modifications

S1-99-006	Disconnect ROBICON Air Flow Switch and Install Temporary Cooling Fans
S1-01-001	Provide Proper Indication of Turbine Power Output Indication Due to Degraded B Phase Voltage
S1-00-001	Electrically Bypass ROBICON Controller

Work Orders

00401536	Relocate 2-SI-FT-2963 IAW DCP 98-066
00428952	Overhaul 1-CH-P-1B Pump
459783-01	Drive EDG 1 Louvers Closed
458694-01	EDG 1 Engine/Generator Alignment and Balancing
459786-01	Drive EDG 1 Louvers Closed
456001-01	Repair EDG 1 Wire Sheathing
455803-01	Replace EDG 3 Start Failure Relay
458780-01	Troubleshoot Ground on DC Bus
444787-01	Determine Source of Current Oscillations
400502-01	Replace RHR Operator/Valve Assembly