UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
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ATLANTA, GEORGIA 30303-8931

October 28, 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 NUCLEAR POWER STATION - NRC INTEGRATED INSPECTION REPORT NOS. 50-280/02-03 AND 50-281/02-03

Dear Mr. Christian:

On September 28, 2002, the NRC completed an integrated inspection at your Surry Power Station, Units 1 and 2. The enclosed report documents the inspection findings which were discussed on October 9, 2002, with Mr. Blount and other members of your staff.

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

Based on the results of this inspection, the inspectors identified two issues of very low safety significance (Green). In addition, a licensee identified violation (NCV) is listed in Section 4OA7 of this report. If you contest the NCV in this report, you should provide a response with the basis for your denial, within 30 days of the date of this inspection report, to the United States Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Surry Power Station.

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

(ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

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

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

Enclosures: NRC Integrated Inspection Report Nos. 50-280/02-03
and 50-281/02-03 w/Attachment: Supplementary Information

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DATE	10/28/2002	10/28/2002	10/28/2002				
E-MAIL	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.: 50-280, 50-281

License Nos.: DPR-32, DPR-37

Report No.: 50-280/02-03, 50-281/02-03

Licensee: Virginia Electric and Power Company (VEPCO)

Facility: Surry Power Station, Units 1 & 2

Location: 5850 Hog Island Road
Surry, VA 23883

Dates: June 30 - September 28, 2002

Inspectors: R. Musser, Senior Resident Inspector
G. McCoy, Resident Inspector
K. Green-Bates, Project Engineer (Sections 1R01, 1R05, 1R06, 1R07, 1R15, 1R22, 4OA5)
D. Jones, Senior Health Physics Inspector (Section 2PS1)
J. Kreh, Health Physics Inspector (Section 2OS3)
W. Sartor, Senior Emergency Preparedness Inspector (Sections 1EP2 - 1EP5 and 4OA1.4 - 4OA1.6)
F. Wright, Senior Health Physics Inspector (Sections 2OS1, 2PS3)
L. Garner, Senior Project Engineer (Sections 1R15, 1R22, 4OA5)
F. Jape, Senior Project Manager (Section 4OA5)

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

Enclosure

SUMMARY OF FINDINGS

IR 05000280-02-03, IR 05000281-02-03; Virginia Electric and Power Co.; 06/30/02 - 09/28/02; Surry Power Station Units 1 & 2. Event followup.

The inspection was conducted by resident inspectors, a project engineer, a senior project engineer, a senior project manager, a health physics inspector, two senior health physics inspectors, and a senior emergency preparedness inspector. The inspectors identified two green findings. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using IMC 0609 "Significance Determination Process" (SDP). The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. Inspector Identified Findings

Cornerstone: Mitigating Systems

- (Green) A finding was identified for not providing proper separation between the 125V DC busses. A single failure could affect both redundant DC busses on a unit and encumber normal decay heat removal systems.

  The finding was of very low safety significance due to plant design features which mitigate the consequences of a fault within the DC system. Specifically, there are numerous alternative methods of decay heat removal available with simple operator actions. (Section 4OA3.2)

- (Green) A finding was identified when the Revised Oversight Process Working Group determined that the recovery actions in an emergency diesel generator (EDG) surveillance procedure did not meet the guidelines of NEI 99-02, and the corresponding unavailability hours should be counted towards the Safety System Unavailability - Emergency AC Power Performance Indicator (PI) during the testing of the EDG. When the licensee revised the PI data, the PI on Unit 1 changed from green to white for the fourth quarter of 2001 and the first and second quarters of 2002.

  The finding was of very low safety significance because the added unavailability hours reflect only a small portion of the time required for the PI to exceed the green/white threshold. The majority of the unavailability hours were the result of issues that were previously identified and inspected, and therefore, no additional regulatory response is required. (Section 4OA3.3)

B. Licensee Identified Violation

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

Report Details

Summary of Plant Status

Unit 1 and Unit 2 operated at power for the entire reporting period. On August 12, Unit 1 power was reduced to 59 percent due to a failure of the A isophase bus duct cooling fan. The unit was returned to full power on August 13 after repairs were completed. On September 7, Unit 1 power was reduced to 59 percent to secure the B main feedwater pump for repairs. Unit 1 was returned to full power the same day.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection

.1 High Winds

a. Inspection Scope

The inspectors reviewed the licensee's preparations for high winds and implementation of Operations Checklist OC-21 "U1 and U2 Operations Checklist for Severe Weather," dated February 11, 2002; and Surry Power Station Abnormal Operating Procedure No. O-AP-37.01 "Abnormal Environmental Conditions," to verify that those preparations limited the risk of weather related initiating events, ensured accessibility to accident mitigation system equipment, and adequately protected accident mitigation systems from adverse weather effects.

b. Findings

No findings of significance were identified.

.2 Hot Weather Operations

a. Inspection Scope

The inspectors verified that plant design features and procedures protected plant mitigating systems from the adverse effects of high temperatures. Specifically, the inspectors reviewed Operations Checklist (OC) 21, "U1 and U2 Operations Checklist for Severe Weather," to verify that the preparations limited the risk of weather related initiating events and adequately protected accident mitigation systems from adverse weather effects.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment

.1 Partial System Walkdowns

a. Inspection Scope

For the systems identified below, the inspectors reviewed plant documents to determine correct system lineup, and observed equipment to verify that the system was correctly aligned:

- Number 3 emergency diesel generator (EDG) while the number 2 EDG was out of service for maintenance (Drawings 11448-FB-046C, sheets 1, 2, and 3),
- Unit 2 A charging pump while the Unit 2 B charging pump was out of service for maintenance, and
- Unit 2 charging pump service water system while the Unit 2 charging pump service water pump was out of service for maintenance (Drawings 11448-FM-071D sheet 1 and 11548-FM-071B sheet 1).

b. Findings

No findings of significance were identified.

.2 Complete System Walkdown

a. Inspection Scope

The inspectors performed a detailed walkdown and inspection of the accessible portions of the Unit 1 containment spray system to determine if it was properly aligned and to identify discrepancies that impact its availability and functional capability. Specifically, the walkdown included the accessible components from the refueling water storage tank to the containment penetrations. A review of outstanding work orders was performed to determine if any deficiencies existed which could affect the ability of the system to perform its function. The inspectors used the applicable portions of the following operating procedures (OPs) and drawings:

- 1-OP-CS-001A, “Containment Spray System Alignment”
- 1-OP-CS-003A, “RWST Recirc Cooling System Alignment”
- Drawings 11448-FM-083A, sheet 2; 11448-FM-084A sheets 1, 2, and 3; 11448-FM-089A, sheet 1; 11448-FM-088B, sheet 1; 11448-FM-087A, sheet 2; and 11448-FM-081A, sheet 1

b. Findings

No findings of significance were identified.

1R05 Fire Protection

.1 Fire Area Walkdowns

a. Inspection Scope

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

- EDG fuel oil pump houses, north and south,
- Unit 1 main steam valve house,
- Mechanical equipment rooms (MER) 1 and MER 2,
- Unit 1 and Unit 2 normal switchgear rooms,
- 1A and 2A battery rooms,
- Unit 1 and 2, transformer yards, and
- Unit 1 and 2, reserve station service transformers.

b. Findings

No findings of significance were identified.

.2 Annual Fire Brigade Drill

a. Inspection Scope

On July 12, the inspectors observed a fire brigade drill to evaluate the readiness of the licensee's personnel to fight fires. Specific aspects evaluated were: use of protective clothing and self contained breathing apparatus; fire hose deployment and reach; approach into the fire area; effectiveness of communications among the fire brigade members and the control room; sufficiency of fire fighting equipment brought to the fire scene; and the drill objectives and acceptance criteria.

b. Findings

No findings of significance were identified.

1R06 Flood Protection

a. Inspection Scope

The inspectors reviewed the licensee's flooding mitigation plans and equipment to determine consistency with design requirements and risk analysis assumptions. Walkdowns were conducted of the interior and exterior walls of the turbine building and the auxiliary building to review compliance with external flooding criteria. The Unit 1 and 2 Emergency Switchgear Rooms and Maintenance Equipment Room 3 were also toured to verify compliance with calculated flood platform heights, penetrations and internal

flooding water barrier requirements. The documents reviewed are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance

a. Inspection Scope

The inspectors evaluated the condition of the Component Cooling Water (CCW) Heat Exchangers. The inspection included review of the as-found condition of the heat exchangers to determine if deficiencies existed that could mask degraded performance or could indicate a potential for common cause problems. The inspectors discussed as-found conditions, monitoring schedules, and historical performance of the CCW chillers with engineering personnel. Heat exchanger condition reports and other documents reviewed are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification

a. Inspections Scope

The inspectors observed licensed operator performance during simulator requalification sessions RQ-02.4 (small break loss of coolant accident and the reactor trip breakers fail to open) and RQ-02.5 (reactor coolant leak leading to a safety injection) to determine whether the operators:

- were familiar with and could successfully implement the procedures associated with recognizing and recovering from events which occurred during the simulator;
- recognized the high-risk actions in those procedures; and,
- were familiar with related industry operating experiences.

The inspectors assessed overall crew performance, communication, oversight of supervision and the instructors' critique.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

For the equipment issues described in the plant issues listed below, the inspectors evaluated the licensee's effectiveness of the corresponding preventive and corrective maintenance. Inspectors performed walkdown of the accessible portions of the system, performed in-office reviews of procedures and evaluations, and held discussions with system engineers. Inspectors compared the licensee's actions with the requirements of the Maintenance Rule (10 CFR 50.65) using VPAP 0815, "Maintenance Rule Program," and the Surry Maintenance Rule Scoping and Performance Criteria Matrix.

- Plant Issue S-2002-2445, Service water suction pressure was noted to be in a vacuum while 1-VS-E-4A was operating, and
- Plant Issue S-2002-0751, 2-IA-C-4B will not carry a load.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Evaluations

a. Inspection Scope

The inspectors verified 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 verified the licensee entered the appropriate risk category in accordance with plant procedures. Specifically, the inspectors reviewed:

- Removal from service of Number 2 EDG for testing (2-OPT-EG-01) with A component cooling pump (1-CC-P-1A), C emergency service water pump (1-SW-P-1C), Unit 1 B containment instrument air compressor (1-IA-C-4B), Unit 2 A containment instrument air compressor (2-IA-C-4A) and valve 1-RH-MOV-1720A inoperable.
- Performance of a semi-annual station battery test (0-EPT-0104-01) with the C containment cooling heat exchanger (1-CC-E-1C), Unit 2 B containment instrument air compressor (2-IA-C-4B) and valve 1-RH-MOV-1720A inoperable.
- Failure of the 1G transformer (1-EP-TX-1G) with thunderstorms in the area (OC-21) with the Unit 1 service air compressor (1-SA-C-1), Unit 2 B containment instrument air compressor (2-IA-C-4B) and valve 1-RH-MOV-1720A inoperable.
- Failure of the Unit 1 C condensate pump (1-CN-P-1C) with the Unit 1 service air compressor (1-SA-C-1), the diesel driven fire pump (1-FP-P-2), the B control room chiller (1-VS-E-4B), Unit 2 B containment instrument air compressor (2-IA-C-4B) and valve 1-RH-MOV-1720A inoperable.
- Removal of the Number 2 EDG from service for performance of the monthly operability test (2-OPT-EG-001) and the start sequence test (2-OPT-EG-008) with the Unit 2 B containment instrument air compressor (2-IA-C-4B) and valve 1-RH-MOV-1720A inoperable.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

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

- Plant Issue S-2002-2451, Control room annex door deficiencies,
- Plant Issue S-2002-2618, Leakage from 1-CT-TV-150C,
- Plant Issue S-2002-2856, Potential defect regarding K-line circuit breaker failure to charge and close,
- Plant Issue S-2002-2686, Intermittent electrical arcing at landed lead on 01-VS-F-58A (RCA Exhaust Fan 58A), and
- Plant Issue S-2002-2587, Snubber 1-MS-HSS-29 with less than 5% fluid in reservoir and associated ET 02-0161, “Information on Evaluation of Functionality of Snubber 1-MS-HSS-29 and Support 11448-PSSK-103A2.2"

b. Findings

No findings of significance were identified.

1R16 Operator Workarounds

a. Inspection Scope

During this inspection period the inspectors reviewed the licensee’s list of identified operator workarounds dated July 19, 2002, to determine whether any identified workarounds affected either the functional capability of the related system or human reliability in responding to an initiating event. During these reviews, the inspectors specifically considered whether any identified workaround affected the operators’ ability to implement abnormal or emergency operating procedures.

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testing

a. Inspection Scope

The inspectors reviewed the post maintenance test procedures and activities associated with the repair or replacement of the following components to determine that the

procedures and test activities were adequate to verify operability and functional capability following maintenance:

- Work Order (WO) 00468195-01 - 2-CC-TV-209B maintenance;
- WO 00469088-01 - 1-FW-MOV-160A maintenance;
- WO 00475687-02 - 1-FW-FCV-1498 actuator replacement;
- WO 00477279-03 and 1-PT-2.50, Unit 1 A Inadequate Core Cooling Monitor maintenance;
- WO 00460956-01 and 1-OPT-EG-005Q, 1D Emergency Diesel Generator Fuel Oil Transfer Pump maintenance.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

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

- 0-NSP-CW-001, “High Level Intake Canal Level Probes Inspections,”
- 2-IPT-FT-RC-P-444, “Pressurizer Pressure Control Loop RC-P-444 Functional Test,”
- 2-IPT-FT-RC-P-445, “Pressurizer Pressure Control Loop RC-P-445 Functional Test,”
- 0-OSP-AAC-001, “Quarterly Test of 0-AAC-DG-0M, Alternate AC Diesel Generator,” and
- 1-IPT-FT-RP-SI-001B, “Functional Test of Train B Safeguards Logic Actuations.”

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP2 Alert Notification System Testing

a. Inspection Scope

The inspectors reviewed the testing program for the alert and notification system (ANS), which comprised 65 pole mounted sirens within the ten-mile emergency planning zone. The testing program involved bimonthly polling tests and the quarterly full cycle tests.

The inspectors also reviewed maintenance records to ascertain the effectiveness and timeliness of repairs when siren problems were identified.

b. Findings

No findings of significance were identified.

1EP3 Emergency Response Organization Augmentation Testing

a. Inspection Scope

The inspectors reviewed the documentation supporting the maintenance and testing of the licensee's emergency response organization augmentation system. The results of the May 23, 2002, call-out drill were reviewed.

b. Findings

No findings of significance were identified.

1EP4 Emergency Action Level and Emergency Plan Changes

a. Inspection Scope

The inspectors reviewed changes to the Emergency Plan and the emergency action levels (EALs) to determine whether any of the changes decreased the effectiveness of the Emergency Plan. The current Surry Power Station Emergency Plan was Revision 45 with a March 14, 2002, effective date. The review was performed against 10 CFR 50.54q.

b. Findings

No findings of significance were identified.

1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies

a. Inspection Scope

The inspectors evaluated the efficacy of licensee programs that addressed weaknesses and deficiencies in emergency preparedness. Items reviewed included exercise and drill critique reports, nuclear oversight audit reports, and documentation addressing the Notification of Unusual Event declared on October 17, 2001.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation

a. Inspection Scope

The inspectors observed a simulator based training evolution to verify that proper emergency plan notifications (in accordance with EPIP-2.01, “Notification of State and Local Governments” were made.

The inspectors observed an additional simulator based training evolution to verify that proper emergency plan classifications (in accordance with EPIP-1.01, “Emergency Manager Controlling Procedure” were made.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstones: Public Radiation Safety

2OS1 Access Controls To Radiologically Significant Areas

.1 Independent Spent Fuel Storage Installation (ISFSI)

a. Inspection Scope

Access controls and surveillance results for the licensee’s ISFSI activities were evaluated. The evaluation included review of ISFSI radiation control surveillance procedures and assessment of ISFSI radiological surveillance data. The inspectors toured the ISFSI facilities and observed access controls, thermoluminescence dosimeter (TLD) locations and condition, and radiological postings on the perimeter security fence. The inspectors conducted independent radiation surveys of the Pad 1 cask and Pad 2 general area and compared the data with licensee survey results. The inspectors observed completion of a licensee follow-up perimeter fence radiation survey to confirm that previous radiation surveillance results were as low as documented. Results of a licensee audit associated with ISFSI program activities were reviewed and evaluated in detail.

Program guidance, access controls, postings, equipment material condition and surveillance data results were reviewed against details documented in applicable sections of the Updated Final Safety Analysis Report (UFSAR), Technical Specifications (TS); 10 CFR Parts 20 and 72, and applicable licensee procedures. Licensee guidance documents, records, and data reviewed within this inspection area are listed in Section 2OS3 of the Attachment to this report.

b. Findings

No findings of significance were identified.

2OS3 Radiation Monitoring Instrumentation

.1 Radiation Monitors

a. Inspection Scope

During the inspection, the operability, availability, and reliability of selected area radiation monitor (ARM) and continuous air monitor (CAM) equipment used for routine and accident monitoring activities were reviewed and evaluated. The inspectors observed material condition, installed configurations (where accessible), and results of performance checks for selected ARMs and CAMs. The monitors which were inspected are listed in Section 2OS3 of the Attachment to this report.

Program guidance, performance activities, and equipment material condition for the direct radiation detection instrumentation and continuous air sampling equipment were reviewed against details documented in TS, 10 CFR Parts 20 and 50, UFSAR Chapter 11, and applicable procedures. Radiation detection and sampling equipment required for use in accident monitoring were also reviewed against applicable sections of NUREG-0737, "Clarification of TMI Action Plan Requirements;" and Regulatory Guide (RG) 1.97, "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant and Environs Conditions During and Following an Accident," Revision 3. Licensee guidance documents, records, and data reviewed within this inspection area are listed in Section 2OS3 of the Attachment to this report.

b. Findings

No findings of significance were identified.

.2 Personnel Survey Instrumentation

a. Inspection Scope

Current program guidance, including calibration and operation procedures, and its implementation to maintain operability and accuracy of selected portable survey instruments was reviewed and evaluated. The inspectors reviewed current calibration data for selected personnel survey instruments and assessed operability of various portable survey instruments staged or in use by the Health Physics (HP) staff. Responsible staff's knowledge and proficiency regarding portable survey instrumentation calibration activities were evaluated through interviews, record reviews, and direct observation of daily performance checks of a Model RO-2A portable survey instrument and a Teletector Model 6112B. The accuracy and operability determinations for instrumentation used to perform surveys in high radiation or greater areas were assessed.

Operability and analysis capabilities of the Personnel Contamination Monitor (PCM)-1C equipment and portal monitor (PM)-7 employed for surveys of individuals exiting the radiologically controlled area (RCA) were evaluated. The inspectors examined current calibration and selected performance check data, and directly observed daily functional checks of one of each of the monitors.

Licensee activities associated with personnel radiation monitoring instrumentation were reviewed against TS, 10 CFR 20.1501, and applicable licensee procedures listed in Section 2OS3 of the Attachment to this report.

b. Findings

No findings of significance were identified.

.3 Respiratory Protection - Self-Contained Breathing Apparatus (SCBA)

a. Inspection Scope

The licensee's respiratory protection program guidance and its implementation for SCBA equipment use were evaluated. The SCBA units staged for Control Room emergency use were inspected for material condition, air pressure, and number of units available. The inspectors reviewed and evaluated current records associated with supplied air quality and maintenance of SCBA equipment. Proficiency and knowledge of staff responsible for maintaining SCBA equipment were evaluated through discussions and demonstration of an SCBA monthly functional test. Control Room operations personnel were interviewed to determine their knowledge of available SCBA equipment locations, proper use, and availability of prescription lens inserts, if required.

Licensee activities associated with maintenance and use of SCBA equipment were reviewed against TS; 10 CFR Part 20.1703; UFSAR Chapter 11; Emergency Plan commitments; RG 8.15, "Acceptable Programs for Respiratory Protection," Rev. 1, October 1999; ANSI-Z88.2-1992, "American National Standard Practices for Respiratory Protection;" and applicable procedures listed in Section 2OS3 of the Attachment to this report.

b. Findings

An unresolved item (URI) was identified associated with the adequacy of procedures for the SCBA training program in that all designated users were not required to demonstrate proficiency in changing SCBA air cylinders or backpacks.

The inspectors determined, through interviews with Control Room personnel and training supervisors, that not all Control Room staff were required to demonstrate proficiency in changing SCBA air cylinders or backpacks. Specific hands-on training in this area was provided to personnel trained for the Fire Brigade, which did not include Senior Reactor Operators. Interviews with Control Room staff regarding replacement air during an emergency yielded inconsistent responses on bottle and/or pack replacement.

10 CFR Part 20.1703(c)(4)(ii) requires the licensee to implement and maintain a respiratory protection program that includes written procedures regarding training of respirator users. Pending review by the NRC, the adequacy of the licensee's training program to demonstrate proficiency in changing SCBA air cylinders is identified as an unresolved item (URI) 50-280, 281/02003-01. This issue has been entered into the licensee's corrective action program as Plant Issue S-2002-2768.

.4 Problem Identification and Resolution

a. Inspection Scope

Selected licensee plant issue documents associated with ARMs and CAMs, portable radiation detection instrumentation, and respiratory protection program activities were reviewed and assessed. The inspectors evaluated the licensee's ability to identify, characterize, prioritize, and resolve the identified issues. Specific documents reviewed and evaluated are listed in Section 2OS3 of the Attachment to this report.

b. Findings

No findings of significance were identified.

Cornerstone: Public Radiation Safety

2PS1 Radioactive Gaseous and Liquid Effluent Monitoring Systems

.1 Radioactive Effluent Treatment and Monitoring Systems

a. Inspection Scope

The licensee's Radioactive Effluent Release Report for Calendar Year (CY) 2001 was reviewed and discussed. Report format, the radionuclides and quantities released in liquid and gaseous effluents, and resultant doses to the public were evaluated against applicable regulations. The inspectors reviewed the recent changes to the Offsite Dose Calculation Manual (ODCM) and evaluated whether those changes were technically justified and consistent with the regulatory guidance.

The inspectors toured the Surry Radwaste Facility (SRF) and assessed major radioactive effluent process and monitoring equipment against descriptions documented in the UFSAR and the ODCM. The material condition and operability of SRF liquid effluent monitor (RM-RRM-131) and the SRF ventilation stack gaseous effluent monitor (RRM-101) were evaluated. Compensatory sampling and analyses for three randomly selected effluent monitors which were out-of-service at various times during the previous twelve months were assessed. The monitors selected and periods of inoperability were: 1-SW-RI-120 discharge tunnel service water (7/4-6/02), RR-RRM-101 SRF vent stack noble gas monitor (6/28-7/2/02), and 2-SW-RM-220 circulation water discharge monitor (2/21-26/02). The inspectors reviewed the most recent calibration data for three effluent monitors, a gaseous effluent sample flow rate monitor, and one gamma spectroscopic instrument in the count room. Results of inter-laboratory comparisons made during the third quarter 2001 and the first quarter of 2002 for samples typical of plant effluents were reviewed and evaluated. On August 21, 2002, the inspectors observed sampling and analysis of ventilation stack Number 2 gaseous effluents in accordance with release permit No. 20255.003.035.G. The inspectors assessed adherence to procedures and to dose limits for that release.

License procedures and activities related to plant effluents were evaluated for consistency with TS; ODCM; UFSAR Chapter 11.0, "Radioactive Wastes and Radiation Protection;" 10 CFR 20.1302, 10 CFR 50.36a, and Appendix I to 10 CFR 50; RG 1.109, "Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50, Appendix I;" RG 4.15, "Quality Assurance for Radiological Monitoring Programs (Normal Operation) - Effluent Streams and the Environment," December 1977.; and NUREG-0133. Licensee plant effluent related procedures, reports and records reviewed during the inspection are listed in Section 2PS1 of the Attachment to this report.

b. Findings

No findings of significance were identified.

.2 Problem Identification and Resolution

a. Inspection Scope

The most recent audit of the effluent monitoring program and the plant issues generated in response to the audit findings were selected for detailed evaluation and are listed in Section 2PS1 of the Attachment to this report. The inspectors assessed the licensee's ability to identify, characterize, prioritize, and resolve the identified issues.

b. Findings

No findings of significance were identified.

2PS3 Radiological Environmental Monitoring Program (REMP)

.1 Environmental Monitoring

a. Inspection Scope

During the inspection the inspectors toured selected REMP air sampling equipment and direct radiation monitoring stations. The inspectors observed licensee environmental personnel collecting monthly river water samples at the Discharge Canal and Scotland Wharf locations, and a milk sample at the Epps sample locality. In addition, the inspectors observed collection of weekly particulate and charcoal samples, and assessed material condition of air sampling and TLD monitoring equipment at the Surry Station, Hog Island Reserve, Bacon's Castle, Alliance, and Colonial Parkway locations. Calibration records for five environmental air samplers were reviewed.

The inspectors reviewed and discussed with licensee personnel the results published in the Surry Annual Radiological Environmental Operating report for CY 2001 and the land use census report for CY 2002. Recent changes in the vendor responsible for analyzing the stations's environmental samples were reviewed and discussed in detail. The

inspectors reviewed and discussed a quality assurance audit of the current vendor laboratory activities conducted by another utility and documented as an Attachment to the most recent Environmental Operating report.

The inspectors reviewed the operability of the meteorological monitoring equipment and operator access to meteorological data. Current meteorological monitoring equipment performance and calibration were reviewed with the system engineer. Licensee technicians primarily responsible for equipment maintenance and surveillance were interviewed by the inspectors concerning equipment performance, reliability and routine inspections.

REMP guidance, implementation, and results were reviewed against TS; 10 CFR Parts 20 and Appendix I to 10 CFR Part 50 design criteria requirements; UFSAR details; ODCM guidance; and applicable procedures listed in § 2PS3 of the Attachment to this report. Specific laboratory quality control activities were evaluated against RG 1.21, "Measuring, Evaluating and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials In Liquid and Gaseous Effluents from Light-Water Cooled Nuclear Power Plant," June 1974; and RG 4.15, "Quality Assurance for Radiological Monitoring Programs (Normal Operation) - Effluent Streams and the Environment" December 1977. The meteorological program implementation and activities were reviewed against 10 CFR Part 20, TS, UFSAR, ODCM, Safety Guide 23, and applicable procedures documented in Section 2PS3 of the Attachment to this report.

b. Findings

No findings of significance were identified.

.2 Unrestricted Release of Materials from the Radiologically Controlled Area (RCA)

a. Inspection Scope

The inspectors reviewed selected program procedures and observed surveys of potentially contaminated materials released from the RCA to assess the licensee's effectiveness in preventing the improper release of radioactive material for unrestricted use. The radionuclides identified within recent waste stream analyses were compared against current calibration source radionuclide types and results to evaluate the appropriateness and accuracy of release survey instrumentation. Licensee data to evaluate survey requirements for hard-to-detect radionuclides were reviewed and discussed.

The licensee practices and implementation of their monitoring activities were evaluated against 10 CFR Part 20, TS, UFSAR, and applicable procedures documented in the Section 2PS3 of the Attachment to this report.

b. Findings

No findings of significance were identified.

.3 Problem Identification and Resolution

a. Inspection Scope

The most recent audit of the effluent monitoring program and the plant issues generated in response to the audit findings were selected for detailed evaluation and are listed in Section 2PS3 of the Attachment to this report.

b. Findings

No findings of significance were identified.

3. SAFEGUARDS

Cornerstone: Physical Protection

3PP3 Response to Contingency Events

The Office of Homeland Security (OHS) developed a Homeland Security Advisory System (HSAS) to disseminate information regarding the risk of terrorist attacks. The HSAS implements five color-coded threat conditions with a description of corresponding actions at each level. NRC Regulatory Information Summary (RIS) 2002-12a, dated August 19, 2002, "NRC Threat Advisory and Protective Measures System," discusses the HSAS and provides additional information on protective measures to licensees.

a. Inspection Scope

On September 10, 2002, the NRC issued a Safeguards Advisory to reactor licensees to implement the protective measures described in RIS 2002-12a in response to the Federal government declaration of threat level "orange." Subsequently, on September 24, 2002, the OHS downgraded the national security threat condition to "yellow" and a corresponding reduction in the risk of a terrorist threat.

The inspectors interviewed licensee personnel and security staff, observed the conduct of security operations, and assessed licensee implementation of the threat level "orange" protective measures. Inspection results were communicated to the region and headquarters security staff for further evaluation.

b. Findings

No findings of significance were identified.

4 OTHER ACTIVITIES

4OA1 Performance Indicator Review

Cornerstone: Barrier Integrity

.1 "Reactor Coolant System Specific Activity" Performance Indicator

a. Inspection Scope

The inspectors performed a periodic review of the "Reactor Coolant System Specific Activity" performance indicator for Units 1 and 2. Specifically, the inspectors reviewed this performance indicator from the second quarter of 2001 through the second quarter of 2002. 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 and chemistry logs.

b. Findings

No findings of significance were identified.

Cornerstone: Initiating Events

.2 "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 third quarter of 2001 through the second quarter of 2002. Inspectors evaluated whether the performance indicator was calculated in accordance with the guidance contained in NEI 99-02. Documents reviewed included applicable monthly operating reports, licensee event reports and operator logs.

b. Findings

No findings of significance were identified.

Cornerstone: Mitigating Systems

.3 "Safety System Functional Failures" Performance Indicator

a. Inspection Scope

The inspectors performed a periodic review of the "Safety System Functional Failures" performance indicator for Units 1 and 2. Specifically, the inspectors reviewed this performance indicator from the third quarter of 2001 through the second quarter of 2002. Inspectors evaluated whether the performance indicator was calculated in accordance with the guidance contained in NEI 99-02. Documents reviewed included applicable licensee event reports and licensee corrective action system documentation.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

Licensee records were reviewed to determine whether the submitted performance indicator values (through the second quarter of 2002) were calculated in accordance with the guidance contained in Section 2.4 (Emergency Preparedness Cornerstone) of NEI 99-02.

.4 "Emergency Response Organization Drill/Exercise Performance" Performance Indicator

a. Inspection Scope

The inspector assessed the accuracy of the performance indicator for ERO drill and exercise performance (DEP) through review of a sample of drill records. The latest reported DEP performance indicator value (an aggregate of data from the past eight quarters) was 98.3 percent.

b. Findings

No findings of significance were identified.

.5 "ERO Drill Participation" Performance Indicator

a. Inspection Scope

The inspector assessed the accuracy of the performance indicator for ERO drill participation through review of the training records for the 149 individuals assigned to key positions in the ERO. The latest reported ERO drill participation performance indicator value (through the second quarter 2002) was 94.6 percent.

b. Findings

No findings of significance were identified.

.6 "Alert and Notification System Reliability" Performance Indicator

a. Inspection Scope

The inspector assessed the accuracy of the performance indicator for the ANS reliability through review of a sample of the licensee's records of siren tests conducted during the previous four quarters. The latest reported ANS reliability performance indicator value was 99.4 percent.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems

.1 Control Room Pressure Envelope Issues

a. Inspection Scope

The inspectors performed an in-depth review of the issue described in Plant Issue S-2000-1516, in accordance with inspection procedure 71152. The subject plant issue described the inoperability of the Control Room Pressure Envelope (CRPE). Specifically, while conducting a test of the CRPE, the licensee was unable to achieve the TS 3.19.A required minimum positive differential pressure of 0.05 inches of water in the CRPE with respect to adjoining areas of the auxiliary, turbine and service buildings.

During this review, the inspectors determined whether:

- identification of the problem was complete and accurate;
- the problem was identified in a timely manner;
- the licensee properly classified and prioritized resolution;
- the licensee evaluated and dispositioned operability and reportability issues;
- the licensee considered extent of condition, generic implications, common causes, and previous occurrences; and
- corrective actions were completed in a timely manner.

b. Findings

The inspectors determined that the licensee had properly identified and reported the problem. Corrective actions have been completed such that compliance with TS 3.19.A was achieved with the currently installed plant equipment. TS 3.19.A specifically requires that the Main Control Room Bottled Air System be capable of pressurizing the CRPE to a positive differential pressure of 0.05 inches of water with respect to adjoining areas of the auxiliary, turbine, and service buildings for one hour when the control room is isolated under accident conditions. The licensee initially identified the need to install additional differential pressure instruments between the CRPE and adjoining areas. This measure was to provide assurance that no additional localized low pressure areas exist within the CRPE other than those documented in LER 50-280, 281/00-002-00 and Plant Issue S-2000-1516. The licensee subsequently decided not to install additional differential pressure instruments due to an on-going NRC-industry initiative to resolve the generic issue of the validity of control room unfiltered air infiltration rates assumed by licensees in control room habitability assessments. At other facilities, it has been demonstrated that although TS required differential pressures are being met, leakage into CRPE can occur. This in-leakage was identified by performing tracer gas testing of the control room envelope. The licensee has not performed tracer gas testing, consequently, the amount of inleakage within the CRPE is currently unknown. The licensee continues to monitor this generic issue while it is being reviewed for final resolution by the NRC and the industry. No findings were identified.

.2 Loss of Power to Containment Manipulator Crane

a. Inspection Scope

The inspectors performed an in-depth review of the issues described in Plant Issues S-2002-1054 and S-2002-1057 in accordance with inspection procedure 71152. The subject plant issues described a loss of power to the manipulator crane during refueling. This was further complicated by human performance problems while subsequently tagging the crane out for repairs and returning it to service. Inspectors reviewed root cause evaluations, corrective actions and conducted interviews of personnel. During this review, the inspectors determined whether:

- identification of the problems were complete and accurate;
- the problem was identified in a timely manner;
- the licensee properly classified and prioritized resolution;
- the licensee evaluated and dispositioned operability and reportability issues;
- the licensee considered extent of condition, generic implications, common causes, and previous occurrences; and
- corrective actions were completed in a timely manner.

b. Findings

No findings of significance were identified.

4OA3 Event Follow-up

.1 (Closed) LER 50-280, 281/00-002-00: Effect of Ventilation Fans On Control Room Boundary Results in TS Violation

On June 29, 2000, with Units 1 and 2 operating at 100 percent reactor power, the licensee determined, while conducting a test of the control room pressure envelope (CRPE), the CRPE was unable to achieve the TS 3.19.A required minimum positive differential pressure of 0.05 inches of water with respect to adjoining areas of the auxiliary, turbine and service buildings. This condition resulted in a violation of TS 3.19.A. The licensee restored compliance with TS by securing ventilation systems in areas adjacent to the CRPE and removing doors within the CRPE to eliminate localized low pressure areas.

The licensee's corrective actions related to this matter are discussed in Section 4OA2.1 of this report. A licensee identified violation associated with this LER is discussed in Section 4OA7 of this report.

.2 (Closed) Unresolved Item (URI) 50-280, 50-281/02002-02: Determine the risk significance of the failure to provide proper separation between the 125V DC busses. The original plant design had an electrical cross-connect installed between the two 125V DC busses. A single breaker was installed in the A DC switchboard to provide

isolation between the two busses. The licensee identified, during a design basis review of the 125 VDC system, that this configuration did not meet with the design standards for separation because power from both DC busses were present in the A DC switchboard. This resulted in the potential for a single failure to affect both the A and B DC busses. This situation occurs separately on each unit's DC power system.

A regional Senior Reactor Analyst performed a Phase III Significance Determination Process for this performance deficiency. The dominant accident initiators were a fire originating in the cabinet containing both DC divisions or a fire propagating into the cabinet causing a loss of both DC divisions. Loss of DC would lead to a reactor trip and encumber normal decay heat removal systems. However, there were numerous decay heat removal capabilities available by simple operator actions such as using the auxiliary feedwater (AFW) cross-tie from the other unit's AFW system or manual closure of the affected unit's motor driven AFW pump breaker restoring that equipment to service. These features/actions reduced the risk significance of the performance deficiency to GREEN.

The failure to provide proper electrical separation had existed since the construction of the plant. Because the 125V DC system provides control power to the safety related AC breakers, this fault has the potential to affect the mitigating system's capability to respond to initiating events to prevent undesirable consequences. It was identified by the licensee and has been corrected on Unit 2, and is scheduled to be corrected on Unit 1 during the next refueling outage. This condition does not reflect a current performance deficiency.

.3 (Closed) URI 50-280, 50-281/01007-01: Adequacy of emergency diesel generator contingency plans to meet intent of Nuclear Energy Institute (NEI) 99-02 guidance and report unavailability time accurately. Inspectors had questioned the licensee's practice of not counting Emergency AC Power (EAC) Safety System Unavailability (SSU) Performance Indicator unavailability hours during the performance of monthly EDG performance tests. Specifically, inspectors questioned whether the recovery actions contained in the test procedure constituted "a few simple steps" as described by NEI 99-02. The inspectors submitted a feedback form to the Nuclear Reactor Regulation Inspection Program Branch for consideration by the Revised Oversight Process Working Group. The working group determined that because two actions of the recovery procedure required diagnosis and reaction to particular plant parameters, the recovery procedure did not meet the guidelines of NEI 99-02, and the unavailability hours should be counted during the testing of the EDG. Based on this decision, the licensee reinstated the testing hours into the EAC SSU performance indicator calculation. The licensee determined that for Unit 1, this performance indicator which had previously been green, was now white since the fourth quarter of 2001. This finding is considered to be greater than a minor issue because it caused the EAC SSU performance indicator to exceed the white threshold. Although this change caused the performance indicator to change to white, the major contribution of outage time to this performance indicator was from other previously inspected issues. In accordance with the Significance Determination Process of Reactor Inspection Findings for At-Power Situations, this finding is considered to be of very low risk significance (Green).

4OA5 Other

.1 Licensee Strike Contingency Plans (IP 92709)

a. Inspection Scope

The inspectors reviewed the content of licensee's strike contingency plans to determine if reactor operation, facility security, and fire protection were to be maintained consistent with site technical specifications and regulatory requirements in the event of a strike. Interviews were conducted with operations, maintenance, security, emergency preparedness and fire brigade personnel to determine if the minimum number of qualified personnel would be available as required for the proper operation and safety of the facility. In addition, during the initiation of the strike, a team of inspectors observed activities within the control room and plant on a 24 hour basis to assure that reactor operation, facility security and fire protection were maintained consistent with site technical specifications and regulatory requirements.

b. Findings

No findings of significance were identified.

.2 Continued Implementation of Strike Plans (IP 92711)

a. Inspection Scope

A team of inspectors continued to observe activities during the strike which began on August 2. Initially, the inspectors observed activities on a 24 hour basis, and then transitioned to a 14 hour overlapping coverage schedule. The inspectors reviewed the licensee's compliance with technical specifications and regulations as they related to reactor operation, facility security and fire protection. In addition, operations, maintenance, security, emergency preparedness and fire brigade personnel were observed to determine if the minimum number of qualified personnel were being maintained on a day to day basis as required for the proper operation and safety of the facility.

b. Findings

No findings of significance were identified.

.3 Resumption of Normal Operations After a Strike (IP 92713)

a. Inspection Scope

On August 17, the strike ended. The inspectors observed plant turnover to returning plant staff for the transition from a strike condition to normal plant operations, to ensure that previously striking personnel were qualified to resume their job functions. The inspectors also verified that returning personnel who have been out of contact with plant operation had knowledge of current plant conditions. In addition the inspectors verified that the staffing of the shift crew were consistent with the technical specifications.

b. Findings

No findings of significance were identified.

4OA6 Management Meetings

The inspectors presented the inspection results to Mr. Blount and other members of licensee's staff on October 9, 2002. 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 Violation

The following finding of very low significance (green) was identified by the licensee and is a violation of NRC requirements which meets the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as an NCV.

Technical Specification 3.19.A requires that the Main Control Room Bottled Air System be capable of pressurizing the main control room to a positive differential pressure of 0.05 inches of water with respect to adjoining areas of the auxiliary, turbine, and service buildings for one hour when the control room is isolated under accident conditions. The licensee determined, while conducting a test of the control room pressure envelope (CRPE), the CRPE was unable to achieve the TS 3.19.A required minimum positive differential pressure. This finding is of very low safety significance because it only represents a degradation of the radiological barrier function provided for the control room. This matter is further discussed in Sections 4OA2 and 4OA3 of this report. This issue was placed in the licensee's corrective action program as Plant Issue S-2000-1516.

ATTACHMENT

SUPPLEMENTARY INFORMATION

KEY POINTS OF CONTACT

Licensee

M. Adams, Manager, Engineering
R. Allen, Manager, Outage and Planning
R. Blount, Site Vice President
B. Foster, Director, Nuclear Station Safety and Licensing
D. Llewellyn, Manager, Training
R. MacManus, Manager, Nuclear Oversight
M. Small, Supervisor, Licensing
B. Stanley, Manager, Maintenance
T. Sowers, Director, Nuclear Station Operations and Maintenance
T. Steed, Manager, Radiological Protection
J. Swientoniewski, Manager, Operations

ITEMS OPENED AND CLOSED

Opened

50-280, 281/02003-01	URI	Failure of respiratory protection program to include demonstration of proficiency in changing SCBA air cylinders (Section 2OS3.3)

Opened and Closed During this Inspection

50-280, 281/02003-02	NCV	Inability to achieve the required minimum positive differential pressure within the control room pressure envelope results in violation of TS 3.19 (Section 4OA7)

Closed

50-280, 281/00-002-00	LER	Effect of Ventilation Fans On Control Room Boundary Results in TS Violation (Section 4OA3.1)
50-280, 281/02002-02	URI	Determine the risk significance of the failure to provide proper separation between the 125V DC busses (Section 4OA3.2)
50-280, 281/01007-01	URI	Adequacy of emergency diesel generator contingency plans to meet intent of Nuclear

Energy Institute (NEI) 99-02 guidance and report unavailability time accurately. (Section 4OA3.3)

LIST OF DOCUMENTS REVIEWED

Section 1R01

- Surry Power Station Procedure No. OC-21 "U1 and U2 Operations Checklist for Severe Weather," dated February 11, 2002,
- Surry Power Station Abnormal Operating Procedure No. O-AP-37.01 "Abnormal Environmental Conditions," Revision 16

Section 1R05

- Fire Strategy No. 181 , "Unit 1 Transformer Yard," dated March 31, 1992
- Fire Strategy No. 182 , "Unit 2 Transformer Yard,," dated March 31, 1992
- Fire Strategy No. 183 , "Reserve Station Transformers," dated March 31, 1992
- Surry Power Station Abnormal Operating Procedure No. O-AP-37.01 "Abnormal Environmental Conditions, Attachment 1 ," Revision 16
- Plant Issue S-2002-2322 "Inadvertent Transformer Deluge System Actuation for 1C Main Transformer"
- Plant Issue S-2002-2551 "Inadvertent Transformer Deluge System Actuation for 1C Main Transformer, System was jumpered out & Assumed Not Capable of Auto Actuation"
- Plant Issue S-1998-1334 "Fire Protection Valves," dated May 21, 1998
- Root Cause Evaluation response S-1998-1334-E2, "Fire Protection Valves"
- Root Cause Evaluation response S-1998-1334-E1, "Fire Protection System Valves"
- Plant Issue S-1992-0277 "Inadvertent Transformer Fire Protection Deluge Actuations"
- Condition Evaluation Report S-1992-0277-E1, S-1992-0277-E1 "Inadvertent Transformer Deluge System Actuations"
- OE Evaluation Response S-1992-0277-E1"Inadvertent Transformer Fire Protection Deluge Actuations"

Section 1R15

- Surry Operations Periodic Test Procedure No. O-OPT-VS-002, "Auxillary Ventilation Filter Train Test," Revision 19
- Plant Issue S-1991-0176 O&MR 374: Relay Contacts Overloaded Due to Excessive DC Inductive Loads"
- Plant Issue S-1996-0785, "Arcing on Breaker 15B6"
- Plant Issue S-2001-1305
- Plant Issue S-2002-0513, "OE 13773: Maintenance Re-test Fails to Identify Damaged Relay Contacts"
- Plant Issue S-2001-1017 "OE 13059:Electrical ARC During Performance of PMT Results in Personnel Injury Near-Miss and Equipment Damage"

Sections 1EP2 - 1EP4

Audits and Self-Assessments

- Audit Report 02-04: Emergency Preparedness, dated June 4, 2002.

- Dominion Memorandum with title Report of Declaration: Notification of Unusual Event Declared at Surry Power Station on October 17, 2001, dated November 6, 2001.
- Dominion Memorandum with title Siren System Single Point Failure Self-Assessment, dated April 10, 2002.

Emergency Plan
- Surry Power Station Emergency Plan, Revision 45, dated March 14, 2002.

Section 2OS1

Procedures, Instructions, Lesson Plans, and Manuals
- Health Physics Periodic Test, 0-HPT-ISFSI-001, Independent Spent Fuel Storage Installation (ISFSI) Radiological Surveillance, Rev. 8
- Virginia Electric and Power Surry Independent Spent Fuel Storage Installation Technical Specifications for Safety Licensee No. SNM-2501, Amendment 12
- Surry ISFSI, Final Safety Analysis Report, Amendment 15, Docket 72-2, SNM-2501 Chapter 7, Radiation Protection
- C-HP-1032.080, Controlled Area And Unrestricted Area Radiological Surveys, Rev. 3
- C-HP-1091.275, Restricted and Controlled Area Dose: Surveillance and Evaluation, Rev. 3

Radiation Monitoring Survey and Evaluation Results/Data Reviewed
- ISFSI Security Fence Survey, 04/02/02 & 06/26/02
- ISFSI Perimeter Fence Survey, 04/02/02 & 06/26/02
- ISFSI Perimeter Fence Quarterly Doses, Calender Year (CY) 2002, Quarters 1 & 2,
- ISFSI Outer Fence TLD Results CY 2001 All Quarters 2001; CY 2002 Quarters 1 and 2,
- ISFSI Storage Pad 1, 08/19/02
- Restricted and Controlled Area Dose Evaluation, 01/02/02-04/06/02
- 0-HPT-ISFSI-001, Independent Spent Fuel Storage Installation (ISFSI) Radiological Surveillance, Rev. 8, performed 10/01,02/02,03,02,04/02,and 06/02

Audits
- Audit 01-07: Radiological Protection/Chemistry, 08/16/01

Section 2OS3

Procedures, Lesson Plans, and Manuals
- Nuclear Employee Training Manual, Volume II (included section on Respiratory Protection Training), Rev. 10
- HP-1033.015, Contamination Monitoring Instrumentation Control, Rev. 8
- HPAP-1042, Radiological Respiratory Protection Program, Rev. 3
- C-HP-1042.350, Self-Contained Breathing Apparatus Use, Rev. 4
- VPAP-1902, Industrial Respiratory Protection, Rev. 5
- 0-LSP-FP-005, Loss Prevention Surveillance Procedure (Attachment 4: Main Control Room Emergency SCBA), Rev. 6
- C-HP-1033.610, Eberline Air Monitor AMS-4 Calibration and Operation, Rev. 2
- C-HP-1032.020, Radiological Survey Criteria and Scheduling, Rev. 2
- 0-AP-20.00, Main Control Room Inaccessibility, Rev. 6

Area Radiation Monitors Evaluated

- RM-RM-127/128, Unit 1 Containment High-Range Radiation Monitor, calibrated 10/22/2001
- RM-RM-227/228, Unit 2 Containment High-Range Radiation Monitor, calibrated 03/27/2002
- RMS-RM-161, Unit 1 Containment Personnel Hatch Area Monitor, calibrated 01/24/2001
- RMS-RM-261, Unit 2 Containment Personnel Hatch Area Monitor, calibrated 02/20/2002
- RM-RM-164, Unit 1 In-Core Instrument Transfer Area Monitor, calibrated 10/17/2001
- RM-RM-264, Unit 2 In-Core Instrument Transfer Area Monitor, calibrated 04/07/2002
- RRM-RE-126, Radwaste Facility HIC Storage and Handling Area Monitor, calibrated 01/30/2002
- RM-RM-138, 139, Spent Resin Handling Area Monitor, calibrated 1994 (out of service)

Continuous Air Monitors Evaluated

- AMS-4 Monitor (S/N 901) in Auxiliary Building, 13' elevation, calibrated 07/10/2002
- AMS-4 Monitor (S/N 797) in Auxiliary Building, 27' elevation, calibrated 03/19/2002

Plant Issue Documents

- S-2002-0331, Shepherd Model 89 Calibrator in a degraded condition, 02/06/2002
- S-2002-0544, Shepherd Model 89 Calibrator in an unstable condition because of an apparent electrical short, 02/26/2002
- S-2002-0715, Shepherd Model 89 Calibrator has a broken door-alignment latch, 03/11/2002
- S-2002-1129, Shepherd Model 89 Calibrator has "source exposed" indicator light malfunction, 04/02/2002
- S-2002-1776, Shepherd Model 89 Calibrator out of service because door-locking device failed, 05/12/2002
- S-2002-2203, Shepherd Model 89 Calibrator has a broken mechanical door latch, 06/22/2002
- S-2002-2768, No guidance for sustained use of SCBAs in the Control Room

Section 2PS1

Reports, Procedures, Instructions, Lesson Plans and Manuals

- Annual Radioactive Effluent Release Report - January through December 2001
- VPAP-2103S, Offsite Dose Calculation Manual, Rev. 4
- UFSAR Chapter 11.0 Radioactive Wastes and Radiation Protection
- 0-IPM-CC-RRM-LIQD-001, Radwaste Facility Liquid Effluent Monitor Calibration, Rev. 3
- 0-IPM-RM-G-001, Digital Ratemeter Model 942B Process Monitor Calibration, Rev. 6
- 1-IPT-CC-VS-F-104, Ventilation Vent Stack No. 1 Effluent Flow Calibration, Rev. 0
- HP-1033.303, Canberra Genie/CAS MCA: Calibration, Rev. 2
- HP-3030.031, Radioactive Gaseous Waste Sampling and Analysis, Rev. 10
- HP-3010.030, Radioactive Gaseous Waste Release Permit, Rev. 4

Calibration/Performance Data

- Calibration records dated 5/1/01 for RM-RRM-131 SRF liquid effluent monitor
- Calibration records dated 2/2/02 for 1-SW-RM-120 circulating water discharge line monitor
- Calibration records dated 3/3/02 for 1-VG-RM-110 vent stack 2 noble gas monitor

- Calibration records dated 8/25/01 for 1-VG-RM-104 sample flow rate monitor
- Calibration records dated 12/12/01 for gamma spectroscopic detector # 1
- Gaseous Radioactive Waste Permit 20255.003.035.G

Audit and Plant Issue Reports

- Report for Audit 01-11, dated 12/5/01, Offsite Dose Calculation Manual (ODCM), Radiological Environmental Monitoring (REM), and Environmental Protection Plan (EPP)
- S-2001-2663 Process vent and vent stack effluent radiation monitor setpoints were raised to support Unit 1 refueling activities and not returned to the lower (pre-outage) setpoints.
- S-2001-2666 The SRF liquid effluent monitor setpoint established in June of 1997 yields
- S-2001-2684 High range effluent monitors RM-VG-123 and RM-GW-122 setpoints are not established in accordance with existing guidelines.
- S-2001-2740 Gaseous release permits are not initiated and completed when quarterly test runs of the Unit 1 turbine driven auxiliary feedwater pump are performed.
- S-2001-2742 VPAP-2103S (DCCM) identifies radiation monitor for the SRF as RRM-101, an incomplete mark number.
- S-2001-2791 Effluent radiation monitor setpoints identified as unsatisfactory during a self-assessment setpoint validation were not assigned corrective action as directed by the assessment procedure HP 1091.273.
- S-2001-2800 Approved recommendations from SLA-00-04, "Assessment for the Compliance Program" were never assigned a tracking mechanism for and no evidence exists that the recommendations were implemented.

Section 2PS3

Procedures, Instructions, Lesson Plans, and Manuals

- UFSAR, Section 2.2, Meteorology and Climatology, Rev 33
- Annual Radiological Environmental Monitoring Program , January 1, 2001 to December 31, 2001
- Health Physics (HP) Procedure, HP-3051.010, Radiological Environmental Monitoring Program, Rev. 8
- C-HP-1091.274, Radiological Environmental Monitoring Program: Surveillance and Evaluation, Rev. 1
- C-HP-1091.100, Member Of The Public Dose Evaluation, Rev. 1
- Health Physics Periodic Test Procedure 0-HPS-REMP-002, Environmental Radiation Monitors, Rev.0
- Health Physics Surveillance Procedure 0-HPS-REMP-001, Land Use Census, Rev. 2, 01/29/02
- Field Log Environmental Air Sample Worksheet, 08/21/02
- Environmental Sample Log, 08/02
- Environmental Laboratory Sample Submission Forms, (Milk, Water, and Air Samples) 08/21/02
- Health Physics Technician Development Program, HPTDP-S5U2, Self -Study Module Environmental Monitoring
- Audit 01-11, Offsite Dose Calculation Manual (ODCM), Radiological Environmental Monitoring (REM), and Environmental Protection Plan (EPP), 12/05/01
- Southern California Edison Audit Report Duke Engineering and Services Environmental Laboratory-1-01, April 24, 2001

- Design Change 01-082, Improved Lightning Protection For Meteorological Towers/ Surry/ Unit 1 & 2, June 2001
- HP-1033.015, Contamination Monitoring Instrument Control, Rev 8

Instrument Calibration and Performance Data Records

- 0-ICP-MM-DP-001, Dew Point Measuring System Calibration , Rev. 2, Performed 08/11/02
- 0-ICP-MM-RG-001, Primary Meteorological Tower Precipitation Monitor Calibration, Rev 0, Performed 08/11/02
- 0-ICP-MM-TEMP-001, Primary Meteorological Tower Ambient Temperature Calibration, Rev. 2, Performed 08/11/02
- 0-ICP-MM-WSWD-001, Primary Meteorological Tower 10 Meter Wind Speed and Wind Direction Calibration, Rev. 2, Performed 08/11/02
- 0-ICP-MM-WSWD-002, Primary Meteorological Tower 48 Meter Wind Speed and Wind Direction Calibration, Rev. 02, Performed 08/09/02
- 0-ICP-MM-WSWD-003, Backup Meteorological Tower Wind Speed and Wind Direction Calibration, Rev 3, Performed 08/12/02
- CAL-92, Temperature Loop, Rev.4, Performed 08/13/02
- CAL-93, Met Tower Delta T Loop Calibration, Rev. 6, Performed 08/13/02
- CAL-133, Sigma Theta Loop, Rev. 4, Performed 08/13/02
- CAL-156, Wind Speed Backup Loop, Rev 4, Performed 08/13/02
- CAL-155, Wind Speed Lower Loop, Rev.4, Performed 08/13/02
- CAL-193, Wind Speed Upper Loop, Rev. 4, Performed 08/13/02
- CAL-194, Wind Direction Backup Loop, Rev 4, Performed 08/13/02
- CAL-195, Wind Direction Upper Loop, Rev. 4, Performed 08/13/02
- CAL-196, Wind Direction Lower Loop, Rev 4, Performed 08/13/02
- Calibration Certificate - Portable Air Sampler, Hi-Q, Serial Number (S/N) 6828, S/N 5022, S/N 4148, S/N 4146, and S/N 2185-1; conducted 07/16/02
- Contamination Monitor Performance Check Records, SAM-9, S/N 287, 05/21/02-08/20/02 S/N 288, 05/29/02-06/29/02, 06/30/02-07/31/02, & 08/01/02-08/22/02; S/N 274, 05/29/02- 06/29/02, 06/30/02-07/31/02, & 08/01/02-08/22/02
- Contamination Monitor Performance Check Record, SAM-11, S/N-149, 05/29/02-06/29/02, 06/30/02-07/31/02, & 08/01/02-08/22/02; S/N 147, 05/29/02-06/29/02, 06/30/02-07/31/02, & 08/01/02-08/22/02
- Personnel Monitoring System PM-7 Performance Check Records for S/N 467, S/N 413, S/N 401, S/N 390, S/N 336, and S/N 335; conducted 07/02 and 08/02
- Personnel Contamination Monitoring System Performance Check Record, PCM-1B, S/N 201 and S/N 203; conducted 07/02 and 08/02;
- Personnel Contamination Monitoring System Performance Check Record, PCM-1C, S/N 125, S/N128, S/N 132, S/N 133, S/N 134, S/N 1515, and S/N 1516; conducted 07/02 and 08/02