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

October 18, 2004

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

SUBJECT: SURRY POWER STATION - NRC INTEGRATED INSPECTION REPORT NOS. 5000280/2004004, AND 5000281/2004004

Dear Mr. Christian:

On September 25, 2004, the United States Nuclear Regulatory Commission (NRC) completed an inspection at your Surry Power Station, Units 1 and 2. The enclosed integrated inspection report documents the inspection findings which were discussed on October 12, 2004, with Mr. Blount and other members of your staff.

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

This report documents one NRC identified finding. The finding was determined to involve a violation of NRC requirements. However, because of the very low safety significance and because the violation was entered into your corrective action program, the NRC is treating the finding as a non-cited violation (NCV) consistent with Section VI.A of the NRC Enforcement Policy. Additionally, two licensee-identified violations which were determined to be of very low safety significance (Green) are listed in Section 4OA7 of this report. If you contest any non-cited violation in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the United States Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555-0001; with copies to the Regional Administrator, Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, D.C. 20555-0001; and the NRC Resident Inspector at the Surry Power Station.

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

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

Sincerely,

/RA/

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

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

Enclosure: Integrated Inspection Report 5000280,281/2004004 w/Attachment: Supplemental Information

cc w/encl:
Chris L. Funderburk, Director
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

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

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

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

Distribution w/encl:
S. Monarque, NRR
L. Slack, RII EICS
RIDSNRRDIPMLIPB
PUBLIC

OFFICE	RII/DRP	RII/DRP	RII/DRP	RII/DRP	RII/DRS	RII/DRS	RII/DRP
SIGNATURE	NXG	GJM1	DCA		WTL for	WTL	BBD
NAME	NGarrett	GMcCoy	DArnett	LGarner	ETesta	WLoo	BDesai
DATE	10/18/2004	10/18/2004	10/15/2004		10/14/2004	10/14/2004	10/15/2004
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO
PUBLIC DOCUMENT	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

OFFICIAL RECORD COPY DOCUMENT NAME: C:\ORPCheckout\FileNET\ML042940715.wpd

U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.: 50-280, 50-281

License Nos.: DPR-32, DPR-37

Report Nos.: 5000280/2004004, 5000281/2004004

Licensee: Virginia Electric and Power Company (VEPCO)

Facility: Surry Power Station, Units 1 & 2

Location: 5850 Hog Island Road
Surry, VA 23883

Dates: June 27 - September 25, 2004

Inspectors: N. Garrett, Senior Resident Inspector
G. McCoy, Senior Resident Inspector
D. Arnett, Resident Inspector
L. Garner, Senior Project Engineer
E. Testa, Senior Radiation Protection Inspector (Sections 2OS1and 3, 2PS1and 3, 4OA1,5,and 7)
W. Loo, Senior Radiation Protection Inspector (Sections 2OS1and 3, 2PS1and 3, 4OA1,5,and 7)

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

Enclosure

SUMMARY OF FINDINGS

IR 05000280/2004004, IR 05000281/2004004, 6/27/2004 - 9/25/2004, Virginia Electric and Power Co.; Surry Power Station Units 1 & 2, Routine Integrated Inspection.

The report covered a three month period of inspection by resident inspectors, a senior project engineer, and an announced inspection by two senior radiation protection inspectors. One Green non-cited violation (NCV) and two licensee identified violations were identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using IMC 0609, "Significance Determination Process," (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process, Revision 3, dated July 2000.

A. NRC Identified and Self-Revealing Findings

Cornerstone: Occupational Radiation Safety

- Green. The inspectors identified a violation of 10 CFR 20.1703(c)(4)(ii) which requires the licensee to implement and maintain a respiratory protection program that includes written procedures regarding training of respirator users. In addition, this was related to the emergency planning standards of 10 CFR 50.47(b) (10). Specifically, procedures were not in place to ensure that all Control Room staff had demonstrated proficiency in changing Self Contained Breathing Apparatus (SCBA) air cylinders during emergencies.

  This finding is greater than minor because emergency workers who are required to use respiratory protective equipment are not trained to use that equipment. This finding is of very low safety significance because an adequate number of SCBA qualified plant personnel/staff, which were designated emergency responders, would have been available to respond in the event of an actual emergency (Section 2OS3).

B. Licensee-Identified Violations

Two violations of very low safety significance, which were identified by the licensee have been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. These violations and corrective actions are listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

Unit 1 and Unit 2 operated at or near rated power the entire reporting period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection

.1 Hurricane Preparations

a. Inspection Scope

On July 19, 2004, early in the hurricane season, inspectors conducted a tour of all the owner-controlled area. The purpose of the tour was to evaluate the licensee's preparedness for high winds and hurricane conditions well in advance of the approach of any hurricanes. Emphasis was placed on the identification of any loose material which would become airborne hazards to either the plant or the switchyard during high winds. Inspectors toured the low level intake, the construction buildings, the sewage treatment plant, the area outside the warehouse, and the vicinity of the gas turbines at Gravel Neck.

b. Findings

No findings of significance were identified.

.2 Hurricane Charlie Preparations

a. Inspection Scope

The inspectors evaluated the implementation of the adverse weather preparation procedures and compensatory measures prior to the arrival of Hurricane Charlie. Inspectors reviewed Operations Checklist (OC) 21 "Severe Weather Checklist," Abnormal Procedure (AP) 37.01 "Abnormal Environmental Conditions," and the Dominion Hurricane Response Plan (Nuclear) (HRP-N). Inspectors assured that vital systems and components were protected from high winds and flooding associated with hurricanes. Additionally, the inspectors conducted walkdowns of the plant to check for any vulnerabilities, such as inadequate sealing of water tight penetrations, inoperable sump pumps, and other sources of potential internal and external flooding.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment

a. Inspection Scope

The inspectors performed partial walkdowns of the following systems to verify correct system alignment. The inspectors checked for correct valve and electrical power alignments by comparing positions of valves, switches, and breakers to the procedures and drawings listed in the Attachment.

- Unit 2 low head safety injection (LHSI) pump 2-SI-P-1B while LHSI pump 2-SI-P-1A was tagged out for maintenance
- Unit 1 motor driven auxiliary feedwater (MDAFW) pumps, 1-FW-P-3A and -3B while the turbine drive auxiliary feedwater (TDAFW) pump, 1-FW-P-2 was tagged out for a modification and maintenance
- Unit 2 MDAFW pumps, 2-FW-P-3A and -3B while the TDAFW pump, 2-FW-P-2 was tagged out for a modification and maintenance
- Number 2 emergency diesel generator (EDG) and number 3 EDG, 2-EE-EG-1 and 3-EE-EG-1 while number 1, EDG, 1-EE-EG-1 was tagged out for planned maintenance.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

.1 Fire Area Walkdowns

a. Inspection Scope

The inspectors toured eight risk significant areas to assess the adequacy of the fire protection program implementation. The inspectors checked for the control of transient combustibles and assessed the condition of the fire detection and fire suppression systems using “SPS Appendix R Report.” In addition, the inspectors reviewed 0-FS-FP-116, “Loss Prevention Strategy” to verify the necessary fire fighting equipment was in place for the following areas:

- Black battery house
- Mechanical equipment room (MER) # 3
- MER # 5
- Fuel building
- Unit 1 safeguards
- MER # 1
- Number 3 EDG room
- Main control room

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures

a. Inspection Scope

The inspectors reviewed the Updated Final Safety Analysis Report (UFSAR) and the Individual Plant Examination of Non-Seismic External Events and Fires for analyzed external and internal flooding events. Walkdowns were performed of the turbine building internal and external walls to review compliance with external flooding. To review internal flooding preparation, the inspectors reviewed licensee procedure 0-MPM-1900-01, "Periodic Inspection of Flood and Spill Protection Dikes, Dams, and Expansion Joint Shields." In addition, the inspectors walked down various expansion joint throttle shields in the turbine building and flood and spill control dams in the turbine and service building. The inspectors compared observed equipment condition and documented system deficiencies to determine system readiness for prevention of internal flooding. The inspectors reviewed completed preventative maintenance and surveillance records for the turbine building sump pump testing, station flood detection testing equipment, and floor drain back water stop valve replacement. The documents reviewed are listed in the Attachment of the report.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance

a. Inspection Scope

The inspectors evaluated the condition of the Unit 1 component cooling (CC) heat exchangers, 1-CC-E-1A. The inspectors discussed the heat exchanger performance monitoring program and historical heat exchanger performance with engineering personnel. The inspectors reviewed the results of surveillance procedure 1-OSP-SW-002, "Measurement of Macrofouling Blockage of Component Cooling Heat Exchanger 1-CC-E-1A." The inspector observed the condition of the 1A heat exchanger before and after performance of tube scraping. The documents reviewed are listed in the Attachment of the report.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program

a. Inspection Scope

The inspectors observed licensed operator performance during simulator training session RQ-04.6-SP-1:PMS to determine whether the operators:

- were familiar with and could successfully implement the procedures associated with recognizing and recovering from a ruptured and faulted steam generator with loss of unit 1 power;
- recognized the high-risk actions in those procedures; and,
- were familiar with related industry operating experiences.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

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

- Component Cooling Chillers and
- Charging Pump Service Water

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors reviewed the following six Plan of the Day (POD) documents listed below to verify the adequacy, accuracy, and completeness of plant risk assessments performed prior to changes in plant configuration for maintenance activities or in response to emergent conditions. When applicable, inspectors assessed if the licensee

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

- POD for Week of 6/27 - 7/2, including failure of 1EP-BC-UPS-1A2
- POD for Week of 7/24 - 30, including failure of 1-EE-P-1D, Unit 1 EDG fuel oil transfer pump
- POD for Week of 8/21-27, including extended outage time for 1-EE-EG-1, Unit 1 EDG
- POD for Week 8/28 - 9/3
- POD for Week 9/4 - 10
- POD for Week 9/18 - 24, including declaration of main control room and auxiliary building systems emergency ventilation out of service

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

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

- Plant Issue S-2004-2531, During quarterly performance test, number 2 EDG speed could not be reduced below 935 rpm.
- Plant Issue S-2004-2575, During leak test, 1-VS-FL-3B, charcoal filters failed to prevent minimum bypass leakrate.
- Plant Issue S-2004-2821, During monthly run, 1-SW-P-1B, emergency service water pump (ESW) developed a coolant leak between the support plate and the engine.
- Plant Issue S-2004-2938, After receiving an annunciator, it was discovered that the unit 2 uninteruptable power supply had switched to its alternate power supply for an unknown reason.
- Plant Issue S-2004-2935, 1-VS-E-4D, main control room chiller tripped due to a condenser leak.

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testing

a. Inspection Scope

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

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

- Work Order (WO) 513031-02, Inspect and repair 1-CH-P-1C motor leads,
- WO 515181-01, Replacement of Unit 1 plant protection relay PRB-YB,
- WO 515598-01, Coolant leak found on 'B' ESW Pump
- WO 517518-02 thru -07, Adjust relays for 1-EE-EG-1, Unit 1 EDG start sequence
- WO 517385-01, Damper failed to close during 0-OPT-VS-007

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

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

Surveillance Tests
- 0-NSP-CW-001, High Level Intake Structure Canal Probes Inspection
- 0-OP-4.2, Receipt and Storage of New Fuel
- 1-OPT-RX-006, Rod Position Verification Using the Incore Flux Mapping System
- 1-OPT-EG-008, Number 1 Emergency Diesel Generator Starting Sequence Test

In-Service Test
- 0-OPT-EG-001, Number 3 Emergency Diesel Generator Monthly Start Exercise Test
- 2-OPT-CH-003, Charging Pump Operability and Performance Test for 2-CH-P-1C

Reactor Coolant Leakage Test
- 1-OPT-RC-10.0, Reactor Leakage - Computer Calculated

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation

a. Inspection Scope

The inspectors observed an unannounced emergency response training drill conducted on August 25, 2004, to assess the licensee's performance in emergency classification, notification, and protective action recommendation development. This drill included the response actions taken by the shift operating crew in the simulator as well as the management team in the Technical Support Center and Emergency Operations Facility. This drill evaluation will contribute to the Emergency Response Performance Indicator statistics.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety Public Radiation Safety (PS)

2OS1 Access Controls To Radiologically Significant Areas

a. Inspection Scope

Access Controls

During the inspection the licensee's program activities for monitoring workers and controlling their access to radiologically significant areas and tasks were evaluated. The inspectors evaluated the adequacy of procedural guidance, directly observed implementation of administrative and physical controls, and assessed resultant worker exposures to radiation and radioactive material.

The inspectors evaluated the licensee's procedures for posting, surveying, and controlling access to radiation areas, high radiation areas, and very high radiation areas, against the requirements of 10 CFR Part 20. During tours conducted June 7-9, 2004, the inspectors evaluated radiological postings and barricades against the current radiological surveys in areas of the auxiliary buildings to determine the appropriateness of the established radiological controls. In addition, the inspectors independently verified the dose rates recorded on current survey maps at various locations in plant areas. General area dose rates were compared to licensee survey records. The inspectors observed HP technician proficiency in performing and documenting the radiation surveys for observed activities.

Access controls for locked high radiation areas were reviewed and discussed with radiation protection management and supervision. The inspectors directly inspected the licensee's designated locked doors locations and reviewed documentation to verify the

condition and status of the locked doors. The inspectors also evaluated implementation of key controls and postings for very high radiation areas (VHRAs) and locked high radiation areas.

The inspectors observed radiological significant work areas within radiation areas and high radiation areas as well as the spent fuel pool storage area. The licensee's physical and program controls for highly activated or contaminated materials (non-fuel) stored within the spent fuel pool were also reviewed with licensee representatives. The inspectors conducted independent radiological surveys of selected plant areas and compared the results to the licensee's surveys. Radiological postings and barricade requirements were evaluated for the observed areas.

The inspectors reviewed the extent of airborne radiological hazards and associated controls. Airborne radiological areas and resulting internal exposures since the last NRC inspection were reviewed with the licensee's technical staff. During observation of selected tasks, the use of engineering controls to minimize airborne radioactivity was evaluated

Radiation Protection (RP) program activities and their implementation were evaluated against 10 CFR 19.12; 10 CFR Part 20; the Updated Final Safety Analysis Report (UFSAR) details in Section 12, RP; Technical Specification (TS), Section 6.4; and approved licensee procedures. Licensee documents, records, and data reviewed within this inspection area are listed in Section 2OS1 of the report Attachment.

Problem Identification and Resolution

Issues identified through RP departmental self-assessments and Corrective Action Program (CAP) documents associated with radiological controls, personnel monitoring, and exposure assessments were reviewed and discussed with cognizant licensee representatives. The inspectors assessed the licensee's ability to resolve the issues identified in this RP program area. Specific assessments and Plant Issue documents reviewed and evaluated in detail for this inspection area are identified in Section 2OS1 of the report Attachment.

b. Findings

No findings of significance were identified.

2OS3 Radiation Monitoring Instrumentation and Protective Equipment

a. Inspection Scope

Radiation Monitoring

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 report Attachment.

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 also were 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 (Rev.) 3. Licensee guidance documents, records, and data reviewed within this inspection area are listed in Section 2OS3 of the report Attachment.

Personnel Survey Instrumentation

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 report Attachment.

Respiratory Protection - Self-Contained Breathing Apparatus (SCBA)

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. Cognizant 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 report Attachment.

Problem Identification and Resolution

Selected licensee PI 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 report Attachment.

b. Findings

(Closed) URI 50-280, 281/2002003-01: Adequacy of procedures for the self-contained breathing apparatus (SCBA) training program in that all designated users were not required to demonstrate proficiency in changing SCBA air cylinders or backpacks.

Introduction. A Green NCV of 10 CFR 20.1703(e) was identified for the failure to establish and implement adequate written procedures to train emergency workers on respiratory protective equipment. This finding is also related to the emergency planning standards of 10 CFR 50.47(b)(10). Specifically, the licensee's written and implemented SCBA training program was incomplete in that it did not assure that all Control Room staff demonstrate proficiency in the change out SCBA air cylinders during emergencies.

Description.

During the previous inspection in this program area (NRC Inspection Report 050-280, 281/2002003) the inspectors determined, through interviews with select Control Room personnel and training supervisors, that not all Control Room staff were required to demonstrate proficiency in the change out of SCBA air cylinders or backpacks. Specific hands-on training in this area was provided to personnel trained for Fire Brigade, which did not include all Senior Reactor Operators. Interviews with Control Room staff regarding changing out air cylinders during an emergency yielded inconsistent responses on bottle and/or pack replacement. This issue was entered into the licensee's Corrective Action Program (CAP) as Plant Issue S-2002-2768.

Analysis. During this inspection the inspectors determined that the licensee's training in the use of SCBAs did not require instruction of all SCBA qualified personnel, e.g., Senior Reactor Operators who were not fire brigade members, to demonstrate proficiency in the change out of SCBA air cylinders during emergencies. From a review of select training records and discussions with cognizant licensee training and Control Room representatives, the inspectors determined that the licensee had implemented several training program changes to ensure that all worker disciplines with emergency response workers demonstrate the change out of SCBA air cylinders. The licensee's continuing training program specifically included hand's on training that individuals demonstrate proficiency in the change out of SCBA air cylinders. This finding is greater than minor because emergency workers who are required to use respiratory protective equipment are not trained to use that equipment. This finding is of very low safety

significance because an adequate number of SCBA qualified plant personnel/staff, which were designated emergency responders, would have been available to respond in the event of an actual emergency. Therefore, the issue did not result in the failure to meet a planning standard.

Enforcement. 10 CFR 20.1703(c)(4)(ii) requires that the licensee implement and maintain a respiratory protection program that includes written procedures regarding training of respirator users. Contrary to the above, as of August 19, 2002, the licensee had not established and implemented adequate written procedures for training respirator users. Specifically, the licensee's written and implemented SCBA training program was incomplete in that it did not assure that all designated SCBA users were required to demonstrate proficiency in the change out of SCBA air cylinders. Because the failure to train all Control Room staff in the use of respiratory protective equipment is of very low safety significance and was entered into the CAP (Plant Issue S-2002-2768), this violation is being treated as an NCV consistent with Section IV.A.1 of the NRC Enforcement Policy: NCV 05000280, 281/2004004-001: Failure to Implement and Maintain a Respiratory Protection Program That Includes Written Procedures Regarding Training of Respirator Users in Demonstrating Proficiency in the Change Out of SCBA Air Cylinders.

2PS1 Radioactive Gaseous and Liquid Effluent Monitoring Systems

a. Inspection Scope

Radioactive Effluent Treatment and Monitoring Systems

The licensee's Radioactive Effluent Release Report for Calendar Years (CY) 2002 and 2003 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 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 select SRF liquid effluent monitors and ventilation stack gaseous effluent monitors 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 inspectors reviewed the most recent calibration data for select effluent monitors, a gaseous effluent sample flow rate monitor, and one gamma spectroscopic instrument in the count room. Results of inter-laboratory comparisons for calendar years 2002 and 2003 for samples typical of plant effluents were reviewed and evaluated. During the inspection, the inspectors observed sampling and analysis of select ventilation stack gaseous effluents in accordance with licensee release permit. 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 report Attachment.

Problem Identification and Resolution

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 report Attachment. 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)

a. Inspection Scope

Environmental Monitoring

The inspectors toured selected REMP air sampling equipment and direct radiation monitoring stations. Inspectors observed verification/collection of eight weekly particulate and charcoal samples, and assessed material condition of air sampling monitoring equipment. The inspectors verified the location of forty three (43) thermoluminescence dosimeter (TLD) locations including three control locations. Calibration records for 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 CYs 2002 and 2003 and the land use census report for CY 2003. 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 Section 2PS3 of the Attachment to

this report. Specific laboratory QC 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 report Attachment.

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

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 with responsible personnel.

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 report Attachment.

Problem Identification and Resolution

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 report Attachment.

b. Findings

No findings of significance were identified.

4 OTHER ACTIVITIES

4OA1 Performance Indicator Verification

.1 "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 2003 through the second quarter of 2004. Inspectors evaluated whether the performance indicator was calculated in accordance with the guidance contained in NEI 99-02, "Regulatory

Assessment Performance Indicator Guideline." Documents reviewed included applicable monthly operating reports, licensee event reports, and operator logs.

b. Findings

No findings of significance were identified.

.2 "Safety System Functional Failure" Performance Indicator

a. Inspection Scope

The inspectors performed a periodic review of the "Safety System Functional Failure" performance indicator for Units 1 and 2. Specifically, the inspectors reviewed this performance indicator from the third quarter of 2003 through the second quarter of 2004. Inspectors evaluated whether the performance indicator was calculated in accordance with the guidance contained in NEI 99-02, "Regulatory Assessment Performance Indicator Guideline." Documents reviewed included applicable monthly operating reports, licensee event reports and operator logs.

b. Findings

No findings of significance were identified.

.3 "Scrams with Loss of Normal Heat Removal" Performance Indicator

a. Inspection Scope

The inspectors performed a periodic review of the "Scrams with Loss of Normal Heat Removal" performance indicator for Units 1 and 2. Specifically, the inspectors reviewed this performance indicator from the third quarter of 2003 through the second quarter of 2004. Inspectors evaluated whether the performance indicator was calculated in accordance with the guidance contained in NEI 99-02, "Regulatory Assessment Performance Indicator Guideline." Documents reviewed included applicable monthly operating reports, licensee event reports, Integrated inspection reports and operator logs.

b. Findings

No findings of significance were identified.

.4 Occupational Exposure Control Effectiveness

a. Inspection Scope

The inspectors sampled licensee submittals for the Occupational Exposure Control Effectiveness PI for the period from December 2003 through August 2004. To verify the accuracy of the PI data reported during that period, PI definitions and guidance contained in NEI 99-02, Regulatory Assessment Performance Indicator Guideline, Rev. 2, were used to verify the basis in reporting for each data element.

The inspectors reviewed Plant Issue records generated from December 2003 through August 2004 to ensure that radiological occurrences were properly classified per NEI 99-02. The inspectors also reviewed electronic dosimeter alarm logs, radioactive material intake records, and monthly PI reports for CY 2004. In addition, licensee procedural guidance for classifying and reporting PI events was evaluated. Reviewed documents are listed in Section 4OA1 of the report Attachment.

b. Findings

No findings of significance were identified.

.5 RETS/ODCM Radiological Effluents Occurrence

a. Inspection Scope

The inspectors reviewed records used by the licensee to identify occurrences of quarterly doses from liquid and gaseous effluents in excess of the values specified in NEI 99-02 guidance. Those records included monthly effluent dose calculations for CY 2004. The inspectors also interviewed licensee personnel that were responsible for collecting and reporting the PI data. In addition, licensee procedural guidance for classifying and reporting PI events was evaluated. Reviewed documents are listed in Section 4OA5 of the report Attachment.

b. Findings

No findings of significance were identified.

4OA2 Problem Identification and Resolution

.1 Daily Review of Plant Issues

a. Inspection Scope

As required by Inspection Procedure 71152, “Identification and Resolution of Problems”, and in order to help identify repetitive equipment failures or specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the licensee’s corrective action program. This review was accomplished by a daily review of hard copies of each plant issue and attending the daily Plant Issue Review Team meeting.

b. Findings

No findings of significance were identified.

.2 Detailed Review of Individual Issues

a. Inspection Scope

The inspectors performed an in-depth review of the failure of a power cable termination for the 1G transformer in March 2004 and the 2G transformer in May 2004. The issues are documented in the corrective action program as Plant Issues S-2004-0876 and S-2004-2306 respectively. The review was performed to ensure the full extent of the issue was identified, an appropriate evaluation was performed, and appropriate corrective actions were specified and prioritized. The inspectors evaluated the plant issues against the requirements of the licensee's corrective action program as delineated in Station Administrative Procedure VPAP-1601, "Corrective Action," and 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action."

b. Findings and Observations

No findings of regulatory significance were identified. The licensee performed an apparent cause and a maintenance rule evaluation for each loss of the 1G and 2G bus. In March 2004, one termination to the 1G transformer failed. The transformer was supplied 4160 volts by a combination of underground and overhead lines from the main switchyard to the low level intake area. The termination that failed had been in service since 1994. The 1G failure root cause was determined to be workmanship in that the assembly documents were not followed correctly. The corrective action consisted of repairing the failed connector and writing a work order to remake the remaining five terminations. In May 2004, a terminator on the 2G line to the low level area failed. This was a new underground line installed to protect the low level intake power supply from severe weather and animals. The 2G line had been in service approximately 20 hours when failure occurred. The licensee determined the root cause was workmanship in that the assembly documents were not followed correctly. The corrective actions specified were to repair the failed connector and develop and implement a special procedure to return the power supply to service. The 2G apparent cause did not address the need for a plant procedure for assembly of the terminations, however, the maintenance rule evaluation included an assignment to develop a procedure with appropriate inspection points. The 2G failure occurred within three months of the 1G failure with the same root cause. The licensee did not view this as repetitive and did not address corrective actions to prevent workmanship issues in the apparent cause corrective actions. This is a Minor Finding that does not have regulatory significance. The 1G and 2G transformers are non-safety related. The loss of the 1G or 2G transformer is a transient initiator and the transformers are included in the maintenance rule. Due to the unique design of the Surry intake canal the loss of one transformer does not have an immediate impact on decay heat removal.

c. Findings

No findings of significance were identified.

4OA3 Event Follow-up

.1 (Closed) LER 05000281/2003001-00, Electrical Conduit Bushing Failure Resulting in a Reactor Trip.

A Unit 2 reactor trip and resulting engineering safety feature activations on Unit 1 and 2 were attributed to a failed insulating conduit busing connection. The failed bushing allowed damage to the Unit 2 main generator protective circuitry wiring which resulted in the protective circuit actuating. The inspectors reviewed the licensee root cause evaluation S-2003-03599 and corrective action taken and planned to be taken. The root cause evaluation properly identified the root and contributing causes to be the bushing failure and the corrective actions should be sufficient to preclude a similar event on either Unit 1 or 2.

.2 (Closed) LER 05000280/2003002-00, Manual Steam Generator Level Control Results in Power Ascension Reactor Trip.

The supplement LER 05000280/2003002-10 inspection activity documented in NRC Supplemental Inspection Report No. 05000280/2004009 sufficiently addressed the original LER.

.3 (Closed) LERs 05000280, 281/2003004-00 and 05000280, 281/2003004-01, Manual Reactor Trips due to Loss of All Circulating Water Pumps.

These LERs are associated with the manual trip of both units due to the loss of all circulating water pumps during Hurricane Isabel. The LERs also report the automatic safety feature actuations that occurred as a result of the trips. The inspectors reviewed Plant Issue S-2003-4165 and associated documents which document the events, response of plant equipment, root and contributing cause evaluation results and corrective actions. NRC Supplemental Inspection Report No. 05000280/2004009 concluded that the planned actions for loss of power to the circulating water pumps was appropriate. During the inspection, the inspectors verified that the licensee had completed actions to install underground power cables to the transformers which supplied power to the pumps. The inspectors also reviewed the licensee evaluation concerning tripping of two of the emergency service water pumps during the event. The inspectors agreed with the licencee's cause determinations and actions taken to prevent similar emergency service water pump trips in the future.

.4 (Closed) Apparent Violation (AV) 05000280, 281/2003008-002: Alternative Shutdown Capability and Response Procedures Not Adequate to Ensure Safe Shutdown of Unit 1 and URI 05000281/2003008-001: Fire Response Procedures 2-FCA-4.00 And 0-FCA-14.00 Not Adequate To Ensure Safe Shutdown Of Unit 2

The Final Significance Determination associated with the AV and the URI was issued in a letter dated September 15, 2004. This issue regarding Surry fire response procedures that were not effective in ensuring a safe shutdown of a unit following postulated fires was determined to be a White finding and will be tracked as VIO 05000280, 281/2004008-001, Alternative Shutdown Capability and Response Procedures Not Adequate to Ensure Safe Shutdown.

4OA5 Other Activities

.1 (Closed) NRC Temporary Instruction (TI) 2515/156, Offsite Power System Operational Readiness

The inspectors have completed all onsite inspection as documented in NRC inspection report 05000280,281/2004003, paragraph 4OA5.4. Consequently, based on completion of the onsite review, this TI is closed. All further inspection related activities will originate with NRC headquarters staff.

.2 Independent Spent Fuel Storage Installations

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, 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.

Program guidance, access controls, postings, equipment material condition and surveillance data results were reviewed against details documented in applicable sections of the UFSAR, 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 4OA5 of the report Attachment.

b. Findings

No findings of significance were identified.

4OA6 Meetings, Including Exit

.1 Exit Meeting Summary

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

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

4OA7 Licensee-Identified Violations

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

- Technical Specification 6.4.B requires that procedures for personnel radiation protection shall be prepared consistent with the requirements of 10 CFR Part 20

and shall be approved, maintained and adhered to for all operations involving personnel radiation exposure. Section 6.2.2, titled “Plant Access Training” to Procedure VPAP-2101 titled “Radiation Protection Program”,states, in part, that individuals who have completed only Plant Access Training shall not be allowed unescorted access into an RCA unless Access Authorization to RCA for Visitors/Non-Radiation Worker is completed and shall not perform any physical work in the RCA. Furthermore, Section 6.8.1 titled “Supervision and Monitoring of Radiological Work” to Procedure VPAP-2101, states, in part, that foremen shall ensure that each worker is qualified to perform required task and have appropriate training and experience. Contrary to the above, an individual gained unescorted access to the RCA without an Access Authorization to the RCA for a Visitor/ Non-Radiation worker and was allowed to performed work in the RCA. This was identified in Plant Issue S-2003-5018. This finding is of very low safety significance because the individual was assigned to conduct such activities in the RCA with other experienced, trained and currently qualified Basic Radiation Workers and under the supervision of a foreman.

- 10 CFR 71.5(a) requires, in part, that a licensee who transport licensed material outside of the confines of its plant or delivers licensed material to a carrier for transport comply with the applicable requirements of the regulations appropriate to the mode of transport of the Department of Transportation (DOT) in 49 CFR Parts 170 through 189. 49 CFR 173.471(a) requires, in part, that the offeror of a Type B package make the shipment in compliance with the terms of the packaging approval. Section 7.1.6 of Certificate of Compliance No. 9168, Revision 12, dated June 25, 2001, states, in part, when seals are replaced, leak testing is required as specified in Section 8.2.2.2 titled “Assembly Verification Leak Test”. Contrary to this, the licensee did not leak test a secondary lid seal before shipping Shipment No. B2001-2 on June 28, 2001. This was identified in Plant Issue S-2001-1863-E1. This finding is of very low safety significance because the package did not have any indications of leakage upon receipt at the burial site.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

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

NRC

K. Landis, Chief, Branch 5, Division of Reactor Projects, Region II

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000280, 281/2004004-001	NCV	Failure to implement and maintain a respiratory protection program that includes written procedures regarding training of respirator users in demonstrating proficiency in the change out of SCBA air cylinders (Section 2OS3.b)

Closed

05000281/2003001-00	LER	Electrical Conduit Bushing Failure Results in a Reactor Trip (Section 4OA3.1)
05000280/2003002-00	LER	Manual Steam Generator Level Control Results in Power Ascension Reactor Trip (Section 4OA3.1)
05000280,281/2003004-00	LER	Manual Reactor Trips Due to Loss of All Circulating Water Pumps (Section 4OA3.1)
05000280,281/2003004-01	LER	Manual Reactor Trips Due to Loss of All Circulating Water Pumps (Section 4OA3.1)

5000280, 281/2002003-01	URI	Failure of respiratory protection program to include demonstration of proficiency in changing SCBA air cylinders (Section 2OS3.b)
05000281/2003008-001	URI	Fire Response Procedures 2-FCA-4.00 And 0-FCA-14.00 Not Adequate To Ensure Safe Shutdown Of Unit 2 (Section 4OA3)
05000280,281/2003008-002	AV	Alternative Shutdown Capability and Response Procedures Not Adequate to Ensure Safe Shutdown of Unit 1 (Section 4OA3)
TI 2515/156	TI	Offsite Power System Operational Readiness (Section 4OA5.1)

PARTIAL LIST OF PERSONS CONTACTED

Partial List of Persons Contacted:

R. Cramer, NSS Manager
B. Garber, Licensing Supervisor
L. Jones, Manager Radiological Protection
J. Keithley, Supervisor Health Physics Operations

LIST OF DOCUMENTS REVIEWED

Section 1R04

Plant Procedures
2-OP-SI-001A, Safety Injection System Alignment
0-OP-EG-001A, EDG 3 System Alignment
2-OP-EG-001A, EDG 2 System Alignment

Plant Drawings
11548-FM-089A, Safety Injection System
11548-FM-089B, Safety Injection System

Section 1R06

Plant Drawings
11448-FM-55A

11448-FM-55B

Plant Procedures
0-EPM-0805-01, Station Flood Detection Testing
0-MPM-1900-02, Flood Protection Floor Drain Back Water Stop Valve Replacement
1/2-EPM-0805-01, Turbine Building Flood Control Testing
1-OSP-PL-001, Performance Test of Turbine Building Sump Pumps 1-PL-P-2A, 1-PL-P-2B,1-PL-P-2C (Turbine Building Sump No. 1)
1-OSP-PL-002, Performance Test of Turbine Building Sump Pumps 1-PL-P-2D, 1-PL-P-2E,1-PL-P-2F (Turbine Building Sump No. 2)
2-OSP-PL-001, Performance Test of Turbine Building Sump Pumps 2-PL-P-2A, 2-PL-P-2B, 2-PL-P-2C (Turbine Building Sump No. 3)
0-AP-13.00, Turbine Building or MER 3 Flooding
0-AP-FCA-6.01, Uncontrollable Turbine Building Flooding

Work Orders
489929 01, 479493 01, 487910 01, 487911 01, 491419 01

Plant Issues
S-2002-4023, S-2004-1336, S-2004-1337, S-2004-1338, S-2004-1339
S-2004-1348, S-2004-1351, S-2004-1432, S-2004-1517

Root Cause Evaluation S-2004-1339, Internal Flooding Licensing Basis Compromise

Section 1R07

Work Order 517551-01
SSES-8.15, Controlling Procedure for Addressing Heat Exchanger Issues

Section 1R22

Technical Report No. NE-1381, Evaluation of Surry Power Station Reactor Coolant System Leak Rate Calculation

2OS1 Access Controls To Radiologically Significant Areas (71121.01)

Procedures, Instructions, Lesson Plans, and Manuals

C-HP-1020.011, Radiological Protection Action Plan During Diving Activities, Rev. 3
C-HP-1032.020, Radiological Survey Criteria and Scheduling, Rev. 4
C-HP-1032.030, Radiation Surveys, Rev. 3
C-HP-1032.060, Radiological Posting and Controls, Rev. 1
C-HP-1032.061, High Radiation Area Key Control, Rev. 2
C-HP-1061.110, Radiological Control Areas, Rev. 3
C-HP-1071.020, Controlling Contaminated Material, Rev 3
C-HP-1081.020, Radiological Work Permits: RWP Briefing and Controlling Work, Rev 4

Audits

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

Radiation Work Permit (RWP)

RWP - 04-1-0001, Rev. 1, General Entry
RWP - 04-2-1101, Rev. 2, Posted Locked High Radiation Areas and Hot particle Areas
RWP - 04-2-1506, Rev. 2, Auxiliary Building, Decon Building and Yard

RWP Briefings

RWP 04-2-1101, RWP Briefing Attendance Roster
RWP 04-2-1506, RWP Briefing Attendance Roster

Radiological Surveys

358, Gas Stripper/PDT Room - Gate 31, 06/08/04
375, Auxiliary Building 2' Elevation Overview, 06/09/04
384, PDT, Gas Stripper and Liquid Waste Tank Room - Gate 11, 06/08/04
512, Decontamination (Decon) Building 27' overview - Gate 27, 06/09/04
513, Decon Building 6' Overview - Gate 22, 06/09/04
516, Decon Building Roof Overview, 06/09/04
519, Unit 2 Safeguards 27' and 8' Overview, 06/09/04 (Survey of de-watering lines after resin transfer from Blend Tank)
521, Unit 2 Valve Pit 12', 19' and 27' Overview, 06/09/04

Corrective Action Program (CAP) Documents

Plant Issue (PI) S-2002-2913-E1, CAT 2 Root Cause Evaluation s-2002-2913-E1 A protective clothing hood was found on a coat rack in the NSS Electrical Prefab shop outside the protected area. Discovery date: 09/11/2002
PI S-2002-3478-E1, CAT 2 Root Cause Evaluations S-2002-3478, Worker Exits Protected Area with 120,000 dpm Discrete Radioactive Particle Embedded in Jacket. Discovery date: 11/05/2002
PI S-2003-1241-E1, CAT 3 Root Cause Evaluation Response, S-2003-1241-E1, Purple painted crescent wrench found inside of tool box on vehicle "4183. Vehicle located outside the protected area on the construction site. Discovery date: 03/28/2003
PI S-2004-2166-E1, Purple tools found in survey for free release of materials from the RCA 06/07/2004. Discovery date: 06/07/2004
PI S-2003-5439-E1, CAT 3 Root Cause Evaluation Response - S-2003-5439-E1, Purple 2 pound maul found outside the protected area. The tool was found on an air dryer in the Construction side parking lot.

2OS3 Radiation Monitoring Instrumentation and Protective Equipment (71121.03)

Procedures, Lesson Plans, and Manuals

C-HP-1032.020, Radiological Survey Criteria and Scheduling, Rev. 2
C-HP-1033.610, Eberline Air Monitor AMS-4 Calibration and Operation, Rev. 2

C-HP-1042.350, Self-Contained Breathing Apparatus Use, Rev. 4
HP-1033.015, Contamination Monitoring Instrumentation Control, Rev. 8
HPAP-1042, Radiological Respiratory Protection Program, Rev. 3
Lesson Plan: SCBA Cylinder Exchange, Rev. 1 dated 07/18/2003
Nuclear Employee Training Manual, Volume II (included section on Respiratory Protection Training), Rev. 10
0-AP-20.00, Main Control Room Inaccessibility, Rev. 6
0-AP-48.00, Fire Protection - Operations Response, Rev. 15
0-LSP-FP-005, Loss Prevention Surveillance Procedure (Attachment 4: Main Control Room Emergency SCBA), Rev. 6
VPAP-1902, Industrial Respiratory Protection, Rev. 5

Area Radiation Monitors Evaluated

RM-RM-127/128, Unit 1 (U1) Containment High-Range Radiation Monitor (CHRRM), calibrated 10/22/2001
RM-RM-138, 139, Spent Resin Handling Area Monitor, calibrated 1994 (out of service)
RM-RM-227/228, Unit 2 (U2) CHRRM, calibrated 03/27/2002RM-RM-164, U1 In-Core Instrument Transfer Area Monitor, calibrated 10/17/2001
RM-RM-264, U2 In-Core Instrument Transfer Area Monitor, calibrated 04/07/2002
RMS-RM-161, U1 Containment Personnel Hatch Area Monitor (CPHAM), calibrated 01/24/2001
RMS-RM-261, U2 CPHAM, calibrated 02/20/2002
RRM-RE-126, Radwaste Facility HIC Storage and Handling Area Monitor, calibrated 01/30/2002

Continuous Air Monitors Evaluated

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

CAP Documents

PI S-2002-0331, Shepherd Model 89 Calibrator in a degraded condition, 02/06/2002
PI S-2002-0544, Shepherd Model 89 Calibrator in an unstable condition because of an apparent electrical short, 02/26/2002
PI S-2002-0715, Shepherd Model 89 Calibrator has a broken door-alignment latch, 03/11/2002
PI S-2002-1129, Shepherd Model 89 Calibrator has “source exposed” indicator light malfunction, 04/02/2002
PI S-2002-1776, Shepherd Model 89 Calibrator out of service because door-locking device failed, 05/12/2002
PI S-2002-2203, Shepherd Model 89 Calibrator has a broken mechanical door latch, 06/22/2002
PI S-2004-2243, Review of Respiratory Protection records during the RP Audit 04-08
PI S-2002-2768, No guidance for sustained use of SCBAs in the Control Room

2PS1 Radioactive Gaseous and Liquid Effluent Monitoring (71122.01)

Reports, Procedures, Instructions, and Manuals

Surry Power Station (SPS), 2002 and 2003 Annual Radioactive Effluent Release Reports
SPS, Calibration, Procedure Number (No.) CAL-004, Revision (Rev.) No. 6, Process Radiation Monitor Alarm Setpoint Calibration
SPS, Calibration, Procedure No. CAL-255, Rev. No. 7, Kaman Normal Range Gas Effluent Monitor (RI-GW-130-1A)
SPS, Calibration, Procedure No. CAL-258, Rev. No. 5, Kaman Accident Range Gas Effluent Monitor RI-VG-131-2A
SPS, Calibration, Procedure No. CAL-298, Rev. No. 3, Kaman Radiation Monitor Alarm Setpoint Calibration
SPS, Health Physics (HP), Procedure No. HP-3030.031, Rev.12, Radioactive Gaseous Waste Sampling and Analysis, Rev. 10
SPS, HP Periodic Test, Procedure No. 1-PT-50.17, Rev. No. 2, Health Physics Sampling Condenser Air Ejector
SPS, HP Periodic Test, Procedure No. 1-PT-50.3, Rev. No. 1, Health Physics Sampling - Ventilation Vent # 2
SPS, HP Surveillance Procedure, Procedure No. 0-HSP-RM-003, Rev. No. 4, Dose Contributions from Station Effluents
SPS, Instrument Maintenance, Procedure No. IMP-C-RM-36, Rev. No. 27, Checking, Repairing or Replacing a Component in the Radiation Monitoring System
SPS, Instrument Preventive Maintenance, Procedure No. 0-IPM-RM-G-001, Rev. No. 10, Digital Ratemeter Model 942B Process Monitor Calibration
SPS, Instrument Preventive Maintenance, Procedure No. 0-IPM-CC-RRM-LIQD-001, Rev. No. 4, Radwaste Facility Liquid Effluent Monitor Calibration
SPS, Instrument Preventive Maintenance, Procedure No. 0-IPM-CC-RRM-MISC-001, Rev. No. 2-P1, Surry Radwaste Facility Radiation Monitor Setpoint Calibration
SPS, Instrument Preventive Maintenance, Procedure No. 0-IPM-CC-RRM-VENT-001, Rev. No. 6, Radwaste Facility Vent Stack Effluent Monitor Calibration
Station Administrative Procedure, Procedure No. VPAP-2103S, Offsite Dose Calculation Manual (Surry), Rev. 5
UFSAR Chapter 11.0 Radioactive Wastes and Radiation Protection

Calibration/Performance Data

Dominion Generation (DG), SPS, HP-1033.203, Gaseous Radioactive Waste Release Permits 40093.009.002.G, 40124.010.003.G, 40139.007.021.G, 40141.003.021.G, 40155.007.023.G, and 40156.003.024.G dated 04/08/04, 05/11/04, 05/25/04, 05/26/04, 06/08/04, and 06/09/04
DG, SPS, HP-1033.203, Liquid Radioactive Waste Release Permits 40083.032.002.L, 40102.030.007.L, and 40118.034.022.L dated 04/22/04, 05/22/04, and 05/31/04
Virginia Power, SPS, Cal-817, Rev. 22, Data Sheets for RMs 1-VG-RM-110, GW-RM-1-1, GW-RM-102, and VG-RM-109 dated 10/09/03, 03/07/03, 03/07/03, and 10/09/03

Audits

Audit 03-11: Offsite Dose Calculation Manual (ODCM), Radiological Environmental Monitoring Program (REMP), and Environmental Protection Plan (EPP) dated 02/25/04
Dominion Nuclear Health Physics Procedure, C-HP-1091.273, Rev. 5, Radioactive Effluent Control Program Evaluation for Surry Power Station for the period 2002 to 2003
Trend Evaluation Response S-2003-5601-E1, Gamma isotopic analysis results for # 1 Storm Drain Composite dated 10/05/03 are anomalous in that Co-58 was identified in the sample

CAP Documents

PI S-2003-1425, During background performance check of detector # 3 in the Count Room an anomaly occurred regarding the computer printout
PI S-2004-0577, A degrading trend on filter differential pressure was noted revealing a “0" differential pressure and a high flow fault light lit
Plant Issue Resolution (PIR) S-2002-2596-R1, The Kaman process vent low range noble gas effluent monitor did not respond to the 08/03/02 waste gas decay tank release until six hours after the release
PIR S-2003-0402-R1, Insensitivity of U1 and 2 air ejector radiation monitor to </= 30 gallons per day primary to secondary leakage during the start-up of U1 on 01/24/03 and 02/26/03 and U2 on 01/28/03
PIR S-2003-0847-R1, Moisture accumulation in the sample lines for the RM-RMS-259/260 skid
PIR S-2003-0876-E1, While releasing a Liquid Waste Monitoring tank, the SRF control room received annunciator DCS-LSM-B1, Liquid Discharge Radioactivity HIGH
PIR S-2004-1027-R1, Analysis of the particulate filter for the effluent sample form the SRF Vent from the week of 02/11-02/18/04 yielded positive results for gross alpha
PIR S-2003-1209-R1, January 2003 monthly liquid composite tritium values for the miscellaneous batch and continuous pathways were unusually high

2PS3 Radiological Environmental Monitoring Program (71122.03)

Procedures, Instructions, Lesson Plans, and Manuals

Annual Radiological Environmental Monitoring Program, January 1 to December 31, 2002
Annual Radiological Environmental Monitoring Program, January 1 to December 31, 2003
Audit 03-11, Offsite Dose Calculation Manual Radiological Environmental Monitoring Program and Environmental Protection Plan
C-HP-1091.100, Member Of The Public Dose Evaluation, Rev. 1
C-HP-1091.274, Radiological Environmental Monitoring Program: Surveillance and Evaluation, Rev. 1
HP-1033.015, Contamination Monitoring Instrument Control, Rev 8
HP-3051.010 Environmental Monitoring Program, Rev. 10
HP Periodic Test Procedure 0-HPS-REMP-002, Environmental Radiation Monitors, Rev.0
HP Procedure, HP-3051.010, Radiological Environmental Monitoring Program, Rev. 8
HP Surveillance Procedure 0-HPS-REMP-001, Land Use Census, Rev. 2,
0-HSP-SS-001 Storm Drain Sampling Using The American Sigma Ultrasonic Flow Meter, Rev.5
UFSAR, Section 2.2, Meteorology and Climatology, Rev 33

Instrument Calibration and Performance Data Records

CAL-93, Met Tower Delta T Loop Calibration, Rev. 6, Performed 08/03/04
CAL-133, Sigma Theta Loop, Rev. 4, Performed 07/30/04
CAL-155, Wind Speed Lower Loop, Rev.4, Performed 08/03/04
CAL-193, Wind Speed Upper Loop, Rev. 5, Performed 08/03/04
CAL-194, Wind Direction Backup Loop, Rev 5, Performed 08/03/04
CAL-195, Wind Direction Upper Loop, Rev. 5, Performed 08/03/04
CAL-196, Wind Direction Lower Loop, Rev 5, Performed 08/03/04
Calibration Certificates - Portable Air Samplers ID 7725 dated 01/20/04, ID 6827 dated 01/20/04, ID 6828 dated 01/20/04, ID 7121 dated 01/20/04, ID 4148 dated 01/20/04, ID 7133 dated 01/20/04, ID 7130 dated 01/20/04, and ID 5022 dated 01/20/04

CAP Documents

PI S-2003-0612, Environmental TLD at Kingsmill location missing
PI S-2004-1248, Station sewage holding tank contaminated with I-131 from an individual with a medical administration
PI S-2004-1313, The EMS monthly data base is incomplete - 2 weeks of effluent data from March are missing - likely associated with primary drive crash
PI S-2004-1354, Failed to meet the required airborne I-131 LLD at the Fort Eustis 9/16-23/03

Section 4OA1: Performance Indicator Verification (71151)

Procedures, Instructions, Lesson Plans, and Manuals

HPAP-2802, NRC Performance Indicator Program, Rev. 2
VPAP-1601, Corrective Action, Rev. 18
VPAP-1501, Deviations, Rev. 16

Plant Records

Regulatory Assessment Performance Indicators, Radiological Protection, - December 2003, January 2004, February 2004, March 2004, April 2004, May 2004, June 2004, and July 2004

Section 4OA5: Independent Spent Fuel Storage Installation (60855)

Procedures, Instructions, Lesson Plans, and Manuals

HP Periodic Test, 0-HPT-ISFSI-001, Independent Spent Fuel Storage Installation (ISFSI) Radiological Surveillance, Rev. 9
ISFSI Security Fence Survey, 04/07/04
ISFSI Perimeter Fence Survey, 04/07/04
Neutron and Noble Gas Dose Calculation Record C-HP-1031.022, Rev. 8
Surry ISFSI, Final Safety Analysis Report, Amendment 15, Docket 72-2, SNM-2501 Chapter 7, Radiation Protection
Virginia Electric and Power Surry Independent Spent Fuel Storage Installation Technical Specifications for Safety Licensee No. SNM-2501, Amendment 12

CAP Documents

PI S-200-0788, HP used incorrect survey instrument at ISFSI