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

November 12, 2008

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

SUBJECT: SURRY POWER STATION - NRC INTEGRATED INSPECTION REPORT NOS. 05000280/2008004, 05000281/2008004 and 07200055/2008001

Dear Mr. Christian:

On September 30, 2008, the United States Nuclear Regulatory Commission (NRC) completed an inspection at your Surry Power Station, Units 1 and 2, and the Surry Independent Spent Fuel Storage Installation. The enclosed integrated inspection report documents the inspection findings, which were discussed on October 15, 2008, with Mr. Bischof and other members of your staff.

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

This report documents one NRC identified finding of very low safety significance (Green), which involved a violation of NRC requirements. Additionally, two licensee-identified violations which were determined to be of very low safety significance are listed in this report. However, because of the very low safety significance and because they have been entered into your corrective action program, the NRC is treating these findings as non-cited violations (NCVs), consistent with Section VI.A.1 of the NRC's Enforcement Policy. If you contest any 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 Nuclear Regulatory Commission, ATTN.: Document Control Desk Washington DC 20555-0001; with copies to the Regional Administrator Region II; the Director, Office of Enforcement, U.S. 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/

Gerald J. McCoy, Chief
Reactor Projects Branch 5
Division of Reactor Projects

Docket Nos.: 50-280, 50-281, 72-055
License Nos.: DPR-32, DPR-37

Enclosure: Inspection Report 05000280/2008004, 05000281/2008004 and 07200055/2008001
w/ Attachment: Supplemental Information

cc w/ encl:

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/

Gerald J. McCoy, Chief
Reactor Projects Branch 5
Division of Reactor Projects

Docket Nos.: 50-280, 50-281, 72-055
License Nos.: DPR-32, DPR-37

Enclosure: Inspection Report 05000280/2008004, 05000281/2008004 and 07200055/2008001
w/ Attachment: Supplemental Information

cc w/ encl:

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

ADAMS: ☐ Yes ACCESSION NUMBER:_____ ☐ SUNSI REVIEW COMPLETE

OFFICE	DRP/RII	DRP/RII	DRP/RII	DRP/RII	DRP/RII	DRP/RII	DRP/RII
SIGNATURE	/RA by email/	/RA by email/	/RA by email/	/RA by email/		/RA/	/RA/
NAME	CWelch	JNadel	WLoo	RHamilton	MReichard	DArnett	JDodson
DATE	11/12/2008	11/13/2008	11/13/2008	11/13/2008	11/ /2008	11/13/2008	11/13/2008
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

OFFICIAL RECORD COPY DOCUMENT NAME: G:\DRPII\RPB5\SURRY\REPORTS\2008\SUR 08-04\SUR 08-04 REV6.DOC

cc w/encl:
Gerald T. Bischof
Site Vice President
Surry Power Station
Virginia Electric and Power Company
Electronic Mail Distribution

Sonny Stanley
Director, Nuclear Safety and Licensing
Virginia Electric and Power Company
Electronic Mail Distribution

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

Chris L. Funderburk
Director, Nuclear Licensing & Operations Support
Virginia Electric and Power Company
Electronic Mail Distribution

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

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

Senior Resident Inspector
Surry Power Station
U.S. Nuclear Regulatory Commission
5850 Hog Island Rd
Surry, VA 23883

Michael M. Cline
Director
Virginia Department of Emergency Services Management
Electronic Mail Distribution

Letter to David A. Christian from Gerald J. McCoy dated November 12, 2008

SUBJECT: SURRY POWER STATION - NRC INTEGRATED INSPECTION REPORT NOS. 05000280/2008004, 05000281/2008004 and 07200055/2008001

Distribution w/encl:
C. Evans, RII EICS (Part 72 Only)
L. Slack, RII EICS (Linda Slack)
OE Mail (email address if applicable)
RIDSNRRDIRS
PUBLIC
S. P. Lingam, NRR (PM: NA, SUR)
Richard Jervey, NRR

U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.:	50-280, 50-281, 72-055
License Nos.:	DPR-32, DPR-37
Report Nos.:	05000280/2008004, 05000281/2008004 and 07200055/2008001
Licensee:	Virginia Electric and Power Company (VEPCO)
Facilities:	Surry Power Station, Units 1 and 2 Surry Independent Fuel Storage Installation
Location:	5850 Hog Island Road Surry, VA 23883
Dates:	July 1, 2008 through September 30, 2008
Inspectors:	C. Welch, Senior Resident Inspector J. Nadel, Resident Inspector W. Loo, Acting Resident Inspector D. Arnett, Project Engineer H. Gepford, Health Physicist (S0S3) R. Hamilton, Senior Health Physicist (2PS1, 40A2, 40A5) M. Reichard, Reactor Engineer (2PS3)
Approved by:	Gerald J. McCoy, Chief Reactor Projects Branch 5 Division of Reactor Projects

Enclosure

TABLE OF CONTENTS

SUMMARY OF FINDINGS

IR 05000280/2008-004, IR 05000281/2008-004, 0720005/2008-001; 07/01/2008 - 09/30/2008; Surry Power Station Units 1 and 2; and Independent Spent Fuel Storage Installation; Adverse Weather Protection and Problem Identification and Resolution.

The report covered a 3-month period of inspection by resident inspectors and an announced inspection by regional based inspectors. Two Green findings, all of which were NCVs, were identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process", Revision 4, dated December 2006.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

- Green. The inspectors identified a Green non-cited violation (NCV) of 10 CFR 50 Appendix B, Criterion III, "Design Control," for a change in the EDG ambient air temperature operating limits, from 100ºF to 120ºF, that was made without an adequate design analysis. The licensee entered the issue into their corrective action program (CAP) for resolution using condition report (CR) 102488.

  The inspectors concluded that the licensee's failure to perform the necessary analysis to support the increase of the EDG ambient air temperature operating limit from 100ºF to 120ºF was a performance deficiency. The finding, more than minor in accordance with MC 0612, Appendix E, examples 3j and k, is associated with the design control attribute of the Mitigating System Cornerstone. The cornerstone objective of ensuring the availability and reliability of systems that respond to initiating events to prevent undesirable consequences was adversely affected. Using Inspection Manual Chapter 0609, "Significance Determination Process," Attachment 4 the inspectors concluded that the finding is of very low safety significance (Green) because the condition did not represent an actual loss of safety function due to the ambient temperature exceeding 100ºF but not exceeding 105ºF. The finding also was not potentially risk significant due to a seismic, flooding, or severe weather initiating event. A cross-cutting aspect was not assigned to the issue because it is not indicative of recent performance. (Section 1RO1)

B. Licensee-Identified Violation.

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 CAP. These violations and corrective actions are listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

Units 1 and 2 began the period at or near Full Rated Thermal Power and operated at full power for the entire report period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection

a. Inspection Scope

In preparation for severe weather from hurricane Hanna, the inspectors reviewed the licensee's implementation of severe weather procedures, Operations Check List (OC) 21, "Severe Weather," and 0-AP-37.01, "Abnormal Environmental Conditions." On a sampling basis, the inspectors verified required actions had been completed and attended management status briefings on site preparations for the storm. Included in the review were walkdowns of the electrical switchyard, emergency diesel generators, alternate AC (AAC) diesel generator, emergency switchgear rooms, emergency service water pump house, and the turbine, safeguards, and auxiliary buildings. During the walk-down, the inspectors looked for loose items and debris that could become a missile hazard during high winds, verified flooding barriers were in place, and verified that the emergency equipment was available and in the required standby mode. On Saturday, September 6, the inspector was on-site for the storm's arrival and passage through the local area.

The inspectors reviewed the licensee's response to CR 102448 which documented questions raised by the inspectors regarding the emergency diesel generators (EDG) ambient air temperature limit. The questions were raised during the prior inspection for seasonal hot weather preparations.

b. Findings

Introduction: The inspectors identified a Green non-cited violation (NCV) of 10 CFR 50 Appendix B, Criterion III, "Design Control," for a change in the EDG ambient air temperature operating limits, from 100ºF to 120ºF, that was made without an adequate design analysis.

Description: Deviation Report (DR) S-96-1493 was generated in July 1996 due to ambient air temperature within the EDG room exceeding 100ºF and air flow being noticeably lower than usual during the EDG monthly run. An outcome of the DR was to increase the ambient air temperature operating limit from 100ºF to 120ºF. The basis for the increase to 120ºF was provided in ET No. S-96-0210, Rev. 2, "Emergency Diesel Generator Maximum Allowable Ambient Temperature Surry Power Station Units 1 & 2," and relied upon purchase specification (NUS-74) which in the Conditions of Service

section specified, “the emergency generator set shall develop and maintain rated continuous output without replacement or repair of major parts or assemblies, including engine parts, and be capable of operating in accordance with performance requirements at any load up to full rating for 2,000 hr, with an ambient air temperature of 100ºF to 120ºF and at an altitude of 30ft above mean sea level.”

The inspectors determined that the validity of the 120ºF operating limit was in question based on the following: 1) the purchase specification appeared to have conflicting information stating the engine shall be air cooled and “shall be of proper capacity to allow continuous engine operation at rated output with ambient temperature of 100ºF without exceeding an engine outlet water temperature of 180ºF;” 2) Procedures 0/1/2-OPT-EG-001, “Number 3/1/2 Emergency Diesel Generator Monthly Start Exercise Tests”; required generator load be reduced to approximately 2650 KW if cooling water temperature reached 188ºF; and 3) the vendor technical manual specified 190ºF for the jacket water hot engine temperature alarm and engineering services report, No. 9087-ES-1, “Emergency Diesel Generator High Temperature Operation and Instrument Setpoints;” dated June 29, 1993; states “Young Radiator Co, has performed an analysis on this radiator to determine the maximum radiator air inlet temperature that will limit engine water outlet temperature to 190ºF while the engine is delivering 2750 KW rated load. Maximum radiator inlet air temperature is 105ºF.”

In accordance with the licensee’s evaluation ET-S-08-0094, continued engine performance, and therefore EDG operability, is not assured when jacket water temperature exceeds the vendor limit of 202ºF. In August 2008, the licensee determined that based on past EDG performance data the jacket water temperature will exceed the vendor limit of 202ºF when ambient air temperature exceeds approximately 109ºF.

Analysis: The inspectors concluded that the licensee’s failure to perform the necessary analysis to support the increase of the EDG ambient air temperature operating limit from 100ºF to 120ºF was a performance deficiency, because EDG operability could not be assured at ambient temperatures of 120 degrees. This finding is more than minor based on a similarity to MC 0612, Appendix E, examples 3j and 3k. It is associated with the design control attribute of the mitigating systems cornerstone and affected the cornerstone objective to ensure the availability, reliability and capability of the EDGs to perform their intended function. Using Inspection Manual Chapter 0609, “Significance Determination Process,” Attachment 4 the inspectors concluded that the finding is of very low safety significance (Green) because the condition did not represent an actual loss of safety function due to the ambient temperature exceeding 100ºF but not exceeding 105ºF. The finding also was not potentially risk significant due to a seismic, flooding, or severe weather initiating event. A cross-cutting aspect was not assigned to the issue because it is not indicative of recent performance.

Enforcement: 10 CFR 50 Appendix B, Criterion III, “Design Control” requires, in part, that design changes shall be subject to design control measures commensurate to those applied to the original design. Contrary to the above, in 1996 the Licensee changed the design ambient air temperature operating limit for the installed EDGs without adequately evaluating the change commensurate to the original design.

Because the finding is of very low risk significance, and has been entered into the corrective action program as CR102448, this violation is being treated as an NCV consistent with Section VI.A.1 of the Enforcement Policy: NCV 05000280, 281/2008004-01, Inadequate Design Control for the EDG Ambient Air Temperature Limit.

1R04 Equipment Alignment

.1 Partial Walkdown

a. Inspection Scope

The inspectors walked down critical portions of the Emergency Service Water (ESW) system to verify the system was correctly aligned to perform its designated safety function. The walk down occurred while the 'B' ESW pump was out of service for maintenance. The positions of critical valves, breakers, and control switches, required for system operability, were verified in the correct configuration by field observation and/or review of the main control board. To ascertain the required system configuration, the inspectors reviewed plant procedures, system drawings, the Updated Final Safety Analysis Report (UFSAR), and the Technical Specifications (TS). The inspectors reviewed the Licensee's corrective action program to verify that equipment alignment problems were being identified and properly resolved.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

.1 Fire Protection - Tours

a. Inspection Scope

The inspectors performed a defense-in-depth walkdown of the three fire areas identified below and reviewed licensee documents to evaluate the fire protection program operational status and material condition and the adequacy of: (1) control of transient combustibles and ignition sources; (2) fire detection and suppression capability; (3) passive fire protection features; (4) compensatory measures established for out-of-service, degraded or inoperable fire protection equipment, systems, or features; and (5) procedures, equipment, fire barriers, and systems so that the post-fire capability to safely shut down the plant is ensured. The inspectors reviewed the corrective action program to verify fire protection deficiencies were being identified and properly resolved. The references used for this review are listed in the attachment.

- Fire Zone 7, Emergency Diesel Generator Room 2
- Fire Zone 9, Battery Room 1A
- Fire Zone 10, Battery Room 1B

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program

.1 Resident Inspector Quarterly Review

a. Inspection Scope

The inspectors observed a licensed operator simulator exam given on August 19, 2008. The exam was administered using scenario RQ-08.5-SP-1, Revision 0, and involved both operational transients and design basis events. The inspectors verified that simulator conditions were consistent with the scenario and reflected the actual plant configuration (i.e., simulator fidelity). The inspectors observed the crew's performance to determine whether the crew met the scenario objectives; accomplished the critical tasks; demonstrated the ability to take timely action in a safe direction and to prioritize, interpret, and verify alarms; demonstrated proper use of alarm response, abnormal, and emergency operating procedures; demonstrated proper command and control; communicated effectively; and appropriately classified events per the emergency plan. The inspectors observed the evaluators' post scenario critique and confirmed items for improvement were identified and discussed with the operators to further enhance performance.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

For the equipment issues described in the CRs 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 associated circumstances, evaluated the extent of condition reviews, as required, and reviewed the generic implications of the equipment and/or work practice problem. Inspectors performed walk-downs 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.

- CR102698, 1-ELT-073, 2-ELT-111, 2-ELT-115 Appendix R emergency lights failed eight hour test
- CR 106064, ESW strainer failure

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors evaluated the following attributes for the seven selected systems, structures, and components (SSCs) and activities listed below: (1) the effectiveness of the risk assessments performed before maintenance activities were conducted; (2) the management of the assessed risk; (3) that, upon identification of an unforeseen situation, necessary steps were taken to plan and control the resulting emergent work activities; and (4) that maintenance risk assessments and emergent work problems were adequately identified and resolved.

- August 14, 2008; Unit 1 and Unit 2 on-line elevated risk condition (Yellow) for Station Battery Discharge Test
- August 18, 2008; Unit 1 and Unit 2 on-line risk condition (Green) for inoperable control room chiller which caused priority maintenance to be deferred
- August 21, 2008; Unit 1 risk assessment for mobile crane use in the vicinity of the safety-related Refueling Water Storage Tank
- September 6, 2008; Unit 1 and Unit 2 on-line risk condition (Green) for Severe Weather due to Hurricane Hanna
- September 9, 2008; Unit 1 and Unit 2 on-line risk condition (Green) for Service Water Header B maintenance and associated 24-hr Limiting Condition for Operation
- September 16, 2008; Unit 1 and Unit 2 on-line elevated risk condition (Orange) for Service Water Valve, 1-SW-263, non-functional
- September 17, 2008; Unit 1 elevated risk condition (Yellow) and Unit 2 baseline risk (Green) for piping replacement on the ‘A’ chilled water header and service water pump surveillance testing

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed eight operability evaluations affecting risk significant systems, to assess, as appropriate: (1) the technical adequacy of the evaluations; (2) whether continued system operability was warranted; (3) whether other existing degraded conditions were considered; (4) if compensatory measures were involved, whether the compensatory measures were in place, would work as intended, and were appropriately controlled; and (5) where continued operability was considered unjustified the impact on TS limiting condition for operations. Documents reviewed are listed in the attachment.

- CR 102071, Coordination of output fuse respective to supply breaker cannot be guaranteed for reactor plant system channel 1 for Units 1 and 2
- CR 106151, Evaluate service water rotating strainer backwash adequacy under all system alignments
- CR 106155, Oil leak identified on residual heat removal motor sight glass
- CR 108038, Unit 2 main control room (MCR) air handler (2-VS-AC-9) has low air flow due to a failed back draft damper
- CR 108634, Potential single point vulnerability to tornado missile strike to exposed EDG fuel oil tank vents
- CR 108907, Potential crimping of the ESW pump fuel oil tank vent due to a tornado missile strike
- CR 109060, Gas/vapor ejectors removed from low head safety injection pumps 2-SI-P-1A/1B and 1-SI-P-1A/1B
- CR 110847, EDG #3 may load onto 1J emergency bus in parallel with the AAC diesel generator

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testing

a. Inspection Scope

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

- Work Order (WO) 0780513-01, 0795545-01, 1022063-48, 102348718, Replace Charging Pump Service Water Temperature Valve Controller (01-SW-TCV-108C)
- WO 0781500-01, 079101-01, 0797849-01, 0798402-01, Charging Pump Motor Service and Inspection (01-CH-P-1C)
- WO 0798535-01, Low Head Safety Injection Pump (1-SI-1B) preventive maintenance
- WO 1022103-37, 0792253-01, 0795320-01, 0795321-01, Motor Driven Auxiliary Feedwater Pump (1-FW-3B) maintenance

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

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

Surveillance Tests

- 0-PT-8.8, Intake Canal Level Logic Testing
- 0-EPT-0104-01, Semi-Annual Station Battery Test
- 2-IPT-FT-RC-T-432, Delta T and T_{AVG} Protection Set III Loop T-432 Functional Test
- 1-PT-8.1, Reactor Protection System Logic (For Normal Operations)

Inservice Tests

- 0-OPT-SW-002, Emergency Service Water Pump 1-SW-P-1B

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

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 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 (HRA), and Very HRAs, against the requirements of 10 CFR Part 20. During tours, the inspectors evaluated radiological postings against the current radiological surveys in select areas of the auxiliary building 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 Health Physics technician (HPT) proficiency in performing and documenting the radiation surveys for observed activities.

Access controls for Locked HRAs were reviewed and discussed with Radiation Protection (RP) 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 Locked HRAs and Very HRAs. During the inspection, radiological controls for activities associated with the loading of spent fuel assemblies into a spent fuel cask, U1 containment entry for work on seal table, U2 containment entry for monthly operations activities, and U2 containment entry for work on a pressurizer level transmitter and personnel inner hatch door seal were observed and discussed with cognizant licensee representatives.

The inspectors observed radiologically significant work areas within radiation areas and HRAs 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.

RP program activities and their implementation were evaluated against 10 CFR 19.12; 10 CFR Part 20; the UFSAR details in Section 12, RP; 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

Corrective Action Program 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. No self-assessments for this program area were reviewed because the licensee had not completed any since the last NRC onsite inspection for this program area. Specific CAP documents reviewed and evaluated in detail for this inspection area are identified in Section 2OS1 of the report attachment.

The inspectors completed 21 of the required 21 samples for Inspection Procedure (IP) 71121.01. All samples have now been completed for this IP.

b. Findings

No findings of significance were identified.

2OS3 Radiation Monitoring Instrumentation and Protective Equipment

a. Inspection Scope

Radiation Monitoring Instrumentation During tours of the Unit 1 (U1) and Unit 2 (U2) auxiliary buildings, turbine buildings, and Surry Radwaste Facility (SRF), the inspectors observed installed radiation detection equipment including the following instrument types: area radiation monitors (ARMs), continuous air monitors (CAM), personnel contamination monitors (PCMs), and portal monitors. The inspectors observed the physical location of the components, noted the material condition, and compared sensitivity ranges with UFSAR requirements. In addition, the inspectors discussed maintenance history and select completed and planned modifications to the radiation monitoring system with the system engineer.

In addition to equipment walk-downs, the inspectors observed functional checks and alarm setpoint testing of various fixed and portable detection instruments. These observations included: source checks of portable ion chambers and G-M survey meters using a Shepherd calibrator, and source checks of PCMs and portal monitors at the Radiologically Controlled Area exit. The inspectors also observed the calibration of an MGP Telepole and discussed the calibration of the Health Physics Instruments REM-500 portable neutron detector. The inspectors observed the calibration facilities, reviewed calibration source validation records for the Shepherd irradiator and neutron range, and discussed the use of the facilities. The most recent 10 CFR Part 61 analysis for dry active waste was reviewed to determine if calibration and check sources are representative of the plant source term.

The inspectors reviewed calibration records for selected PCMs, portal monitors, ARMs, and CAMs. Calibration stickers on portable survey instruments were noted during inspection of storage areas for “ready-to-use” equipment and currency of daily/weekly source checks of instruments staged for use were confirmed. Records of quality assurance checks and calibration for the whole body counter were also reviewed.

Operability and reliability of selected radiation detection instruments were reviewed against details documented in the following: 10 CFR Part 20; NUREG-0737, Clarification of TMI Action Plan Requirements; TS Section 3; UFSAR Chapter 12; and applicable licensee procedures. Documents reviewed during the inspection are listed in Sections 2OS3 and 2PS3 of the report attachment.

Self-Contained Breathing Apparatus (SCBA) and Protective Equipment Selected SCBA units staged for emergency use in the U1/U2 control room and other locations, in addition to units staged outside U1 and U2 containment personnel hatches, were inspected for material condition, breathing air cylinder pressure, and number of units available. The inspectors also reviewed maintenance records for selected SCBA units for the past five years and certification records associated with supplied air quality.

Qualifications for individuals responsible for testing and repairing SCBA vital components were evaluated through review of training records. In addition, control room operators were interviewed to determine their knowledge of available SCBA equipment locations, including corrective lens inserts if needed, and their training on bottle change-out during a period of extended SCBA use. Respirator qualification records were reviewed for selected control room operators, maintenance personnel, radiation protection personnel, and chemistry personnel.

Licensee activities associated with maintenance and use of respiratory protection equipment were reviewed against 10 CFR Part 20; Regulatory Guide (RG) 8.15, Acceptable Programs for Respiratory Protection; and applicable licensee procedures. Documents reviewed during the inspection are listed in Section 2OS3 of the report attachment.

Problem Identification and Resolution Select licensee CRs associated with instrumentation and protective equipment were reviewed and assessed. The inspectors evaluated the licensee's ability to identify, characterize, prioritize, and resolve the identified issues in accordance with procedure PI-AA-200, Corrective Action, Rev. 2. The inspectors also evaluated the scope of the licensee's internal audit program and reviewed recent assessment results. Documents reviewed are listed in Section 2OS3 of the report attachment.

The inspectors completed 9 of the 9 required line-item samples detailed in IP 71121.03.

b. Findings

No findings of significance were identified.

2PS1 Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems

a. Inspection Scope

Effluent Monitoring and Radwaste Equipment The licensee's Radioactive Effluent Release Reports for Calendar Years (CY) 2006 and 2007 were 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 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.

The inspectors reviewed the two most recent calibrations for various effluent monitors including Unit 1 process vent normal and high range radiation, Kaman High Range Gas

and Effluent Rad Monitor, condenser air ejector monitor and discharge tunnel monitors. Installed configuration, material condition, operability, and reliability of selected effluent sampling and monitoring equipment were reviewed against details documented in the following: 10 CFR Part 20; 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 Plants; ANSI - N13.1 - 1969, Guide to Sampling Airborne Radioactive Materials in Nuclear Facilities; the ODCM, Rev. 14; and UFSAR, Chapter 11. Procedures and records reviewed during the inspection are listed in Section 2PS1 of the report attachment.

Effluent Release Processing and QC Activities The inspectors reviewed representative samples of both continuous and batch release permits for liquid and gases. The inspectors reviewed the results of the radiochemistry cross-check program for third quarter CY 2007 and first quarter CY 2008.

Selected portions of procedures for effluent sampling, processing, and release were evaluated for consistency with licensee actions. The inspectors reviewed radwaste and effluent systems for changes and alterations to configuration to include long term clearances and temporary modifications. Two liquid and three gaseous release permits were reviewed against ODCM specifications for pre-release sampling and effluent monitor setpoints. The inspectors reviewed the actions that were taken in response to an unexpected increase in noble gas concentrations while vacuum drying a spent fuel storage cask. The inspectors discussed performance of pre-release sampling and analysis, release permit generation, and radiation monitor setpoint adjustment with chemistry staff.

Current licensee programs for monitoring, tracking, and documenting the results of both routine and abnormal liquid releases were reviewed and discussed in detail. Specifically, the inspectors reviewed the effect of routine effluent liquid releases made in accordance with ODCM requirements on tritium concentrations in ground water samples reported from onsite groundwater monitoring wells. In addition, reports associated with abnormal liquid releases and corrective actions were reviewed to evaluate the potential onsite/offsite environmental impact of significant leakage/spills from onsite systems, structures, and components. In addition, the inspectors verified that these areas had been properly documented in the licensee's site decommissioning files in accordance with 10 CFR 50.75(g), if required. Finally, licensee current capabilities and routine surveillances to minimize and rapidly identify any abnormal leaks from liquid radioactive waste tanks, processing lines, and the spent fuel pool, were reviewed in detail.

The actions resulting from industry initiative for groundwater protection were discussed at length. The site hydrological assessment was discussed, as were sampling plans, communication plans and historical spills. The hydrology section of the UFSAR was reviewed and compared to the current hydrological assessment. The inspectors reviewed progress with the implementation of the Ground Water Protection Action Plan and Voluntary Communication Plan.

Observed task evolutions, count room activities, and offsite dose results were evaluated against details and guidance documented in the following: 10 CFR Part 20 and Appendix I to 10 CFR Part 50; ODCM; RG 1.21; RG 1.33, Quality Assurance Program Requirements (Operation); and Surry Plant TS. Procedures and records reviewed during the inspection are listed in Section 2PS1 of the report Attachment.

Problem Identification and Resolution Several CRs associated with effluent release activities were reviewed. The inspectors evaluated the licensee's ability to identify, characterize, prioritize, and resolve selected issues in accordance with procedure PI-AA-200, Corrective Action, Rev. 2. Reviewed documents are listed in Section 2PS1 of the report attachment.

The inspectors completed 3 of the required 3 samples for IP 71122.01.

b. Findings

No findings of significance were identified.

2PS3 Radiological Environmental Monitoring Program (REMP)

a. Inspection Scope

REMP Implementation The inspectors reviewed the licensee's most recent Annual Radiological Environmental Operating Reports for 2006 and 2007 which described implementation of the REMP and provided an assessment of the program results. Information regarding surveillance results, analysis of data, land use census, the interlaboratory comparison program, and permitted program deviations were evaluated. The inspectors also reviewed and discussed implementation of the REMP with respect to sampling locations, monitoring and measurement frequencies.

The inspectors observed collection of air particulate filters at selected air sampling stations and assessed sample collection methodology and techniques. Calibration procedures and records for the air sampling stations were reviewed. The inspectors also observed thermoluminescent dosimeter placement at selected locations as described in the ODCM. In addition, the inspectors observed dairy, water, sediment, and silt sample collection locations. Sample collection methodology, schedules, and previous results were reviewed for all sampling types.

Through the above reviews and observations, the licensee's practices and implementation of their radiological environmental monitoring program were evaluated by the inspectors for consistency with the ODCM, the UFSAR, TS and 10 CFR Part 20 requirements.

Meteorological Monitoring Program 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 cognizant licensee representatives.

Cognizant licensee representatives responsible for equipment maintenance and surveillance were interviewed by the inspectors concerning equipment performance, reliability, and routine inspections.

Calibration procedures and records for the most recent calibrations of the meteorological monitoring instruments for air temperature, wind speed and direction were also reviewed. The inspectors evaluated the operability of instruments and determined the availability of current meteorological conditions in the Control Room for the primary tower.

Meteorological monitoring program implementation and results were reviewed against TS, ODCM guidance, and procedures listed in Section 2PS3 of the report attachment.

Unrestricted Release of Materials from the Radiologically Controlled Area (RCA) The inspectors reviewed, evaluated, and discussed with cognizant licensee representatives, radiation protection program activities associated with the unconditional release of licensed materials from the main RCA and the SRF. In addition, the inspectors observed personnel and equipment released from the main RCA access point and the SRF. Licensee guidance and implementation of RCA exit-monitoring activities were evaluated against 10 CFR Part 20 requirements and applicable procedures documented in Section 2PS3 of the report attachment.

Problem Identification and Resolution The inspectors reviewed audits, and selected condition reports associated with REMP operations and the program for unrestricted release of materials from the RCA. The inspectors assessed the licensee's ability to identify, characterize, prioritize, and resolve the identified issues in accordance with licensee procedures PI-AA-200, Corrective Action, Rev. 2. Specific corrective action documents reviewed and evaluated in detail for these program areas are identified in Section 2PS3 of the report Attachment.

The inspectors completed 10 of the specified line item samples detailed in IP 71122.03.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification

.1 Occupational Radiation Safety Cornerstone

a. Inspection Scope

To evaluate the Occupational Exposure Control Effectiveness Performance Indicator, the inspectors reviewed data collected from July, 2006 through June, 2008. For the reviewed period, the inspectors assessed CAP records to determine whether inadequate control of locked HRA and very high radiation area, or unintended radiation exposures, resulting in TS or 10 CFR 20 non-conformances, had occurred. In addition, the

inspectors reviewed selected personnel contamination event data, internal dose assessment results, and electronic dosimeter alarms associated with dose rates exceeding 1 rem per hour and cumulative dose rates exceeding established set-points from July 2006 through June 2008. Reviewed documents relative to this Performance Indicator are listed in Section 4OA1 of the report attachment.

b. Findings

No findings of significance were identified.

.2 Public Radiation Safety Cornerstone

a. Inspection Scope

To evaluate the Radiological Effluent Technical Specification/ODCM Radiological Effluent Occurrences Performance Indicator, the inspectors reviewed data for the period of January to July, 2008. This included records, such as monthly effluent dose calculations, that are 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. The inspectors reviewed a cross section of effluent release permits for the month of June, 2008, including continuous and batch liquid and gas releases. The inspectors also interviewed licensee personnel that were responsible for collecting and reporting the Performance Indicator data. In addition, licensee procedural guidance for classifying and reporting Performance Indicator events was evaluated. Reviewed documents are listed in Section 4OA1 of the report attachment.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems

.1 Review of Items Entered into the Corrective Action Program:

As required by Inspection Procedure 71152, “Identification and Resolution of Problems,” and in order to help identify repetitive, long-term, or latent equipment failures, or specific human performance issues for follow-up; the inspectors performed a daily screening of items entered into Dominion’s corrective action program. The reviews were accomplished by reviewing hard copies of each condition report, attending daily screening meetings, and/or accessing and reviewing the licensee’s computerized database.

.2 Annual Sample: Degraded Carbon Dioxide Suppression System in Two Fire Areas at Unit 1 and Three Fire Areas at Unit 2

a. Inspection Scope

The inspectors reviewed the licensee's root cause and corrective actions for the carbon dioxide (CO_2) fire suppression systems which could not deliver the required design basis gas concentration for the Unit 2 cable tunnel and the Units 1 and 2 cable vaults. The systems were installed to meet the requirements of 10 CFR 50, Appendix R, Section III.G.3. This review focused on ensuring that the full extent of the issue was identified, an adequate root cause evaluation was performed, and that appropriate corrective actions were implemented to assure the fire suppression systems could deliver the required design basis gas concentration. The inspectors reviewed the design changes, discussed these changes with cognizant licensee representatives, and walked down the Normal Switchgear Rooms, Cable Spreading Rooms, Cable Tunnels, and Cable Vaults. The inspectors evaluated the plant issue against the requirements of the licensee's CAP as delineated in Station Administrative Procedure VPAP-1601, "Corrective Action," and 10 CFR 50 Appendix B, Criterion XVI, "Corrective Action." This issue was documented in the CAP as Plant Issues S-2006-2627, 2641, 2846 and 2701 and Condition Report 003758.

The issue was identified during the NRC Triennial Fire Protection Inspection and was originally documented as an Unresolved Item (URI) in NRC inspection report (IR) 2006-009. The issue was closed as a Green non-cited violation in IR 2007-005, following completion of the phase 3 significance determination.

b. Findings and Observations

No findings of significance were identified.

The inspectors determined that the licensee adequately evaluated the fire suppression systems for the affected areas and implemented effective corrective actions through design changes that allowed injecting more CO_2 on a fire protection actuation and increased CO_2 concentration in the effected areas. Changes included raising timer settings, changing inlet and outlet HVAC fire damper fusible links, changing piping and nozzles in zones to increase CO_2 volume injections and also implementing ventilation over-pressure relief via HVAC exhaust dampers failing open.

.3 Annual Sample: Service Water System Fouling

a. Inspection Scope

The inspectors performed additional reviews of the service water (SW) system fouling issues documented from January through September, 2008 that resulted in safety-related equipment becoming inoperable. The inspection focused on the safety-related risk significant SW functions for the high head safety injection (HHSI) pumps, emergency switchgear (ESGR) and MCR cooling, and the component cooling heat exchangers (CCHX). The issue was selected for continued review because of concern for potential common mode failure of risk significant SW functions due to silt and biological fouling.

The inspectors reviewed pictures taken by engineering personnel and/or visually observed SW system fouling in the CCHXs, the HHSI charging pump lube oil cooler (2-CH-E-5C), and the mechanical equipment room (MER) 3 and 4 SW strainers and system piping for the ESGR and MCR ventilation cooling, while open for cleaning. The inspectors reviewed Root Cause Evaluations (RCE) 000223 and S-2006-1372 associated with CCHX fouling; Apparent Cause Evaluations (ACE) 13823 and 13684 for the HHSI charging pump lube oil cooler fouling; and ACEs 013892, 000680, and RCE S-2004-2556-E2 for fouling issues associated with ESGR and MCR ventilation cooling. The inspectors also reviewed engineering logs, maintenance rule evaluations, searched the condition reporting (CR) and plant issues (PI) systems from 1998-2008 and reviewed related CRs; and interviewed licensee personnel. The inspectors assessed licensee performance in addressing each of the following attributes:

- complete and accurate identification of the problem in a timely manner,
- evaluation and disposition of operability / reportability issues,
- consideration of extent of condition, generic implications, common cause, and previous occurrences,
- classification and prioritization of the resolution of the problem commensurate with its safety significance,
- identification of root and contributing causes of the problem,
- identification of corrective actions which are appropriately focused to correct the problem,
- completion of corrective actions in a timely manner commensurate with the safety significance of the issue, and
- implementation of interim corrective actions and /or compensatory measures to minimize the problem and/or mitigate its effects, until permanent action can be implemented.

b. Findings and Observations

On February 19, 2008, charging pump 2-CH-P-1C was declared inoperable due to a high thrust bearing temperature (CR 091548) due to plugging of the TCV with silt. Fourteen (14) instances of SW silting, (five in Unit 1 and nine in Unit 2) were identified in ACE 13823 for the Unit 1 and 2 charging pump lube oil coolers and associated TCVs. Based on available information, the silting had not caused the charging pumps to become inoperable until the February, 2008 event.

ACE 13823, performed due to fouling of 2-CH-E-5A (CR 102051), identified that the lowest flow velocities (1.7 ft/sec) occur in the SW lines to the charging pump lube oil coolers. During winter months, the flow rates are even lower. As a result of the low flow, silt/mud accumulates in the lube oil coolers and TCVs. The ACE stated, “past corrective action dealt only with cleaning the heat exchanger rather than a permanent fix to the silting problem.” ACE 13684, performed in response to fouling of 2-CH-E-5C (CR 091566), also identified low flow rates to be the cause of fouling of the TCV.

Procedure PI-AA-200 (Rev. 2), “Corrective Action;” defines a Significant Condition Adverse to Quality (SCAQ) as: “a condition Adverse to Quality that has, or if left uncorrected could have, an undesirable effect on plant safety, regulatory position, or

environmental impact." It further states, "because of the high regulatory or safety consequences associated with this type of condition the cause of the condition must be determined and corrective action taken to preclude repetition." Service water silting of the Unit 1 and 2 charging pump lube oil coolers and associated TCVs is a SCAQ which had an undesirable effect on plant safety and caused HHSI pump 2-CH-P-1C to be inoperable.

The issues associated with the failure to take corrective action to prevent recurrence of SW silting in the charging pump lube oil coolers and TCVs is identified as an unresolved item (URI) pending additional inspection and review from the NRC. This URI is designated 05000280, 281/2008004-02, SW Silting in the Charging Pump Lube Oil Coolers and TCVs.

4OA5 Other

Operation of an Independent Spent Fuel Storage Installation (ISFSI)

a. Inspection Scope

The inspectors observed the loading of spent fuel assemblies into the spent fuel dry storage cask NUHOMS OS187/32PTH; verification of assemblies being loaded into the cask; setting the lid on the top of canister; verification of positive engagement of lifting devices being positioned; lifting of the loaded cask above the water surface; moving the loaded cask to the North Bay by following the heavy load lifting path; drying and decontamination of the cask; vacuum drying; backfill with helium; and movement of the cask from the North Bay to the ISFSI storage pad. Observations were compared to the licensee's procedures to ensure compliance. The inspectors also observed radiation protection controls and monitoring that included radiation area and contamination surveys of the cask as it was being lifted out of the water and placed in the North Bay, and movement from the North Bay to the ISFSI storage pad. In addition, the inspectors reviewed the spent fuel cask crane monthly inspection records. Documents reviewed are listed in the attachment.

b. Findings

No findings of significance were identified.

.2 Independent Spent Fuel Storage Installations (ISFSI) Radiological Controls

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, thermoluminescent dosimeter locations and condition, and radiological postings on the perimeter security fence. The inspectors conducted independent radiation surveys of Pads 1 and 2 general areas 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.
One sample is documented under IP 60855.1 as required to indicate that activity was performed; the majority of the effort was completed under IP 71121.01 (Section 2OS1).

b. Findings

No findings of significance were identified.

.3 Quarterly Resident Inspector Observations of Security Personnel and Activities

a. Inspection Scope

During the inspection period the inspectors conducted observations of security force personnel and activities to ensure that the activities were consistent with licensee security procedures and regulatory requirements relating to nuclear plant security. These observations took place during both normal and off-normal working hours.

These quarterly resident inspector observations of security force personnel and activities do not constitute additional inspection samples. Rather, they are considered an integral part of the inspectors' normal plant status review and inspection activities.

b. Findings

No findings of significance were identified.

.4 (Closed) NRC TI 2515/176, "Emergency Diesel Generator Technical Specification Surveillance Requirements Regarding Endurance and Margin Testing."

a. Inspection Scope

The objective of this TI was to gather information to assess the adequacy of nuclear power plant EDG endurance and margin testing as prescribed by plant-specific TS. The inspector interfaced with the appropriate station staff to obtain the information specified in Attachment 1 of the TI Worksheet. The TI applies to all operating nuclear power reactor licensees that use EDGs as the onsite standby power supply. The inspector verified the accuracy of the information by review of TS, EDG Design Basis Event (DBE) loading calculations, EDG endurance run test procedures, test data from the last three endurance tests performed on each EDG, EDG ratings, and EDG operating history. The information gathered will be forwarded to Nuclear Reactor Regulation/Division of Engineering/Electrical Engineering Branch (NRR/DE/EEEB) for further review to assess the adequacy and consistency of EDG testing at nuclear stations.

b. Findings and Observations

The TI is presently scheduled to be open until August 31, 2009, pending completion of the NRR/DE/EEEB review.

4OA6 Meetings, Including Exit

Exit Meeting Summary

On October 15, 2008, the inspection results were presented to Mr. Bischof, and members of his staff who acknowledged the findings. The inspector asked the licensee whether any proprietary material examined during the inspection should be considered proprietary. No proprietary information was identified.

4OA7 Licensee-Identified Violations

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

- Criterion XV, Nonconforming Materials, Parts, or Components, Appendix B, to 10 CFR Part 50, requires that measures shall be established to control materials, parts, or components which do not conform to requirements in order to prevent their inadvertent use or installation. These measures shall include, as appropriate, procedures for identification, documentation, segregation, disposition, and notification to affected organizations. Nonconforming items shall be reviewed and accepted, rejected, repaired or reworked in accordance with documented procedures. Contrary to the above, during the 2008 Unit 2 Refueling Outage 21, the licensee installed two Rosemount pressurizer level transmitters (2460 and 2461) that had not been identified by the licensee as being part of a 10 CFR Part 21 notification in response to NRC Bulletin Nos. 90-01 and 90-01, Supplement 1, regarding a loss of fill-oil. This violation is of very low safety significance because the pressure level transmitter was still operable and within the performance criteria for measuring pressurizer level. This violation was entered into the licensee's corrective action program as CR 105348.

- 10 CFR 50 Appendix B, Criterion III, "Design Control" requires, in part, that design changes, including field changes, shall be subject to design control measures commensurate to those applied to the original design. Contrary to the above, on August 30, 2008 the licensee installed a design change to the 1B ESW pump exhaust line without adequately evaluating each element of that change commensurate to the evaluations applied to the original design. This violation is of very low safety significance because the screen was removed. This violation was entered into the licensee's CAP as CR 107948.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel

M. Adams, Director, Station Engineering
B. Garber, Supervisor, Licensing
K. Grover, Manager, Operations
G. Bischof, Site Vice President
R. Johnson, Manager, Outage and Planning
L. Jones, Manager, Radiation Protection and Chemistry
R. Simmons, Manager, Maintenance
K. Sloane, Plant Manager (Nuclear)
B. Stanley, Director, Station Safety and Licensing
A. Harrow, Supervisor Electrical Systems
J. Keithley, Supervisor HP Technical Services
L. Ragland, Supervisor Health Physics Operations
D. Boone, Supervisor Exposure Control and Instrumentation
P. Blount, Health Physicist III
D. Noce, Health Physicist II
D. Anderson, Health Physicist II

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

05000280, 281/2008004-02	URI	SW Silting in the Charging Pump Lube Oil Coolers and TCVs (Section 4OA2)

Opened and Closed

05000280, 281/2008004-01	NCV	Inadequate Design Control for the EDG Ambient Air Temperature Limit. (Section 1R01)
05000280, 281/2515/176	TI	Emergency Diesel Generator Technical Specification Surveillance Requirements Regarding Endurance and Margin Testing (Section 4OA5)

Closed

NONE

Discussed

NONE

Attachment

LIST OF DOCUMENTS REVIEWED

Section 1R05: Fire Protection

Dominion, Nuclear Engineering, Equipment Location, Appendix 'R', Service Building:
Plan - EL 9'-6", Surry Power Station Unit 1, Drawing No. 11448-FAR-206, Rev. 16; and
Plan - EL 27'-0", Surry Power Station Unit 1, Drawing No. 11448-FAR-206, Rev. 6

Section 1R11: Licensed Operator Requalification Program

RQ-08.5-SP-1, Loss of Grid, Loss of All AC Power, Rev. 0

Section 1R12: Maintenance Effectiveness

0-ECM-0105-01, Rev. 19, Appendix R ELT Inspection and Rework
0-EPM-0105-01, Rev. 8, Appendix R ELT Eight Hour Duration Test
MRE006855, M-Rule evaluation to Engineering (1-ELT-073, 2-ELT-111/115 failed 8 hour test)

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

GMP-C-107, Rigging and Lifting, Rev. 21
Condition reports 106712, 021599
Probabilistic Risk Assessment Manual, Part III, Chapter G, Rev. 15
Safety Monitor Output, "Surry Unit 1 Future Look Ahead for 09/09/2008"
Safety Monitor Output, "Surry Unit 2 Future Look Ahead for 09/09/2008"
Safety Monitor Output, "Surry Unit 1 Future Look Ahead for 09/16/2008"
Safety Monitor Output, "Surry Unit 2 Future Look Ahead for 09/16/2008"
SPS Probabilistic Risk Assessment Model Notebook Part III, Volume CR.3, Revision 10
0-AP-13.00, "Turbine Building or MER3 Flooding", Revision 19
0-AP-13.01, "Uncontrollable Turbine Building Flooding", Revision 6

Section 1R15: Operability Evaluations

PA-EE-1655, Westinghouse Communication, April 6, 1971
EWR 89-359 Attachment 6, Jet Exhauster Summary, June 28, 1989
OD 000192, "Gas/vapor ejectors discovered to be removed"
OP-AA-102, "Operability Determination", Revision 2
OP-AA-102-1001, "Development of Technical Basis to Support Operability Determinations", Revision 1

Section 1R19: Post-Maintenance Testing

0-ECM-1412-01, Rev. 14
0-ECM-1509-05, Rev. 20
0-ICM-AOV-001, Rev. 9
0-MPM-0300-01, Rev. 14
1-IPM-SW-TCV-108C, Rev. 3

GMP-009, Rev. 8
IMP-C-MISC-147, Rev. 15
01-OPT-SI-005, Rev. 23
01-OPT-FW-002, Rev. 27
Work Order 38102210337

Section 1R22: Surveillance Testing

0-PT-8.8, Intake Level Canal Level Logic Testing
2-IPT-FT-RC-T-432, Delta T and T_{AVG} Protection Set III Loop T-432 Functional Test
0-EPT-0104-01, Semi-Annual Station Battery Test, Revision 12
1-PT-8.1, Reactor Protection System Logic (For Normal Operations), OTO1 Rev 32.
0-PT-8.8, Intake Level Canal Level Logic Testing, Dated 08/08/08
2-IPT-FT-RC-T-432, Delta T and T_{AVG} Protection Set III Loop T-432 Functional Test, Dated 07/29/08

Section 2OS1: Access Controls To Radiologically Significant Areas

Procedures and Guidance Documents
0-HSP-ISFSI-002, Rev. 2, NUHOMS Dry Spent Fuel Storage System; Preparation, Loading, Transport, and T.S. Surveillance Surveys
C-HP-1032.080, Rev. 8, Controlled Area and Unrestricted Area Radiological Surveys
C-HP-1081.012, Rev. 2, Radiation Work Permits: Preparing and Approval
C-HP-1081.022, Rev. 0, Radiation Work Permits: RWP Briefing and Controlling Work
C-HP-1081.030, Rev. 4, Radiation Work Permits: Extending, Revising and Terminating
C-HP-1081.040, Rev. 4, Radiation Work Permits: Providing HP Coverage During Work
HP-1032.090, Rev. 1, Providing Job Coverage Using Remote Monitoring Technology
HP-1061.500, Rev. 3, NUHOMS Spent Fuel Cask Preparation/Loading and Transport to ISFSI
PI-AA-200, Corrective Action, Rev. 2
RP-AA-201, Rev. 0, Access Controls for High and Very High Radiation Areas
RP-AA-202, Rev. 0, Radiological Posting
RP-AA-222, Rev. 0, Radiation Surveys
RP-AA-223, Rev. 0, Contamination Surveys
RP-AA-224, Rev. 0, Airborne Radioactivity Surveys
RP-AA-231, Rev. 0, Radiological Control Areas
RP-AA-232, Rev. 0, Radioactive Material (RAM) Control
RP-AA-240, Rev. 0, Discrete Radioactive Particle Control
RP-AA-261, Rev. 0, Control of Radiological Diving Activities

Radiation Work Permit (RWPs)
RWP Number (No.) 08-0-1011, Fuel Handling to Include All Work Associated with NUHOMS Cask 32 PTH and Transport of TC/DSC to the ISFSI
RWP No. 08-0-1501-2, Task 2, Unit 2 Containment Subatmospheric Entries
RWP No. 08-0-1501-4, Task 4, Repair Fitting Leaks on Seal Table with CTMT <12.5 psia and the Reactor Subcritical, Critical or Online
RWP No. 08-0-1501-6, Task 6, CERPI Cables – Trouble Shoot and Repair as Required with Containment <12.5 psia

RWP No. 08-2-3111, U2 RFO: Steam Generator Primary Side Maintenance
RWP No. 08-2-3116, U2 RFO: SI Check Valve Inspection and Repair
RWP No. 08-2-3117, U2 RFO: Pzr Spray Valve Maintenance 2-RC-PCV-2455A/2455B
RWP No. 08-2-3120, U2 RFO: 2-RC-1 Rx Head & Upper Internals Removal and Replacement
RWP No. 08-2-3126, U2 RFO: Alloy 600 Replacement

Records and Data Reviewed

Radiological Survey Map and Records, Map Nos. 100a, Unit #1 Containment – All Elevations, Dated 02/22/08 and 07/03/08; 131, Unit 1 Containment 18' Elevation Seal Table Room, Dated 07/15/08; 200a, Unit #2 Containment - All Elevations, Dated 07/18/08 and 07/30/08; 202, Unit #2
Containment Reactor Cavity, Dated 05/13/08; 226; Unit #2 Containment 18' Elevation – "A" RCP
Cube, Dated 04/30/08; 234, Unit #2 Containment 18' Elevation – Pressurizer Spray Valves, Dated 05/13/08; 251, Unit #2 Containment 3'6 Elevation – "A" Loop Room, Dated 05/04/08; 252,
Unit #2 Containment 3'6 Elevation – "B" Loop Room, Dated 04/28/08; 253, Unit #2 Containment
3'6 Elevation – "C" Loop Room, Dated 05/03/08; 255, Unit 2 Containment – "C" Steam Generator
Channel Head, Dated 04/29/08; 400, Fuel Building 45' Elevation Overview, Dated 07/07/08; 419,
North Bay – NUHOMS Cask # DOM-32-PTH-002C, Dated 07/14/08; 515, North Bay 27', 33', and
38' Overview, Dated 07/14/08; 900, U2 Basement, Dated 05/12/08; and CL-4, Fuel Building Clean Area Contamination and Discrete Particle Survey, Dated 07/13/08

SPS High Radiation Areas List
SPS Locked High Radiation Areas List
Transfer Cask Survey Map, NUHOMS Cask # DOM-32PTH-002C, Dated 07/14/08

Corrective Action Program (CAP) Documents

CR 090144, Worker received a dose rate alarm, Dated 01/30/08

Section 2OS3: Radiation Monitoring Instrumentation and Protective Equipment

Procedures and Guidance Documents

0-LSP-FP-005, Fire Protection Lockers, SCBA, and Fire Engine Inspection/Inventory, Rev. 15
C-HP-1042.510, Atmosphere-Supplying Respiratory Equipment Performance Verification, Rev. 7
C-HP-1042.350, Self Contained Breathing Apparatus Use, Rev. 4
C-HP-1042.450, Self-Contained Breathing Apparatus Maintenance, Rev. 13
C-HP-1032.080, Controlled Area and Unrestricted Area Radiological Surveys, Rev. 8
C-HP-1033.553, Health Physics Instruments, Model Rem 500, Neutron Survey Meter: Calibration and Operation, Rev. 3
C-HP-1041.045, Whole Body Counter Performance Checks, Rev. 2
C-HP-1053.533, MGP Telepole Calibration and Operation, Rev. 2
C-HP-1033.011, Check Source Reference Readings and Geotropism Checks for Portable Instruments, Rev. 4

Reports, Records and Data

WO 0599919-01, Calibrate control room area monitor (1-RM-RMS-157), 9/1/05
WO 0769489-01, Calibrate control room area monitor (1-RM-RMS-157), 8/16/07
WO 0605907-01, Calibrate containment particulate and gas monitor (1-RM-RMS-159160),4/7/06
WO 0758687-01, Calibrate containment particulate and gas monitor (1-RM-RMS-/160),10/12/07
WO 0609603-01, Calibrate new fuel storage area monitor (1-RM-RMS-152), 2/3/06
WO 0780807-01, Calibrate new fuel storage area monitor (1-RM-RMS-152), 3/12/08
WO 0609604-01, Calibrate fuel pit bridge area monitor (1-RM-RMS-153), 2/3/06
WO 0781342-01, Calibrate fuel pit bridge area monitor (1-RM-RMS-153), 3/13/08
WO 0609608-01, Calibrate auxiliary building control area monitor (1-RM-RMS-154), 1/17/06
WO 0780808-01, Calibrate auxiliary building control area monitor (1-RM-RMS-154), 1/30/08
WO 0725254-01, Calibrate letdown line high range radiation monitor (1-CH-RM-118), 6/13/06
WO 0757914-01, Calibrate letdown line high range radiation monitor (1-CH-RM-118), 5/31/07
WO 0725255-01, Calibrate letdown line low range radiation monitor (1-CH-RM-119), 6/13/06
WO 0757915-01, Calibrate letdown line low range radiation monitor (1-CH-RM-119), 3/31/07
System Health Reports: Radiation Monitors, 4th Quarter 2007 - 2nd Quarter 2008
Grade "D" Air Analysis Report: Surry Radwaste Facility "B" Instrument Air Compressor (2/27/07, 8/27/07, 2/26/08), Surry Radwaste Facility "A" Instrument Air Compressor (4/11/07, 10/9/07, 3/27/08), Station Service Air Compressor (9/14/06, 4/17/07, 10/29/07, 3/27/08)
Radiological Use SCBA Inspection Records, Monthly Inspections, January 2007 - July 2008
Respiratory Equipment Performance Verification Log, January 2006 – May 2008
SCBA Repair Log, April 2005 – June 2008
SCBA Cylinder Hydrostatic Testing Record (select cylinders with hydro dates 10/07 and 6/08)
C.A.R.E. Authorized Repair Center certification (August 2004, March 2007)
Personnel Respirator Qualification printout, all departments
Calibration Record – Whole Body Counter (Standup), 8/28/07
Calibration Record – Whole Body Counter (Chair), 8/29/07
Calibration Certificate – REM 500, s/n 233, 5/19/08
Calibration Certificate – MGP Telepole, s/n 6607-003, 5/3/08
Calibration Certificate – Bicron RSO-50#, s/n 193, 4/8/08
Calibration Certificate – Eberline PM-7, s/n 336, 2/13/08
Calibration Certificate – Eberline PM-7, s/n 413, 1/15/08
Calibration Certificate – Eberline PM-7, s/n 390, 1/16/08
Calibration Certificate – Eberline PCM-1C, s/n 132, 3/27/08
Calibration Certificate – Eberline PCM-1C, s/n 3/27/08
Software Master List Change Notice: PuBe Distance Calcs Excel Spreadsheet, 1/6/03

Corrective Action Program Documents

Radiological Respiratory Protection Program Evaluation, 10/22
Radiological Instrumentation Program Surveillance and Evaluation, 8/02
SAR000352, Radiation Detection Instrument Calibration Facility and Practices, 5/31/08
CR102808, High rework rate for 2-RM-RMS-259/260 in 2007, 7/2/08
ACE00329, Determine apparent cause of flow fault issues for U2 Containment Particulate and Gas radiation monitor, 3/12/07
CR090245, SCBA regulator failure, 2/1/08
CR091295, 35/65% air compressor has malfunctioned, 2/18/08

CR092148, 1-OX-C-1 unavailability resulted in challenge to containment SCBA supply, 3/3/08
CR103329, RG 1.97 clock expires for RTS of main steam rad monitor PCS points, 7/10/08
CR028913, Rad monitor 1-RM-RI-158 is occasionally spiking to 1.0 mr/hr, 1/17/08
CR090247, 1-RM-RI-155 (A/B drumming area) indication is erratic, 2/1/08
CR093901, Laundry area rad monitor 1-RM-RMS-RIC8 failed 12 month calibration, 3/27/08
CR095460, Spurious alarm from LEOF area radiation monitor, 4/13/08
CR098844, Unit 1 containment entry aborted due to incorrect respirator issue, 5/13/08
CR017115, Telepole survey meter failed while performing survey, 8/2/07
CR017989, Discrepancy in dose-rate indication from survey meter, 8/15/07

Section 2PS1: Radioactive Gaseous and Liquid Effluent Treatment and Monitoring

Procedures and Guidance Documents
VPAP-2103S, Offsite Dose Calculation Manual (Surry), Rev. 14
HP-3010.010, Radioactive Effluents Records and Reports, Rev. 5
HP-3010.020, Radioactive Liquid Waste Release Permits, Rev. 3
HP-3010.021, Radioactive Liquid Waste Sampling and Analysis, Rev. 4
HP-3010.022, Radioactive Liquid Waste Accountability and Dose Calculations, Rev. 2
HP-3010.023, Unplanned Liquid Release, Rev. 5
HP-3010.030, Radioactive Gaseous Waste Release Permits, Rev. 8
HP-3010.031, Radioactive Gaseous Waste Sampling and Analysis, Rev. 28
HP-3010.032, Radioactive Gaseous Waste Accountability and Dose Calculations, Rev. 2
HP-3010.033, Unplanned Gaseous Release, Rev. 12
HP-3010.040, Radiation Monitoring System Setpoint Determination, Rev. 19
0-HPT-REMP-002, Annual Radioactive Effluent Release Report and Annual Radiological Environmental Operating Report, Rev. 3
0-HSP-GW-001, 31 Day Effluent Dose Projections, Rev. 6
0-HSP-RM-002, Monitoring Normally Non-Radioactive Systems for Radioactive Contamination, Rev. 9
0-HSP-RM-003, Dose Contributions from Station Effluents, Rev. 6
0-HSP-SS-002, Storm Drain Sampling Using the ISCO 6712 Portable Sampler and the ISCO 710 Ultrasonic Module, Rev. 1
0-HSP-SS-003, Subsurface Drain Sampling, Rev. 2

Records and Data
Annual Radioactive Effluent Release Report- Surry Power Station, 1/1/07-12/31/07
Batch Gaseous Effluent Permit, 80231.017.009G, 7/25/08
Unplanned gaseous release to unrestricted area worksheet, 08-001
Unplanned gaseous release- radiation monitor worksheet, VG-RM-131-B
Annual Effluent Release Report Log, 7/24/08
SPS Health Physics Log, 7/24/08
eSOMS Station Narrative Logs 7/24/2008 00:00 to 7/26/08 23:01
Email Subject: MGPI Response to Kr-85 versus Xe-133, 7/25/08 04:04 p.m.
Email Subject: VG-RM131B noble gas measurements, 7/25/08 04:10 p.m.
Email Subject: Low range noble gas monitor efficiency value, 7/28/08 09:17 a.m.
Calc Number: PA-0224, Rev 0. Page 7 of 19, 4.10 Monitor Response Factors

Calibration Work Orders
WO 00599919, Calibrate Control Room Area Radiation Monitor, 01-RM-RMS-157, 9/1/05
WO 00519363, Calibrate Process Vent Normal Range Radiation, 01-GW -RM-130-1, 12/20/04
WO 00609604, Calibrate Fuel Pit Bridge Area Monitor, 01-RM-RMS-153, 2/3/06
WO 00609603, Calibrate New Fuel Storage Area Monitor, 01-RM-RMS-152, 2/3/06
WO 00609601, Calibrate Unit 1 Discharge Tunnel Radiation Monitor, 01-SW-RM-120, 1/23/06
WO 00609603, Calibrate New Fuel Storage Area Monitor, 01- RM-RMS-152, 2/3/06
WO 00609604, Calibrate Fuel Pit Bridge Area Monitor, 01-RM-RMS-153, 2/6/06
WO 00609611, Calibrate Condenser Air Ejector Discharge Rad Monitor, 01-SV-RM-111, 12/9/05
WO 00722099, Calibrate Process Vent High Range Radiation Monitor, 01-GW-RM-130-2, 6/12/06
WO 00726738, Calibrate Kaman High Range Gas & Effluent Rad Monitor, 01-VG-RM-131-2, 7/5/06
WO 00730595, Calibrate Process Vent Normal Range Radiation Monitor, 01-GW-RM-130-1, 3/23/06
WO 00734041, Calibrate Kaman Normal Range Gas & Effluent Rad Monitor, -01-VG-RM-131-1, 7/25/06
WO 00763539, Calibrate Condenser Air Ejector Discharge Rad Monitor, 01-SV-RM-111, 5/7/07
WO 00766777, Calibrate Unit 1 Discharge Tunnel Radiation Monitor, 01-SW-RM-120, 7/13/07

Release Permits
Gaseous Radioactive Waste Release Permit, 80178.017.008.G (Batch), 6/3/08
Gaseous Radioactive Waste Release Permit, 80192.002.026.G (Continuous), 6/17/08
Liquid Radioactive Waste Release Permit, 80175.031.034.L (Batch), 6/12/08
Liquid Radioactive Waste Release Permit, 80178.036.024.L (Continuous), 6/16/08

CAP Documents
CR022320, Daily Channel Checks for 1-VG-RM-131 Flow Rate Measuring Device Not Performed
CR098371, Vent Vent MGPI RM Sample Pump Found Not Running.
CR100370, Received Annunciator 0-RMA-C5 (Process Vent Rad Monitor Trouble)

Section 2PS3: Radiological Environmental Monitoring Program (REMP) and Radioactive Material Control Program

Procedures and Guidance Documents
2006 Annual Radiological Environmental Operating Report, 04/30/07
2007 Annual Radiological Environmental Operating Report, 04/18/08
VPAP-2103S, Offsite Dose Calculation Manual (Surry), Rev. 14
0-IPM-MM-PRO-001, Rev. 2, Primary Meteorological Tower Instrumentation Calibration
C-HP-1033.440, NE Technology SAM-9/SAM-11 Calibration And Operation

Instrument Calibration and Environmental Data Records
Primary Meteorological Tower Instrumentation Calibration Certificate, 04/14/08
Calibration Certificate - Portable Air Sampler, SN7131, 07/22/08
Calibration Certificate - Portable Air Sampler, SN5023, 07/22/08
Calibration Certificate - Portable Air Sampler, SN7386, 07/22/08

Calibration Certificate - Portable Air Sampler, SN7725, 07/22/08
Calibration Certificate - Portable Air Sampler, SN7129, 07/22/08
Calibration Certificate - Portable Air Sampler, SN12331, 07/22/08
Calibration Certificate - Portable Air Sampler, SN7724, 07/22/08
Calibration Certificate - Portable Air Sampler, SN8079, 07/22/08
Calibration Certificate - SAM-9/SAM-11, SN149, 02/14/08
Calibration Certificate - SAM-9/SAM-11, SN147, 02/14/08
Isotopic Sample Report - Sample ID DAW-2007-IL, 04/16/08
Environmental Sample Log, 02/2008-06/08

CAP Documents
C-HP-1091.271, Radioactive Materials Control Program Evaluation, Rev. 1, (10/1999-12/2002)
C-HP-1091.273, Radioactive Effluent Control Program Evaluation (2002-2003), 08/29/2003
C-HP-1091.274, REM Program Surveillance and Evaluation, Rev. 2 (08/2004-08/2006)
Audit# SA06-014, NUPIC Joint Audit Report of AREVA NP, Inc. Environmental Laboratories, 11/18/2006
CR-009116, RP DSEM for February 2007, 03/21/07
CR-016629, Movement of High Radiation High Integrity Container (HIC) at the SRF, 07/25/07
CR-021534, Current WMG software does not comply with new 49CFR172.202, 10/09/07
CR-091873, Primary Resin dose rates preclude the use of Type A shipping cask, 02/27/08
CR-Shipment to Kewaunee cancelled due to oil leaking from components inside the box, 03/27/08
CR-019577, Alternate Clam Sampling Location for REMP, 09/10/07
CR-096392, Hydraulic overload at Sewage Treatment Plant, 04/22/08
CR-097999, Contaminated Oil Spill into Storm Drain and Discharge Canal, 05/06/08
CR-011279, Received a lightning strike that caused a 100 MW spike on Unit One MW recorder, 04/28/07
CR-021904, Unit 1 / 2 Electrical Disturbance - 1A/2B Battery Trouble; Loss of MCR Met Data, 10/08/07
CR-023043, Wind direction upper is erratic, 10/23/07
CR-104834, Tree in close proximity to primary meteorological tower, 07/08

Section 4OA1: Performance Indicator Verification

Dominion, Department Administrative Procedure, Procedure No. HPAP-2802, NRC Performance Indicator Program, Rev. 4

Section 4OA2: Identification and Resolution of Problems

CR 003758, Place keeper CR for Plant Issue (PI) S-2006-2641
PI S-2006-2627, During the NRC Triennial Fire Protection Inspection, an NRC consultant identified that the minimum quantity of CO_2 required in the Unit 1 Normal Switchgear Room calculated by the original vendor as 3,994 lbs is inadquate
PI S-2006-2641, During the NRC Triennial Fire Protection Inspection it was noted that original calculations for CO_2 concentration in FP areas cannot be located
PI S-2006-2642, The discharge dampers for Unit 1 and Unit 2 Normal

Switchgear Rooms (Dampers for 1/2-VS-F-17, 1/2 VS-F-18), are manually operated and a CO_2 discharge would not automatically close the dampers if they open
PI S-2006-2846, During the NRC Triennial Fire Protection Inspection, and further review of CO_2 calculations, it was concluded that Unit 2 Cable Tunnel (Hazard 6) was marginal assuming no leakage for NFPA 12 compliance
PI S-2006-2701, During performance of review of low pressure CO_2 designs as part of the extent of condition for PI S-2006-2627, it was noted that the original room volumes for the Unit 1 and Unit 2 Cable Vault and Tunnels which calculated the required amount of CO_2 discharge were not accurate

Section 4OA5: Other Activities

Independent Spent Fuel Storage Installation
0-HPT-ISFSI-001, Independent Spent Fuel Storage Installation (ISFSI) Quarterly Radiological Surveillance, Rev 12, performed 4/23/08 and 7/16/08
0-HSP-ISFSI-002, NUHOMS Dry Spent Fuel Storage System Surveillance, Rev.2, performed 1/14/08
0-HSP-ISFSI-002, NUHOMS Dry Spent Fuel Storage System Surveillance, Rev.3, performed 7/19/08
Corrective Action 079701, CA to RP to document organizational response to release and the final justification.
CR 104571, High Radiation Indications During Vacuum Drying of Spent Fuel Cask

Operation of an Independent Spent Fuel Storage Installation
0-HSP-ISFSI-002, Rev. 2, NUHOMS Dry Spent Fuel Storage System; Preparation, Loading, Transport, and T.S. Surveillance Surveys
0-OP-FH-072, Rev. 10, NUHOMS 32 PTH Dry Shielded Canister Loading and Handling
HP-1061.500, Rev. 3, NUHOMS Spent Fuel Cask Preparation/Loading and Transport to ISFSI
0-HSP-ISFSI-002, NUHOMS Dry Spent Fuel Storage System Surveillance, Dated 07/23/08
0-OP-FH-072, Rev. 10, NUHOMS 32 PTH Dry Shielded Canister Loading and Handling, Dated 07/21/08
Work Order No. 38079286001, Monthly Crane PM, Mark No. 1-FH-CRN-15, Dated 06/04/08

LIST OF ACRONYMS

AAC	Alternate AC
ACE	Apparent Cause Evaluation
ADAMS	Agencywide Documents Access and Management System
ARM	Area Radiation Monitor
CAM	Continuous Air Monitor
CAP	Corrective Action Program
CCHX	Component Cooling Heat Exchanger
CO_2	Carbon Dioxide
CR	Condition Report
CY	Calendar Year
DR	Deviation Report
EDG	Emergency Diesel Generator
ESGR	Emergency Switchgear Room
ESW	Emergency Service Water
HHSI	High Head Safety Injection
HPT	Health Physics Technician
HRA	High Radiation Areas
IP	Inspection Procedure
IR	Inspection Report
ISFSI	Independent Spent Fuel Storage Installation
MCR	Main Control Room
MER	Mechanical Equipment Room
NCV	Non-cited Violation
NRC	Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
PCMs	Personnel Contamination Monitor
RCA	Radiologically Controlled Area
RCE	Root Cause Evaluation
REMP	Radiological Environmental Monitoring Program
RG	Regulatory Guide
RP	Radiation Protection
SCBA	Self-Contained Breathing Apparatus
SCAQ	Significant Condition Adverse to Quality
SDP	Significant Determination Process
SR	Safety Related
SRF	Surry Radwaste Facility
SW	Service Water
SSC	System, Structure and Component
TI	Temporary Instruction
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
U1	Unit 1
U2	Unit 2
URI	Unresolved Item
UT	Ultrasonic

VEPCO	Virginia Electric and Power Company
VHRA	Very High Radiation Area
WO	Work Order