UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
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July 18, 2003

South Carolina Electric & Gas Company
ATTN: Mr. Stephen A. Byrne
Senior Vice President, Nuclear Operations
Virgil C. Summer Nuclear Station
P. O. Box 88
Jenkinsville, SC 29065

SUBJECT: VIRGIL C. SUMMER NUCLEAR STATION - NRC INTEGRATED INSPECTION REPORT NO. 50-395/2003003

Dear Mr. Byrne:

On June 28, 2003, the US Nuclear Regulatory Commission (NRC) completed an inspection at your Virgil C. Summer Nuclear Station. The enclosed integrated inspection report documents the inspection findings, which were discussed on July 2, 2003, with Mr. Greg Halnon and other members of your staff.

The inspections 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.

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

In accordance with 10 CFR 2.790 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 No.: 50-395
License No.: NPF-12

Enclosure: Inspection Report No. 50-395/2003003
w/Attachment: Supplemental Information

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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No.:	50-395
License No.:	NPF-12
Report No.:	50-395/2003003
Licensee:	South Carolina Electric & Gas (SCE&G) Company
Facility:	Virgil C. Summer Nuclear Station
Location:	P. O. Box 88 Jenkinsville, SC 29065
Dates:	April 6 - June 28, 2003
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Approved by:	K. D. Landis, Chief Reactor Projects Branch 5 Division of Reactor Projects

Enclosure

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SUMMARY OF FINDINGS

IR 05000395/2003-003; 04/06/2003 - 06/28/2003; Virgil C. Summer Nuclear Station; Heat Sink, Maintenance Effectiveness, Occupational Radiation Safety, Identification and Resolution of Problems, and Followup to Temporary Instruction (TI) 2515/148.

The report covered a three month period of inspection by resident inspectors and announced inspections by one regional senior reactor inspector in the area of heat sink performance, three radiation specialists in the area of radioactive effluent monitoring and support of baseline inspection by one regional senior project engineer. Four Green non-cited violations (NCVs) and two Green findings 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: Mitigating Systems

- Green. One finding was identified involving inadequate maintenance or testing procedures resulting in an incomplete inspection of the Service Water piping to the Emergency Feedwater system.

  No violation of regulatory requirements was identified. The finding was greater than minor due the potential to have a degraded safety-related water supply to the Emergency Feedwater system. The finding is of very low safety significance because an actual loss of safety function was not identified. (Section 1R07)

- Green. The licensee failed to take appropriate corrective actions when established maintenance rule 10 CFR 50.65(a)(1) goals were not met for the safety-related heating ventilation and air conditioning chill water system.

  An inspector-identified non-cited violation of 10 CFR 50.65(a)(1) was identified. The failure to take corrective actions when Maintenance Rule performance or condition goals were not met was considered more than minor because if the finding was left uncorrected the unavailability or unreliability of the chiller units would result in the inability to maintain main control room temperatures within technical specifications limits. The finding was determined to be of very low safety significance since one chiller train was operable throughout the time the unavailability performance criteria and (a)(1) goals were exceeded. (Section 1R12)

- Green. The licensee failed to take adequate corrective action to inform operations staff and issue administrative guidance to limit the time of a technical specification action statement for emergency feed water instrumentation. Approximately six weeks after initial identification of the finding the licensee had not taken actions to address the deficiency and on-shift operations personnel were unaware of the need to limit the time the instrumentation was removed from service.

An inspector-identified non-cited violation of 10 CFR 50, Appendix B, Criterion XVI was identified. The finding is more than minor because if the issue was left uncorrected the finding would become a more significant safety concern, in that, the amount of time that the instruments were removed from service would increase the plant's susceptibility to an inadvertent actuation of the system. The finding is of very low safety significance as a result of the licensee's immediate action to issue administrative guidance to operations staff which would have the instrumentation returned to service within a six-hour action statement. (Section 4OA2.1)

- Green. After August 23, 2002, the licensee failed to take adequate corrective actions to preclude repetition of a significant conditions adverse to quality concerning the control of steam propagation barrier (SPB) doors. As a result on April 22, 2003, the SPB door for the C train chill water unit was not properly controlled during maintenance activities and was blocked open contrary to station procedures.

  An inspector-identified non-cited violation of 10 CFR 50, Appendix B, Criterion XVI was identified. The finding is more than minor because if the issue was left uncorrected the finding would become a more significant safety concern, in that, with the SPB door blocked open the unit was susceptible to a high energy line break (i.e., steam or feedwater) that would render both trains of chill water inoperable. The finding is of very low safety significance due to the low likelihood of a steam or feedwater line break accident and due to the time-delayed impact that a loss of all chillers units would have before control room ventilation temperature limits would be exceeded. (Section 4OA2.2)

Cornerstone: Public Radiation Safety

- Green. The inspectors identified a finding regarding the licensee's failure to maintain the meteorological tower data recovery greater than 90 percent as described in Section 2.3.3.2.4 of Updated Final Safety Analysis Report.

  This finding is greater than minor because the elevated incidence of out of service meteorological monitoring instrumentation and reduced frequency of meteorological data recovery affected the offsite dose monitoring attribute of the public radiation safety cornerstone. The finding is of very low safety significance in that no instances were identified when planned effluent releases were made with the required meteorological sensors inoperable. Further, the impact on the licensee's ability to assess dose to a maximally exposed offsite individual using the five year average meteorological monitoring data was negligible, and plant effluent releases were within the design criteria specified in 10 CFR 50, Appendix I, for the period of interest.

Cornerstone: Physical Protection

- Green. On April 11, 2003, the licensee improperly transmitted Safeguard Information externally over unapproved and unprotected telecommunication circuits.

  An inspector-identified non-cited violation of 10 CFR 73.21(g)(3) was identified. The finding is more than minor because the finding is associated with the physical protection cornerstone and affects the cornerstone objective to ensure that the physical protection system can protect against a design basis threat. Specifically, the cornerstone attribute in the area of response to contingency events for implementation of the protective strategy, including mitigating actions, would be vulnerable as a result of improperly transmitted Safeguards Information. The finding was determined to be of very low safety significance because no similar finding had been identified during the previous four quarters. (Section 4OA5.1)

B. Licensee-Identified Violation

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

REPORT DETAILS

Summary of Plant Status

On May 12 at 1:02 a.m., a unit tripped occurred due to a main generator field breaker failure. Unit was restarted on May 14 and achieved 100 percent power on May 15. The unit operated at or near full power for the remainder of inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R04 Equipment Alignment

.1 Availability of Redundant Equipment

a. Inspection Scope

The inspectors verified through plant walkdowns that with a train of equipment removed from service that the opposite train of equipment was correctly aligned, available and operable. The following systems / components were verified:

- B emergency diesel generator (EDG) (while the A train was inoperable during scaffold building and heavy load lifts);
- A train charging / safety injection pump while the B train was inoperable due to planned maintenance;
- B train safety-related battery while A train removed for corrective maintenance.

Correct alignment and operating conditions were determined from the applicable portions of drawings, system operating procedures (SOPs), Final Safety Analysis Report (FSAR), and technical specifications (TS). The inspection included review of outstanding maintenance work requests (MWRs) and related Condition Evaluation Reports (CERS) to verify that the licensee had properly identified and resolved equipment alignment problems that could impact mitigating system availability.

b. Findings

No findings of significance were identified.

.2 Semiannual Inspection

a. Inspection Scope

The inspectors performed a detailed review and walkdown of the chillers (VU) and their support of control room ventilation and room coolers for the emergency core cooling system equipment during post-accident conditions. In addition, the inspectors reviewed outstanding maintenance work requests and related CERs to verify that the licensee had properly identified and resolved equipment problems that could affect the availability, reliability and operability of the chiller units. (Reference Section 1R12 of this report for maintenance rule finding regarding chiller unit availability and reliability.) Specific procedures and documents reviewed are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

a. Inspection Scope

The inspectors reviewed recent CERs, MWRs, and impairments associated with the fire suppression system. The inspectors reviewed surveillance activities to determine whether they supported the operability and availability of the fire protection system.

The inspectors assessed the material condition of the active and passive fire protection systems and features and observed the control of transient combustibles and ignition sources. The inspectors conducted routine inspections of the following areas:

- Control building cable spreading rooms (fire zones CB-4 and 15);
- 1DB switchgear rooms and Heating, Ventilation and Air Conditioning (HVAC) rooms (fire zones IB-16, IB-17 and IB-22.2);
- Diesel generator rooms A and B (fire zones DG-1.1/1.2, DG-2.1/2.2);
- Control building Operations Support Center and DRCB-103 Cablespread (fire zones CB-1.1, 1.2, CB-2 and CB-5);
- HVAC chilled water pump rooms A and B (fire zones IB-7.2, IB-9 and IB-23.1);
- Charging pump rooms A, B and C (fire zones AB-1.5, 1.6 and 1.7).

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures

a. Inspection Scope

The inspectors reviewed the licensee's external flood mitigation plans to determine consistency with design requirements, FSAR, Sections 2.4.2 through 2.4.10, flood analysis documents and emergency plan procedure (EPP)-015, "Natural Emergency (Earthquake, Tornado, Hurricane)." The inspectors performed walkdowns of the station to verify features remained as described in the FSAR. The inspectors also performed visual examination of the storm drain system inside and outside the protected area to verify that drains were not blocked and the ground was properly graded to channel water into the system. Walkdowns were conducted of the interior and/or exterior walls of the auxiliary and intermediate buildings, service water pump house and diesel generator building to assess seasonal susceptibilities. The inspectors also reviewed a sample of potential external flood related CERs to verify corrective actions taken or planned to address identified deficient conditions.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance

a. Inspection Scope

The inspectors reviewed inspection records, test records, Engineering and Maintenance procedures, and other documentation to ensure that heat exchanger (HX) deficiencies that could mask or degrade performance were identified. Inspection records for risk significant HXs included the Component Cooling (CC) and Emergency Diesel Generator jacket water HXs. The inspectors also reviewed general health of the Service Water (SW) system via review of inspection/test results, review of chemistry activities, review of structural settlement inspections, review of SW corrective maintenance history, review of the SW health report, and discussions with the SW system engineer and HX engineer. Selected Condition Evaluation Reports (CERs) were reviewed for potential common cause problems and problems which could affect system performance to confirm the licensee was entering problems into the corrective action program and initiating appropriate corrective actions. In addition, the inspectors conducted a walk down of most of the SW system and the major components. Specific procedures and documents reviewed are listed in the Attachment to this report.

b. Findings

1). Introduction: A Green finding (FIN) for incomplete inspection of the SW system piping to the Emergency Feedwater (EFW) system was identified.

Description: The licensee has implemented periodic visual inspections of portions of the SW system to evaluate the system for fouling, blockage and degradation as stated in the response to Generic Letter 89-13, dated January 31, 1990. The licensee's controlling procedure for these inspections, ES-505, "Service Water System Corrosion Monitoring and Control Program," revision 1, requires, in general, the use of appropriate tools to allow for maximum documentation/inspection and inspections to focus on areas which have the highest risk of degradation. During review of visual inspection records of the SW piping which provides the backup safety-related seismically qualified water supply to the EFW system, the inspectors noted that the most recent inspections conducted in October 2000 only observed a short section of piping accessible at the isolation valves to EFW, XVG01037A and B. The majority of this piping is underground with a stagnant horizontal portion as long as 17 feet. The licensee could produce no records of having inspected or flow tested this section of piping, except for visual inspection of the small vertical section near the EFW pumps. The Condensate Storage Tank (CST) provides the preferred safety-related, seismically qualified water source to EFW. However, the CST is not missile protected. Significant problems have occurred in the industry through the years in raw water systems such as corrosion degradation, blockage, and biofouling. Areas with low or no flow, called dead legs, have typically exhibited degradation mechanisms. The SW piping to EFW, particularly the horizontal sections, are two of the most susceptible areas for degradation in the SW system at the Summer Station.

Analysis: Incomplete inspection of the SW piping represents a performance deficiency involving maintenance or testing procedure adequacy. It is more than minor because it affects the objective of the Mitigating Systems Cornerstone of ensuring the reliability and

capability of SW to prevent a loss of heat sink, due to the potential to have a degraded safety-related supply to EFW. The finding was processed through Phase I of the Significance Determination Process (SDP) and determined to be of very low significance (Green) because an actual loss of safety function was not identified. The inspectors did not identify that the lines were degraded and the licensee has recently experienced relatively low rates of degradation in most of the system. However, the licensee had noted degradation and clam infestation historically. In addition, the licensee's commitments and procedures did not specifically define the level of inspection.

Enforcement: No violation of regulatory requirements was identified. However, the inspectors determined that the inspections of the SW piping to the EFW system was incomplete and failed to confirm the lack of degradation in the system. This is a Green finding of very low significance, FIN 50-395/2003003-01: Incomplete Inspections of Portions of the Service Water System.

2). Introduction: One unresolved item (URI) associated with the licensee's heat exchanger performance testing for CC HXs was identified. The inability to establish consistent test parameters has resulted in invalid as-found (pre-outage) performance tests. As a result the testing program has not demonstrated the operability of the CC HXs under worse case conditions.

Description: In response to Generic Letter 89-13, the licensee committed to establishing an effective testing program to verify heat transfer capability of all safety-related HXs cooled by SW. Records for as-found thermal performance testing of CC HXs indicate that tests are inconclusive and do not meet criteria for a valid test. The licensee had identified the need to improve testing protocol in order to obtain reliable data regarding the verification of heat transfer capability of the CC HXs. The licensee had initiated CER 0-C-02-2581 to track corrective actions for this problem. Acceptance criteria for a valid test includes a Reynolds Number of greater than 10,000. Several performance tests resulted in a Reynolds number below this acceptance criteria. Therefore, operability of the CC HXs could not be confirmed. As a result, the licensee has contracted an outside vendor (Power Generation Technologies) to create a testing protocol which will establish a scientific methodology for testing HXs and ensuring a valid quantifiable test. The first set of tests using the new procedures is scheduled for the summer of 2003. The licensee initiated CER 0-C-03-1831 to track corrective actions for this issue.

The licensee does perform preventative maintenance cleaning each outage and visual inspection on the CC HXs. This preventative maintenance includes backflushing as well as chemical treatment of the SW side of the HXs to prevent biofouling. Therefore, the licensee has some assurance that the HXs are performing their design functions. However, until tests can sufficiently demonstrate operability of the CC HXs this issue will be identified as URI 50-395/2003003-02: Failure to Confirm Heat Transfer Capabilities of Component Cooling Heat Exchangers.

1R11 Licensed Operator Requalification Program

a. Inspection Scope

On June 18, 2003, the inspectors observed senior reactor operators' and reactor operators' performance on the plant simulator during licensed operator requalification training. The training scenario involved a small break loss of coolant accident with a loss of both charging pumps and one residual heat removal pump resulting in entry into emergency operating procedure (EOP)-14 for inadequate core cooling (LOR-ST-190). The inspectors verified that training included risk-significant operator actions and implementation of emergency classification and the emergency plan. The inspectors assessed overall crew performance, communications, oversight of supervision and the evaluator's critique.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

For the equipment issues described in the CERs listed below, the inspectors evaluated the licensee's effectiveness of the corresponding preventive or corrective maintenance associated with structures, systems or components (SSCs). The inspectors reviewed maintenance rule (MR) implementation to verify that component and equipment failures were identified, entered, and scoped within the Rule. Selected SSCs were reviewed to verify proper categorization and classification as (a)(1) or (a)(2) in accordance with 10 CFR 50.65. The inspectors examined (a)(1) corrective action plans to determine if the licensee was identifying issues related to the MR at an appropriate threshold and that corrective actions were established and effective. The inspectors' review also evaluated if maintenance preventable functional failures (MPFF) or other MR findings existed that the licensee had not identified. Inspectors reviewed the licensee's controlling procedures engineering services procedure (ES)-514, "Maintenance Rule Implementation," and the Virgil C. Summer "Important To Maintenance Rule System Function and Performance Criteria Analysis" to verify consistency with the MR requirements.

- 0-C-03-0018, main steam header moisture collector drain valve XVT02843B-MS not opening fully and subsequent failure of stroke time during surveillance test procedure (STP)-121.002, "Main Steam Operability Test."
- 0-C-03-1432, maintenance rule criteria for C train chiller hours of unavailability have been exceeded, and review of VU system MPFFs and other maintenance issues.

b. Findings

Introduction: The inspectors identified one Green NCV that dealt with the failure to take appropriate corrective actions when established MR 10 CFR 50.65(a)(1) goals were not

met for the safety-related heating, ventilation and air conditioning (HVAC) chill water system.

Description: The finding identified that as of May 20, 2003, the licensee had not recognized that corrective actions, taken as a result of (a)(1) goal settings on two previous occasions, were not adequate to restore the chiller's performance within (a)(1) goals for the chill water system. Additional actions being taken due to the finding include, sending components for rebuild to the vendor, improving the maintenance inspection activities and revising the preventative maintenance frequency on selected components. The licensee's corrective actions to date have not been sufficient to preclude identified maintenance problems.

As part of a review and walkdown of the chill water system, the inspectors examined the availability and reliability data, 10 CFR 50.65 (a)(2) performance criteria and (a)(1) goal setting for the chill water units. The chiller system was categorized in 10 CFR 50.65 (a)(1) status for initially exceeding the performance criteria of unavailability due to an MPFF in September 2000. Primary causes of the MPFF were a result of air in-leakage and temperature control issues on the B and C train chillers. Appropriately, the licensee had established (a)(1) performance goals for B and C train chillers in March 2001, but the monitoring period had been extended due to a delay in maintenance work completed and additional emergent air in-leakage issues identified during the monitoring periods. The (a)(1) goal setting established two specific standards: 1) no MPFFs or adverse trends within the next 12 months for air in-leakage; and 2) no MPFFs due to failure of the temperature control module to properly maintain the chilled water temperature for the next 18 months. However, four more MPFFs have occurred collectively on the A, B and C train chillers dealing with air in-leakage issues since the goals were established. Additionally on January 16 and June 11, 2003, a temperature control issue was identified that prevented the B train chiller from maintaining the system design temperature of 45°F.

Since establishment of the original two goals, a third (a)(1) goal was established in October 2002. This third goal was set to have no MPFFs or excess purge alarms as a result of air in-leakage and limit the unavailability due to air in-leakage issues over the next 18 months below 380 hours. The inspectors noted during their review that an adverse trend of increased air in-leakage that affected the C train chiller was identified in April 2003. The cause of the unavailability was determined to be a MPFF. The maintenance work that ensued required the unit to be taken out of service for an extensive overhaul lasting approximately 12 weeks (1979 hours). As a result, the C train chiller exceeded the goal of no MPFFs and the criteria of 368 hours of unavailability. As a result of the continuing maintenance issues on this MR program defined risk-significant system, the inspectors concluded that the licensee failed to take appropriate corrective actions for the (a)(1) goals not being met. The ineffective corrective actions have resulted in repeated MPFFs and the equipment not being available to perform its intended function.

Analysis: The failure to take corrective actions when MR performance or condition goals were not met was considered more than minor because if the issue was left uncorrected it could result in additional equipment failures. It would also result in a more significant safety concern, in that, if the finding was left uncorrected the unavailability or

unreliability of the chiller units would result in the inability to maintain main control room temperatures within TS limits. The lack of proper cooling would impact main control room equipment and would become an equipment environmental qualification issue due to temperatures being above design temperatures for extended periods of time. The finding was determined to be of very low safety significance (Green) since one chiller train was operable throughout the time the unavailability performance criteria and (a)(1) goals were exceeded and while maintenance activities were in progress.

Enforcement: NRC Code of Federal Regulations 10 CFR 50.65(a)(1) requires, in part, that the holders of an operating license monitor the performance or condition of structures, systems, or components within the scope of the rule as defined by 10 CFR 50.65(b), against license-established goals, in a manner sufficient to provide reasonable assurance that such structures, systems, or components are capable of fulfilling their intended functions. Such goals shall be established commensurate with safety. When the performance or condition of a structure, system, or component does not meet established goals, appropriate corrective action shall be taken. Contrary to this, as of May 20, 2003, the licensee failed to take appropriate corrective actions when established goals were not met for the HVAC chill water system units. The licensee's corrective actions have been ineffective due to repeat maintenance-preventable functional failures identified. Because the finding is of very low safety significance and has been entered into the corrective action program under CER 0-C-03-1711, this violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy: NCV 50-395/2003003-03, Failure to Take Appropriate Corrective Action for Maintenance Rule 10 CFR 50.65(a)(1) Goals Not Being Met For Chill Water System.

1R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors reviewed the licensee's assessments of the risk impacts of removing from service those components associated with emergent work items. The inspectors evaluated the selected SSCs listed below for: (1) the effectiveness of the risk assessments performed before maintenance activities were conducted; (2) the management of risk; (3) that, upon identification of an unforseen situation, necessary steps were taken to plan and control the resulting emergent work activities; and (4) that emergent work problems were adequately identified and resolved. The inspectors evaluated the licensee's work prioritization and risk determination to determine, as appropriate, whether necessary steps were properly planned, controlled, and executed for the planned and emergent work activities listed below:

- Emergency feedwater valve test with safety injection valves and C train service water pump being tested consecutively;
- Turbine driven EFW pump surveillance with the diesel fire pump and A train EDG maintenance activities ongoing with B train charging pump and high voltage switchyard tagging orders planned;
- B train EDG painting activities and heavy load lifts with C train chiller out of service and solid state protection system testing in progress;

- Rod insertion limit monitor inoperable with A train service water pump, A and C train chillers; A train hydrogen recombiner and B train component cooling water (CCW) pump out of service for planned maintenance;
- A train EDG removed from service for implementation of auto synchronization speed switch troubleshoot activity and planned major maintenance resulting in equipment out of service yellow condition.

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Non-Routine Plant Evolutions

a. Inspection Scope

This inspection evaluated operator preparations and response for the two listed non-routine plant evolutions to ensure they were appropriate and in accordance with the required procedures. The inspectors also evaluated performance and equipment problems to ensure that they were entered into the corrective action program.

- Operator response to loss of accumulator nitrogen supply header and ability to control reactor coolant drain tank level due to inoperable containment isolation valves;

- Reactor trip due to main generator voltage regulator fault in main field breaker.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed selected operability evaluations affecting risk significant mitigating systems to assess, as appropriate: (1) the technical adequacy of the evaluations; (2) whether operability was properly justified and the subject component or system remained available, such that no unrecognized increase in risk occurred; (3) whether other existing degraded conditions were considered; (4) where compensatory measures were involved, whether the compensatory measures were in place, would work as intended, and were appropriately controlled; and (5) the impact on TS limiting conditions for operations and the risk significance in accordance with the SDP. The inspectors reviewed the following CERs, issues and evaluations:

- 0-C-03-0907, load cells used to test pressurizer and main steam code safeties have not been calibrated since March 1999;
- 0-C-03-1364, all trains of chill water determined to be inoperable due to steam propagation door being chained open. Control room ventilation considered outside TS 3.7.9 and reportable;

- 0-C-03-1673, EDG air relief start valve blowdown in excess of design start pressure leaving diesel potentially inoperable;
- 0-C-03-1747, axial flux distribution monitor alarm not tested to verify function, questioning operability of system and capability to meet TS 4.2.1.1 action statement.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (PMT)

a. Inspection Scope

For the post-maintenance tests listed below, the inspectors reviewed the test procedure and witnessed either the testing and/or reviewed test records to determine whether the scope of testing adequately verified that the work performed was correctly completed and demonstrated that the affected equipment was functional and operable:

- MWR 0300425, repair low flow condition on B train reactor coolant pump (RCP) transmitter and recalibrate per instrumentation control procedure (ICP)-340.023, “RCP 2 Seal Water Flow IFT00127;”
- MWR 0303356, molded case circuit breakers, pump and motor preventative maintenance test per STP-205.003, “Charging / Safety Injection Pump and Valve Test;”
- MWR 0304888, test input to Thermal Q limit per STP-303.005 “Steam Generator A Steam Pressure IPT00474 Instrument Operational Test;”
- MWR 0305922, clean posts of XBA1A safety-related battery train and retest per STP-501.002, “Battery Quarterly Surveillance Test;”
- MWR 0306283, main steam header B train power relief valve leaking past seat retest per STP-121.002, “Main Steam Valve Operability Test;”
- MWR 0307602, manual isolation valve actuator for XVG02704-MB broke while opening, repair stem per mechanical maintenance procedure (MMP)-101.002, “Corrective Maintenance” and CER 0-C-03-1769, Trouble Shoot Plan.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

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

- STP-105.016B, “Train B Charging Pump and Diesel Generator Slave Relay Testing;”
- STP-125.013, “Diesel Generator Semi-Annual Operation Test,” for A Train;
- STP-170.003, “Fire Service Valve Operability Test,” of reactor building sprinkler system supply header isolation valve XVG06797-FS;
- STP-220.007, “Backup air supply check valve test for emergency feedwater flow control valves,” for A Train;
- STP-345.039, “Reactor Trip P-4 Trip Actuating Device Operational Test;”
- STP-396.010, “Emergency Feedwater Pump Suction Pressure Instrument IPT03635 Calibration.”

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed the following temporary modification to assess the impact on risk-significant SSC parameters, such as, availability, reliability and functional capability. The inspectors verified the temporary modification had not adversely affected safety function of the required system.

- Removal of service water piping link seal bolt to minimize ground water in-leakage in support of expansion joint seal replacement around auxiliary and intermediate buildings (Engineering Information Request 80714).

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation

On June 10, 2003, the inspectors reviewed and observed the performance of a simulator drill that involved a tornado in the high voltage switchyard and a steam generator tube rupture with a loss of offsite power which required a site area emergency to be declared (EPD-96-001A). The inspectors assessed emergency procedure usage, emergency plan classification, notifications and the licensee’s identification and entrance of any problems into their correction action program. This inspection evaluated the adequacy of the licensee’s conduct of the drill and critique performance.

2. RADIATION SAFETY

Cornerstones: Occupational Radiation Safety (OS) and Public Radiation Safety (PS)

2OS3 Radiation Monitoring Instrumentation and Protective Equipment

.1 Radiation Monitors

a. Inspection Scope

The operability, availability, and reliability of area radiation monitors and airborne activity monitors, used for monitoring both routine and accident conditions, were reviewed and evaluated. The inspectors observed material condition and installed configurations, where accessible, and reviewed documentation of performance checks and calibrations for selected area radiation monitors.

Licensee program activities in this area were reviewed against requirements specified in applicable procedures and in FSAR Chapter 12, Tables 12.1-19, "Area Radiation Monitors," and 12.2-3, "Airborne Radioactivity Monitors." Licensee guidance documents, records, and data reviewed within this inspection area are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

.2 Personnel Survey Instrumentation

a. Inspection Scope

Current program guidance, including procedures for calibration and operation, and its implementation to maintain operability and accuracy of selected portable survey instruments and the whole body counter analysis equipment were reviewed and evaluated. The inspectors reviewed current calibration data for selected instruments and assessed operability of various portable survey instruments staged or in use by the radiation protection (RP) staff. Responsible staff's knowledge and proficiency regarding instrument calibration activities were evaluated through interviews and record reviews. The accuracy and operability determinations for instrumentation used to perform surveys in high radiation or greater areas were assessed. The inspectors examined electronic dosimeters (EDs) staged at the entrance to the Radiologically Controlled Area (RCA) to determine whether the electronically displayed "calibration due" dates were current. The portable instruments and EDs which were inspected in detail are listed in the Attachment to this report.

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

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The licensee's respiratory protection program guidance and its implementation for SCBA equipment use were evaluated. The SCBA units staged for emergency use in the Control Room, the Control Room outside hallway, and the Auxiliary Building 463 foot elevation were inspected for material condition, air pressure, and number of units available. The inspectors reviewed and evaluated maintenance of SCBA equipment and certification records associated with supplied air quality. Proficiency and knowledge of staff responsible for maintaining SCBA equipment were evaluated through discussions and demonstration of a SCBA monthly functional test. Control Room operations personnel were interviewed to determine their knowledge of available SCBA equipment locations; availability of corrective lens inserts, if needed; and their training on replacement of air bottles during extended periods of SCBA use. The inspectors also assessed the licensee's arrangements for transporting replacement air bottles from the onsite refill station to the Control Room and Operational Support Center.

Licensee activities associated with maintenance and use of SCBA equipment were reviewed against Regulatory Guide (RG) 8.15, "Acceptable Programs for Respiratory Protection," Revision (Rev.) 1, October 1999; American National Standards Institute (ANSI)-Z88.2-1992, "American National Standard Practices for Respiratory Protection;" 10 CFR Part 20.1703; and applicable procedures listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

.4 Problem Identification and Resolution

a. Inspection Scope

Selected licensee CERs associated with radiation monitoring instrumentation and SCBA were reviewed and assessed. The inspectors evaluated the licensee's ability to resolve the identified issues. Specific CERs reviewed and evaluated are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

2PS1 Radioactive Gaseous and Liquid Effluent Treatment And Monitoring Systems

.1 Effluent Processing Equipment

a. Inspection Scope

The operability, availability, and reliability of selected radioactive effluent process sampling and detection equipment used for routine and accident monitoring activities were reviewed and evaluated. Inspection activities included review of calibration records and direct observation of installed equipment including the Liquid Waste Effluent Radiation Monitor (RM-L5), Airborne Waste Gas Discharge Radiation Monitor (RM-A10), and Airborne Reactor Building (RB) Purge Exhaust Radiation Monitor (RM-A4).

During the week of June 23, 2003, the inspectors directly observed effluent monitoring equipment material condition; assessed the installed configurations, where accessible; and reviewed operability. Parts of the liquid radioactive waste (radwaste) system were examined from the waste monitor tanks, through the RM-L5 liquid effluent monitor to the discharge point. Major waste gas system components were inspected from the waste gas decay tanks, through the RM-A10 gaseous effluent monitor to the main plant vent. The RB purge exhaust sample flowpath was inspected from the High Efficiency Particulate Air (HEPA) filter train, through the sample lines, and into the RM-A4 equipment. In addition, an HP supervisor was interviewed regarding liquid and gaseous radwaste system configuration and effluent monitor operation.

Reviewed documents included the three most recent calibration records for RM-L5, RM-A10 and the Main Plant Vent flowmeter; the most recent HEPA filter surveillance record for the RM-A4 flowpath, and out of service data for the past two years for all effluent monitors. The inspectors also reviewed applicable parts of four licensee procedures related to effluent monitoring equipment calibration.

Installed configuration, material condition, operability, and reliability for selected effluent sampling and monitoring equipment were reviewed against details documented in 10 CFR Part 20; FSAR Chapter 11.4, "Process and Effluent Radiological Monitoring Systems;" the Offsite Dose Calculation Manual (ODCM); 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;" and ANSI N13.1-1969. Procedures and records reviewed during the inspection are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

.2 Effluent Release Processing and Quality Control Activities

a. Inspection Scope

During the week of June 23, 2003, the inspectors directly observed and evaluated licensee guidance and proficiency in conducting effluent release processing and Quality Control (QC) activities. This included direct observation of sampling and release operations, inspection of count room equipment and daily QC activities, and review of effluent release procedural guidance and documentation.

The inspectors directly observed the collection and compositing of daily gaseous and liquid samples from the Waste Gas Decay Tank and Service Water effluent streams. The inspectors observed preparations for a liquid batch release including effluent monitor source checks and the RP - Operations interface. In addition, the inspectors interviewed RP staff regarding the liquid release permit details and effluent monitor setpoint calculation.

QC activities regarding gamma spectroscopy and liquid scintillation counting instrumentation were discussed with count room technicians and HP supervision. The inspectors reviewed records of daily QC checks and trending data for all gamma spectroscopy detectors and for the single liquid scintillation detector. The inspectors reviewed the most recent calibration records for germanium detectors number (No.) 1 and No. 2 for all calibrated geometries and evaluated the results against procedural guidance. In addition, results of the radiochemistry cross-check program were reviewed for calendar year (CY) 2002.

Two procedures for effluent sampling, processing, and reporting were evaluated for consistency with licensee actions. The inspectors performed independent dose calculations to compare with the doses reported in a gaseous release permit dated February 11, 2003. The inspectors also reviewed the 2002 annual effluent report to identify any anomalous releases. Reviewed documents are listed in the Attachment to this report.

Observed task evolutions, offsite dose results, and count room activities were evaluated against RG 1.21 guidance, 10 CFR Part 20 requirements, Appendix I to 10 CFR Part 50 design criteria, FSAR details, and ODCM requirements.

b. Findings

No findings of significance were identified.

.3 Problem Identification and Resolution

a. Inspection Scope

Two licensee CERs and one QA audit associated with effluent release activities were reviewed and assessed. The inspectors evaluated the licensee's ability to identify, characterize, prioritize, and resolve the identified issues in accordance with procedure

SAP-1131, "Corrective Action Program," Rev. 4. Documents reviewed are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

2PS3 Radiological Environmental Monitoring Program (REMP)

.1 Radiological Environmental Monitoring Program (REMP) Implementation

a. Inspection Scope

The environmental monitoring program guidance and implementing activities were evaluated during the week of June 23, 2003. The evaluation consisted of direct physical observation of sample stations, sample collection, sample preparation, documentation review and interviews with licensee personnel. The inspectors reviewed the V. C. Summer Offsite Dose Calculation Manual (ODCM), FSAR, and Annual Environmental Operating Report for 2002 during the inspection.

On June 25, 2003, the inspectors observed the routine weekly collection of five airborne particulate filter and iodine cartridge samples at monitoring locations 2, 6, 7, 8 and 30. Flow calibration records were reviewed for air sampler numbers 2, 6, 7, 8, 17 and 30. The inspectors observed the material condition of one water composite sampler on National Pollutant Discharge Elimination System (NPDES) outfall 014, five air samplers and two ODCM vegetable gardens. Environmental thermoluminescent dosimeters (TLDs), in the vicinity of the air sampling stations, were checked for material condition and appropriate identification. The inspectors independently determined the selected environmental sampling locations using NRC global positioning system (GPS) instrumentation.

On June 25, 2003, the inspectors evaluated instrument calibration and analytical quality control procedures for REMP sample analyses performed in the V. C. Summer Training Center environmental laboratory count room. Records for efficiency calibrations of gamma spectroscopic detectors 1 and 4, conducted June 23, 2003, were reviewed and evaluated. Results of inter-laboratory comparisons for typical REMP sample type during the period of August through November 2002 were reviewed and evaluated for accuracy.

Licensee procedures and activities related to environmental monitoring were evaluated for consistency with TS and ODCM details. The inspectors compared NRC GPS determined sampler locations with licensee data, ODCM specifications, and the Annual Radiological Environmental Operating Report details. Licensee environmental monitoring related procedures, reports and records reviewed during the inspection are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

.2 Meteorological Monitoring Program

a. Inspection Scope

The licensee's meteorological monitoring program was evaluated. On June 24, 2003, inspectors walked down the meteorological tower and its supporting instrumentation. The inspectors observed the physical condition of the equipment. The inspectors compared system generated data with the data provided by the plant computer to various locations including the control room. The data were also compared with the inspectors observations of wind direction and speed. The inspectors assessed system reliability and data recovery. Meteorological tower siting was evaluated based on near field obstructions, ground cover, proximity to the plant, and distance from terrain that could affect the representativeness of the measurements. The inspectors reviewed the calibrations and trouble reports for selected meteorological tower instrument sensors used during the previous five years.

Licensee procedures and activities related to meteorological monitoring were evaluated for consistency with TSs, ODCM, FSAR Section 2.3, "Meteorology," and ANS/ANSI 3.11-2000, "Determining Meteorological Information at Nuclear Facilities." Licensee's meteorological monitoring related procedures, reports and records reviewed during the inspection are listed in the Attachment to this report.

b. Findings

Introduction: A Green finding was identified for the failure to maintain the meteorological tower data recovery greater than 90 percent (%) as described in Section 2.3.3.2.4 of the FSAR.

Description: Based on a review of meteorological monitoring data between January 1, 1998, and December 31, 2002, the inspectors identified a deficiency in the meteorological data recovery values. Specifically, the inspectors determined that for CYs 1999 and 2002, the frequency of meteorological data recovery was substantially less than 90%, as stated in Regulatory Guide (RG) 1.23 and as committed to in the FSAR. In addition, the frequency of data recovery during the other reviewed CYs was only slightly above the expected 90% data frequency. The annual recovery frequencies for CY 1998 through CY 2002 were 94.8%, 84.6% 90.2%, 92.2%, and 83.2%, respectively. For the five year review period, the cumulative average was less than 90% recovery, i.e., an average unavailability of approximately 11% for the data reviewed.

The inspectors reviewed and discussed the impact of the decreased data recovery on routine airborne effluent release monitoring operations. The inspectors noted the licensee did not have redundant sensors as recommended by RG 1.23, Section C.5 to allow the critical meteorological parameters used for effluent release calculations to be recovered when a sensor was out of service either due to malfunction or calibration. From review of applicable documentation and discussions with responsible licensee representatives, the inspectors determined, based on a review of CERs, that although the tower is susceptible to lightning strikes accounting for some of the out of service time, the tower out of service time resulted predominantly from problems with the 10 meter (m) temperature monitoring equipment. Section 2.3.3.2.2 of the FSAR allows for

use of secondary measurements for horizontal wind speed and horizontal wind direction by using the 61m for the 10m instrument readings. In addition, the 10m and 40m temperature sensors can be employed rather than the 10m and 61m sensors for delta temperature (Δt) determination used to determine atmospheric stability for calculating effluent release plume dispersion data and resultant offsite doses. However, the inspectors noted that the FSAR does not allow for a substitute indication for the 10m temperature used as the reference altitude in calculating Δt data.

The inspectors also evaluated the availability of backup meteorological monitoring systems for effluent release resulting from routine operations. The licensee relies on the U.S. National Weather Service Station in Columbia, SC, located approximately 30 miles south of the facility, for backup meteorological support regarding large area meteorological parameters such as wind speed, direction, and general atmospheric stability. However, the inspectors noted Section 2.3 of the FSAR infers that the Columbia, SC meteorological station is not representative of the micro-meteorological parameters needed for dispersion calculations due to the influence of the Monticello Reservoir.

Analysis: This finding is determined to be a performance deficiency in that meteorological data recovery was not consistent with the FSAR, and is greater that minor because it affected the offsite dose monitoring attribute of the public radiation safety cornerstone. Specifically, meteorological data are used as a release criteria for individual batch releases, as prescribed by Section 3.1.6 of the ODCM; and the average diffusion constant, based on the most recent five years of meteorological monitoring data, is used in calculating the dose reported for the maximally exposed offsite individual, as described in Table 3.2-8 of the ODCM. The finding was assessed using the SDP for Public Radiation Safety. It was determined to be of very low safety significance in that (1) no situations were identified when batch effluent releases, e.g., CY 2002 waste gas decay tank releases, were made with the required meteorological instrumentation inoperable; (2) the impact on the licensee's ability to assess dose to the maximally exposed offsite individual using the five year average meteorological monitoring data was negligible; and (3) effluent releases were well within the design criteria specified in 10 CFR 50, Appendix I, for the period of interest. This finding is in the licensee's corrective action program as CER 0-C-03-2052.

Enforcement: No violation of regulatory requirements occurred. The inspectors determined that the finding did not violate any 10 CFR 20, TS, or ODCM requirements. The finding is identified as FIN 50-395/2003003-04: Failure to Maintain Meteorological Tower Data Recovery Greater Than the 90 Percent as Described in the FSAR.

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

a. Inspection Scope

Radiation protection program activities associated with radioactive materials control and the unconditional release of materials from the RCA were reviewed and evaluated. During the period of June 23-27, 2003, the inspectors directly observed selected surveys of materials released from the RCA using the Small Article Monitor (SAM) equipment. The inspectors also observed the release of personnel using the Personnel

Contamination Monitor (PCM-2), portal monitor (PM-7), and hand held personnel contamination radiation monitor (RM-14 beta-gamma friskers and RM-24 alpha-beta friskers) instrumentation. To evaluate the appropriateness and accuracy of release survey instrumentation, radionuclides identified within recent waste stream analyses were compared against the radionuclides used in current calibration sources and performance check sources. Current calibration and performance check data were reviewed and discussed. The detection sensitivities of the various instruments were reviewed during the review of the calibration.

The licensee practices for monitoring for unconditional release of materials from the RCA were evaluated against 10 CFR Part 20 and applicable procedures listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

.4 Problem Identification and Resolution

a. Inspection Scope

Inspectors reviewed CER documents involving the licensees meteorological and environmental sampling programs. The inspectors evaluated the licensee's ability to identify, characterize, prioritize, and resolve the identified issues in accordance with procedure SAP-1131, "Corrective Action Program," Rev. 4. Documents reviewed are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification

.1 Reactor Safety Cornerstone

a. Inspection Scope

To verify the accuracy of the PI data reported during that period, PI definitions and guidance contained in Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 2, were used to verify the basis in reporting for each data element. The inspectors reviewed a selection of licensee event reports (LERs), portions of station operator log entries, corrective action program database, the monthly operating reports, and PI data sheets to verify data reported. In addition, the inspectors also interviewed licensee personnel associated with the PI data collection, evaluation and distribution. The inspectors sampled data for the following PIs:

- Residual Heat Removal System Unavailability - data reviewed for the period of October 2002 through March 2003
- High Pressure Injection System Unavailability - data reviewed for the period of April 2002 through March 2003
- Emergency AC Power System Unavailability - data reviewed for the period of April 2002 through March 2003.

b. Findings

No findings of significance were identified.

.2 Public Radiation Safety Cornerstone

a. Inspection Scope

The inspectors reviewed the Radiological Control Effluent Release Occurrences PI results for the Public Radiation Safety Cornerstone from July 1, 2002, through June 26, 2003. For the review period, the inspectors reviewed data reported to the NRC, procedural guidance for reporting PI information, and two CERs documented in the Attachment to this report. In addition, the inspectors reviewed monthly PI evaluation records from December 2002 through May 2003. Dispositioning of the reviewed issues and events was reviewed against NEI 99-02.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems

Failure to Take Appropriate Corrective Action to Address Technical Specification (TS) Action Statement Non-Conservatism

a. Inspection Scope

The inspectors reviewed the licensee’s actions to address an identified deficiency in an TS Limiting Condition for Operation (LCO) action statement for emergency feedwater (EFW) low suction pressure instrumentation.

b. Findings

Introduction: The inspectors identified a Green NCV concerning the licensee failure to take appropriate corrective action to ensure that adequate administrative controls were promptly developed and implemented to address a deficient TS action statement for EFW pressure instrumentation.

Description: During the previous inspection period, on March 4, 2003, the inspectors identified a finding for the licensee's failure to ensure that appropriate administrative controls were established consistent with NRC Administrative Letter 98-10, "Dispositioning of Technical Specifications That Are Insufficient To Assure Plant Safety,"

to limit the time a channel of EFW instrumentation can be placed in a bypassed condition. NRC Administrative Letter 98-10 provides guidance for establishing administrative controls when TSs are determined to be less restrictive than necessary. Due to an identified vulnerability of the plant to a specific single failure, the licensee has submitted a TS change that reduced the time that some channels can be in bypass from 72 to 6 hours. The licensee had generated CER 0-C-03-0718 to address failure to establish necessary administrative controls for operations personnel. The CER corrective action plan included issuance of a revised Technical Specification Information / Relocation Form (TSR) to provide interim guidance to operators on implementation of the more restrictive TS action statement. However, on April 15, 2003, during a followup inspection, the inspectors identified that the licensee failed to issue the TSR to adequately communicate or implement needed administrative controls to limit the EFW channel in a bypassed condition. The inspectors recognized that the existing administrative controls had not been changed and that the needed administrative controls had not been communicated to the on-shift control room operations staff. When main control room staff were questioned on the allowed time to have the instrumentation in the bypassed condition, the inspectors were given improper action statement times and several operators at the controls were unaware of the previous finding.

Subsequent to the inspectors' April 15, 2003, review, the licensee issued a revised TSR the next day with appropriate administrative guidance to limit the EFW channel to six hours in the bypassed condition.

Analysis: The failure to take appropriate corrective action to inform on-shift control room operations staff and issue the revised TSR to implement proper administrative control of the EFW instrumentation TS LCO is more than minor because if the issue was left uncorrected, the finding would become a more significant safety concern. With the condition uncorrected the EFW instrument was vulnerable for a longer period of time to a single failure. Specifically, when the EFW instrument protective logic for automatic swap over from the condensate storage tank to the service water system is placed in a bypass condition, the circuit is reduced from a two out of four to a two out of three logic. This would increase the vulnerability of the instrumentation to a single failure which could prevent automatic swap over of the system. The finding is of very low safety significance (Green) since the EFW instrumentation channel had not been placed in the bypassed condition since the issue was originally identified on March 4, 2003. The licensee took immediate corrective action and issued the TSR to the operations staff. This finding affects the mitigating system cornerstone.

This finding has a cross-cutting aspect in human performance, in that, a contributing cause was the failure to recognize the need to notify on shift operations personnel of interim actions while developing long term corrective actions.

Enforcement: 10 CFR 50, Appendix B, Criterion XVI, Corrective Action, requires, in part, that measures be established to assure that conditions adverse to quality, such as deficiencies, are promptly identified and corrected. Contrary to this, the licensee failed to take adequate corrective actions to issue an TSR and inform operations personnel of the need to limit the time of a TS LCO action statement for EFW instrumentation. Because the finding is of very low safety significance and has been entered into the

corrective action program under CER 0-C-03-1308, this violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy: NCV 50-395/2003003-05, Failure to Take Adequate Corrective Actions to Address a Non-Conservative TS Action Statement.

.2 Failure to a Take Adequate Corrective Action to Maintain Steam Propagation Doors Operable

a. Inspection Scope

For CER 0-C-03-1364, "DRIB/107 was found open and secured with a rigging strap and chain," the inspectors conducted an in-depth review of the licensee's problem identification and resolution activities to ensure they included:

- Complete and accurate identification of the problem in a timely manner commensurate with its significance;
- 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.

b. Findings

Introduction: The inspectors identified a Green NCV for a failure to take adequate corrective action to preclude repetition of a significant condition adverse to quality concerning the proper control of a steam propagation barrier (SPB) door during maintenance activities on the C train chiller water unit.

Description: On April 22, an operator observed that the SPB for C train chiller room was blocked open by a security officer. An investigation into the incident discovered that in an effort to reduce uncomfortable room temperature conditions that several officers held the door open with different mechanisms (i.e., manually and rigging equipment). A review of security records indicate that the SPB door was blocked open for approximately four hours and 40 minutes. The officers were posted in the room to ensure that no contraband was introduced in the vital area during maintenance activities on the C train chiller. Inspectors' review of the incident response team report indicated that security officers had the understanding that the SPB doors could remain open for up to one hour for minor maintenance. Fire protection procedure (FPP)-025, "Fire Containment," limits the opening of SPB doors in Modes 1 to 4 to normal ingress and egress and minor corrective maintenance of the door lock or hinge. The security officers did not understand the guidance provided in FPP-025 and misapplied the intent of when the door could be opened. The security officers did not understand that opening the door by use of a rigging strap and chain did not constitute normal ingress or

egress or minor maintenance and resulted in the SPB being inoperable. Procedures require that SPB doors remain in a configuration such that they can immediately be closed to perform their hazard barrier function. After the door was recognized as being improperly blocked open, the licensee immediately closed and secured the door.

This finding is a repeat of an August 23, 2002, event whereby the inspectors observed an improperly controlled SPB door located at the entrance to the diesel generator building. That event involved blocking open the SPB by the routing of a hose through the door by operators and is documented in NRC Inspection Report 50-395/02-03. The licensee initiated CER 0-C-02-2704 to address the blocked open SPB door. The CER corrective actions included a revision to FPP-025 to clarify that minor maintenance applied to the door only. Other corrective actions included training for operations personnel on the proper application of FPP-025. Following this event the inspectors discussed with the other plant personnel the guidance in FPP-025. The inspectors discussed with the licensee that when a SPB door can be opened was widely misunderstood by most plant personnel. Specifically, the implementation of the administratively controlled one-hour allowed outage time for an SPB door to conduct minor corrective maintenance was the most often misunderstood step within the FPP-025 procedure. Given the latest event of April 22, 2003, the inspectors have concluded that the licensee corrective actions taken previously for CER 0-C-02-2704 were insufficient and failed to effectively prevent blocking open a second SPB door. Specifically, the corrective actions failed to adequately inform and train personnel site wide to preclude blocking open the C train chiller SPB door.

Analysis: The failure to properly control a SPB door is considered more than minor, because if left uncorrected the finding would become a more significant safety concern. With this door being held open by a rigging strap and chain, a high energy line break (i.e., steam or feedwater) within the intermediate building would render both trains of chill water inoperable due to the hazardous steam environment created. Due to a lack of train separation for high pressure steam hazardous environment, the licensee determined that all three chiller units were unavailable to provide room cooling to the main control room. Therefore, the loss of all chill water units would render the control room ventilation inoperable due to the inability to maintain room temperatures with TS limits. However, the issue was determined to be of very low safety significance (Green) based upon the low likelihood of a steam or feedwater line break accident. The finding also had mitigated significance due to the time-delayed impact that a loss of all chillers units would have before control room ventilation temperature limits would be exceeded. LER 50-395/03-001-00 was issued on June 13, 2003, for a condition prohibited by TS 3.7.6 due to the loss of both trains of control room ventilation. The subject LER was reviewed and closed in Section 4OA3.1 of this report.

Enforcement: 10 CFR 50, Appendix B, Criterion XVI, Corrective Action, requires, in part, that measures be established to assure that conditions adverse to quality are promptly identified and corrected. In addition, for significant conditions adverse to quality measures shall assure that the cause of the condition is determined and corrective actions be taken to preclude repetition. Contrary to this, the licensee failed to take adequate corrective actions and prevent repetition following a August 23, 2002, event concerning the diesel generator building SPB door. Subsequent to that event, a repetitive condition occurred on April 22, 2003, involving the C train chiller unit SPB door

being blocked open. Both doors are the same design and are controlled by procedure FPP-025. Because the finding is of very low safety significance and has been entered into the corrective action program as CER 0-C-03-1364, this violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy: NCV 50-395/2003003-06, Failure to Take Adequate Corrective Actions to Preclude Repetition of Blocking Open a Steam Propagation Door.

4OA3 Event Followup

.1 (Closed) (LER) 50-395/2003-001-00: Steam Propagation Barrier Door Found Secured In Open Position. On April 22-23, 2003, steam propagation barrier door DRIB/107, C train chiller unit, was discovered chained and strapped open. Blocking open the SPB rendered all three chiller water units inoperable due to their susceptibility to a hazardous environment that would be created by a steam line or feedwater break. Inoperability of the chiller units impacted both trains of control room ventilation as a result of the pressure boundary breach. Loss of both trains of control room ventilation is prohibited by TS 3.7.6, "Control Room Normal and Emergency Air Handling System." Upon discovery of the blocked open SPB the door was immediately closed.

A Green NCV was identified concerning the inadequacy of previous corrective actions for SPBs and is discussed in detail in Section 4OA2.2 of this report.

.2 (Closed) LER 50-395/2002-003-01: Automatic Reactor Trip Due to Spurious Noise on Nuclear Instrumentation Channel - Supplement I. This supplemental LER documents the results of the root cause investigation performed concerning the automatic reactor trip that occurred on June 1, 2002. The final root cause determined that a high voltage power supply failed that resulted in a spike on Nuclear Instrumentation (NI) Intermediate channel NI-36 causing the reactor trip. The original LER, 50-395/02-003-00, was closed in Inspection Report (IR) 50-395/02-03. This event was previously reviewed in IR 50-395/02-02 (Sections 1R14 and 1R20) with no findings of significance identified. This event did not constitute a violation of NRC requirements. The licensee documented corrective actions for this event in CER 0-C-02-1899.

4OA5 Other Activities

Follow-up to Temporary Instruction (TI) 2515/148, Inspection of Nuclear Reactor Safeguards Interim Compensatory Measures

a. Inspection Scope

As a result of the TI inspection that was conducted in March 2003, the residents received supplemental information from the licensee that was reviewed to determine if the material contained Safeguards Information and if the material was improperly transmitted externally.

b. Findings

Introduction: The inspectors identified a Green NCV for a failure to properly transmit Safeguards Information on an NRC approved and protected telecommunications circuit.

Description: After completion of the onsite TI 2515/148 inspection, on March 14, 2003, the inspectors were provided with some additional information to address concerns raised during the inspection. The licensee provided the supplemental information to the inspectors on April 11, 2003, via electronic mail. On receipt of the file, the inspectors were immediately concerned over whether the material provided contained Safeguards Information and downloaded the file to a disk and sent the material to regional personnel for review. A review of the information by Region II Physical Security Specialists concluded the file contained Safeguards Information. Through discussions with the licensee, the inspectors learned that the licensee had reviewed the material provided, but had concluded it did not contain Safeguards Information. After a followup telephone call with the regional physical security specialists, the licensee deleted all electronic records associated with the submitted TI 2515/148 supplemental information.

Analysis: The failure to properly transmit Safeguards Information is considered more than minor, because the finding is associated with the physical protection cornerstone and affects the cornerstone objective to ensure that the physical protection system can protect against a design basis threat. Specifically, the cornerstone attribute in the area of response to contingency events for implementation of the protective strategy, including mitigating actions, would be vulnerable as a result of improperly transmitted Safeguards Information. This finding was assessed using the physical protection significance determination process. The inspectors determined the finding to be of very low safety significance (Green) because no similar finding (i.e., human error) had been identified during the previous four quarters.

Enforcement: NRC Code of Federal Regulations 10 CFR 73.21(g)(3) states, in part, that except under emergency or extraordinary conditions, Safeguards Information shall be externally transmitted only by protected telecommunications circuits approved by the NRC. Contrary to this, on April 11, 2003, the licensee transmitted Safeguards Information over unapproved and unprotected telecommunications circuits via electronic mail. At the time the supplemental information was transmitted no emergency or extraordinary conditions existed. Because the finding is of very low safety significance and has been entered into the corrective action program as CER 0-C-03-1477, this violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy: NCV 50-395/2003003-07, Improperly Transmitted Safeguards Information.

4OA6 Meetings

Exit Meeting Summary

The inspectors presented the inspection results to Mr. G. Halnon and other members of the licensee's staff on July 2, 2003. A subsequent telephone exit was conducted on June 4, 2003, to describe the details of the finding in Section 1R07 with Mr. G. Halnon.

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

4OA7 Licensee-Identified Violation

The following violation 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 of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as an NCV.

- Technical Specification 6.8.1, requires, in part, that written procedures shall be implemented covering activities referenced in Regulatory Guide (RG) 1.33, "Quality Assurance Program Requirements," Appendix A. RG 1.33 requires, in part, under Step 8.b that specific procedures for surveillance tests shall be written and implemented. Surveillance test procedure ICP-175.010, "Chiller A, B, C Purge Oil Return Solenoid Valve Replacement," was written to support functional testing of the chiller purge unit solenoid valve. Contrary to the requirement to perform testing, on June 17, 2003, the licensee returned the C train chiller to operable status without performing ICP-175.010 functional test at the completion of maintenance. Proper operation of the purge unit is necessary to ensure the chiller does not operate with excess purges. If the solenoid valve did not function the chiller would be considered inoperable. Because one train of chill water was available no safety-related equipment environmental qualification was impacted, therefore, this violation is not more than of very low safety significance and is being treated as a non-cited violation. This issue was entered into the licensee corrective action program as CER 0-C-03-1957.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

J. Archie, General Manager, Engineering Services
F. Bacon, Manager, Chemistry Services
L. Blue, Manager, Health Physics Services
M. Browne, Manager, Nuclear Licensing and Operating Experience
G. Douglass, Acting Manager, Nuclear Protection Services
M. Fowlkes, Manager, Design Engineering
D. Gatlin, Manager, Operations
G. Halnon, General Manager, Nuclear Plant Operations
D. Lavigne, General Manager, Organization Effectiveness
K. Nettles, General Manager, Nuclear Support Services
W. Stuart, Manager, Plant Support Engineering
A. Torres, Manager, Planning / Scheduling and Project Management
R. White, Nuclear Coordinator, South Carolina Public Service Authority
S. Zarandi, Manager, Maintenance Services

NRC

K. Landis, Branch Chief, Division of Reactor Projects
M. Lesser, Branch Chief, Division of Reactor Safety

LIST OF ITEMS OPENED AND CLOSED

Opened and Closed

50-395/2003003-01	FIN	Incomplete Inspections of Portions of the Service Water System (Section 1R07)
50-395/2003003-03	NCV	Failure to Take Appropriate Corrective Action for Maintenance Rule 10 CFR 50.65(a)(1) Goals Not Being Met For Chill Water System (Section 1R12)
50-395/2003003-04	FIN	Failure to Maintain Meteorological Tower Data Recovery Greater Than the 90 Percent as Described in the FSAR (Section 2PS3.2)
50-395/2003003-05	NCV	Failure to Take Adequate Corrective Actions to Address a Non-Conservative TS Action Statement (Section 4OA2.1)

50-395/2003003-06	NCV	Failure to Take Adequate Corrective Actions to Preclude Repetition of Blocking Open a Steam Propagation Door (Section 4OA2.2)
50-395/2003003-07	NCV	Improperly Transmitted Safeguards Information (Section 4OA5)

Opened

50-395/2003003-02	URI	Failure to Confirm Heat Transfer Capabilities of Component Cooling Heat Exchangers (Section 1R07)

Closed

50-395/2003-001-00	LER	Steam Propagation Barrier Door Found Secured in Open Position (Section 4OA3.1)
50-395/2002-003-01	LER	Automatic Reactor Trip Due to Spurious Noise on Nuclear Instrumentation Channel - Supplement 1 (Section 4OA3.2)

LIST OF DOCUMENTS REVIEWED

Section 1R04 - Equipment Alignment

Control building log for monitoring area temperatures in accordance with TS Table 3.7-7;
Drawing (D)-208-109, “HVAC Mechanical Water Chiller,” logic diagram;
D-302-841, “Chill Water Pump and Chiller Area;”
FSAR Section 9.4.7.2.4, “Safety Class Chill Water System;”
FSAR Section 9.4.7.3, “Safety Evaluation;”
NUREG 0717, “Safety Evaluation Related to the Operation of V. C. Summer Station Unit 1;”
South Carolina Electric and Gas Company Maintenance Rule Implementation System Function Worksheet for the Chill Water System;
SOP-501, “HVAC Chill Water System;”
STP-125.010, “Integrated Safeguards Test, Train A,” Attachment V;
Technical Manual IMS-94B-0518, “York-Borg Warner Centrifugal Turbo Paks HTK3-C2-BDB5;”
TS 3.7.9, “Area Temperature Monitoring;”
TS 3.7.6, “Control Room Normal and Emergency Air Handling System.”

Section 1R07 - Heat Sink Performance

Procedures

SAP-1255, Service Water System Reliability Optimization Program, Rev. 0
PTP-213.002, Service Water System Heat Exchanger Data Collection, Rev.0
ES-505, Service Water System Corrosion Monitoring and Control Program, Rev. 1

Inspection/Test Records

Visual Inspection Checklist for XVG01037A, dated 10/16/2000
Visual Inspection Checklist for XVG01037B, dated 10/29/2000
Visual Inspection Checklist for CC Heat Exchanger A, dated 04/27/2002
Visual Inspection Checklist for CC Heat Exchanger B, dated 05/14/2002
Visual Inspection Checklist for SW Pump A, dated 7/11-16/2002
Visual Inspection Checklists for HVAC Chiller 1C; dated 10/01/2002, 03/21/2003, and 04/04-14/2003
Visual Inspection Checklists for XVG09627A-CC, dated 10/16/2000 and 05/05/2002
Visual Inspection Checklist for XVG09627B, dated 05/15/2002
Calculation DC03650-004, Service Water Pumphouse/Intake Structure Survey Monitoring Data Review, Rev. 14
Preventive Task Sheet (PMTS) 0201112, Visual Inspection of SW Connect Line and Pumphouse Concrete Walls, dated 07/28/2002
PMTS 0201113, Visual Inspection of SW Pond Dams and Discharge Canal, dated 07/28/2002
Ultrasonic Test Data Base, undated
SW Chemistry Treatment Data, 07/02/2002 to 04/29/2003
PMTS 0116451, SW HX Performance Pre and Post Outage Data for CC A HX, dated 04/08/2002
PMTS 0116452, SW HX Performance Pre and Post Outage Data for CC B HX, dated 06/18/02
PMTS 0107922, SW HX Performance for A EDG Jacket Water HX, dated 05/10/2002
PMTS 0107926, SW HX Performance for B EDG Jacket Water HX, dated 05/20/2002
Surveillance STP0250.007, SW Leak Test, dated 04/27/1999
Surveillance STP0223.002A, SW Pump A and Valve Test, dated 02/26/2003
Surveillance STP0223.002A, SW Pump B and Valve Test, dated 05/07/2003
Surveillance STP0223.002A, SW Pump C and Valve Test, dated 04/23/2003
Surveillance STP230.006JA, Train A SW Full Flow Testing, dated 11/08/2000
Surveillance STP230.006JA, Train B SW Full Flow Testing, dated 11/08/2000

Condition Evaluation Reports

CER 0-C-01-1885, Evaluation of the Need for SW Flow Balance Testing
CER 0-C-02-0139, Eroded Head Cover
CER 0-C-02-0435, SW Return Piping at Minimum Wall Thickness in One Location
CER 0-C-02-0485, HX Cover Below Minimum Wall Thickness
CER 0-C-02-0568, Link Seals Leaking Causing External Corrosion
CER 0-C-02-0742, SW Pipe Wall Thinning
CER 0-C-02-0803, SW Pipe Wall Thinning
CER 0-C-02-1009, Apparent SW System Leak
CER 0-C-02-1279, Possible SW Leak

CER 0-C-02-1417, Technical and Programmatic Issues Associated with SW Leak Investigation
CER 0-C-02-1744, Inconsistent Wall Thickness Test Data
CER 0-C-02-2581, Inadequate SW Heat Exchanger Performance Testing
CER 0-C-03-0435, Engineering Information Request for CCW HXs not Found

Miscellaneous

Response to Generic Letter 89-13, dated 01/31/1990
Notification of Completion-Generic Letter 89-13, dated 12/17/1991
Service Water Health Report, fourth quarter 2002

Section 2OS3 - Radiation Monitoring Instrumentation and Protective Equipment

Procedures and Guidance Documents

HPP [Health Physics Procedure] -154, Issuance and Control of Respiratory Protection Equipment, Revision (Rev.) 11
HPP-166, Operation and Use of the Merlin Gerin Electronic Dosimeters, Rev. 3
HPP-301, Operation of Station Portable Survey Instruments, Rev. 12
HPP-302, Radiation and Contamination Survey Techniques, Rev. 9
HPP-520, Calibration of the WBC-8000 Stand-up Whole-Body Counter, Rev. 5
HPP-604, Setup of Airline Respiratory Equipment, Rev. 9
HPP-611, Calibration of Station Survey Instruments, Rev. 13
HPP-633, Inspection, Maintenance and Storage of Respiratory Protective Devices, Rev. 4
Station Administrative Procedure (SAP) -501, Administrative Controls for Calibration of Health Physics Instrumentation, Rev. 6
SAP-504, Respiratory Protection Program, Rev. 1

Records

WBC-8000 Stand-up Whole-Body Counter, calibrated 02/12/2001, 08/02/2001, 02/04/2002, 08/14/2002, 02/20/2003 (Semiannual Calibration)
Eberline RO-20, Serial Number (SN) 3157, calibrated 02/06/2003
MGP DMC 2000S ED, SN 203643, calibrated 02/17/2003
MGP DMC 2000S ED, SN 204997, calibrated 03/12/2003
Airborne Radiation Monitor (RM-A1), Control Room Supply Air Monitor, Calibrated 12/07/2001*
General Area Radiation Monitor (RM-G) 8, Fuel-handling Bridge Monitor, Calibrated 05/22/2003*
RM-G14, Reactor In-core Instrument Area Monitor, Calibrated 05/09/2002**
RM-G18, Reactor Building High-range Monitor, Calibrated 03/05/2002* (rate meter) and 05/22/2002* (detector)

*18-month calibration cycle
**Refueling-outage calibration cycle

Corrective Action Program Documents

Condition Evaluation Report (CER) 0-C-3-1609, RM-A11 Sample Pump Motor Thermal Overloads Tripped, 05/10/2003
CER 0-C-03-2032, Discrepancy Between FSAR Table 12.1-19 and Technical Specifications Table 3.3-6 with respect to specified range of monitor RM-G8, 06/24/2003
CER 0-C-02-3271, Emergency Status Boards for TSC Found Blocking Access to SCBA Locker for Control Room, 10/11/2002
Special Report 2003-001, Reactor Building High-range General Area Radiation Monitor (RM-G18) Declared Inoperable on May 16, 2003 (06/20/2003 letter to USNRC)

Section 2PS1 - Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems

Procedures and Guidance Documents

HPP-709, Sampling and Release of Radioactive Gaseous Effluents, Rev. 10
HPP-710, Sampling and Release of Radioactive Liquid Effluents, Rev. 11
HPP-827, Setup, Calibration, Quality Control, and Operation of Germanium Detector Spectroscopy Systems, Rev. 3
STP-360.043, Waste Gas Discharge Atmospheric Radiation Monitor RMA0010 Calibration, Rev. 8
STP-360.063, Liquid Waste Effluent Liquid Radiation Monitor RML0005 Calibration, Rev. 6
STP-455.003, Reactor Building Exhaust HEPA and HECA Filter Test, Rev. 3
ICP-360.026, Relating Radiation Monitoring Initial Calibration Sources to Subsequent Calibration Sources, Rev. 1
SAP-1131, Corrective Action Program, Rev. 4
Offsite Dose Calculation Manual, Rev. 23
Final Safety Analysis Report, Amendment 02-01

Records

RM-L5, Liquid Waste Effluent Monitor Calibrations, 06/28/00 - 05/09/03
RM-A10, Waste Gas Discharge Monitor Calibrations, 02/09/99 - 01/15/02
Main Plant Vent Air Total Flowmeter Calibrations, 10/11/99 - 12/26/02
Reactor Building Purge Exhaust Plenum HEPA calibration, 05/24/02
Germanium Detector 1, Serial Number (S/N)11851389, Calibrations, 10/22/02 and 01/02/03
Germanum Detector 2, S/N 2473, Calibrations, 02/24/03 and 02/26/03
Daily QC Checks Count Room Germanium Detectors, 05/25/03 - 06/24/03
Daily QC Checks for Count Room Liquid Scintillation Detector, 06/01/03 - 06/25/03
Interlaboratory Intercomparison Program ‘Hot’ Cross Check Data Sheet, 08/22/02 - 11/15/02
Record of Actions Required for Inoperable Tech Spec Radiation Monitors, 03/30/01 - 05/16/03
Annual Effluent and Waste Disposal Report, 2002
WasteGas (WG)-03-01, Gaseous Waste Release Permit, 02/11/03

Corrective Action Program Documents

Quality Assurance (QA) - Chemistry Health Physics (CHP)-01-004, Environmental & Site Count Room Self Assessment, 01/15/02
CER 0-C-00-0470, Current Calibration Sources for Gaseous Effluent Monitors Are Different from Those Used by the Manufacturer, 04/14/0.
CER 0-C-99-1170, Documentation of the New Calibration Method Used for Liquid Radiation Monitors Is Not Readily Available, 08/20/99

Section 2PS3 - Radiological Environmental Monitoring Program

Procedures and Guidance Documents

HPP-201, Annual Radioactive Effluent Release and Waste Disposal Report, Rev. 4
HPP-202, Interlaboratory Intercomparison Program, Rev. 2
HPP-242, Reporting NRC Performance Indicators, Rev. 0
HPP-646, Calibration of the Eberline PCM-2 Personnel Contamination Monitor, Rev. 2
HPP-648, Operation and Calibration of the Eberline PM-7 Personnel Monitor, Rev. 2
HPP-808, Sample Analysis, Rev. 12
HPP-827, Setup, Calibration, Quality Control, And Operation of Germanium Detector Spectroscopy Systems, Rev. 3
HPP-1000, Conduct of Environmental, Rev. 6
HPP-1022, Environmental Sampling and Analytical Requirements, Rev. 4
HPP-1023, Environmental Sample Control and Tracking, Rev. 4
HPP-1030, Environmental Alpha/Beta Counting and Activity Determination, Rev. 3
HPP-1032, Maintenance, Operation And Use Of The Environmental Gamma Spectroscopy System, Rev. 2
HPP-1041, Environmental TLD Management, Rev. 4
HPP-1051, Environmental Air Sampler Calibration and Maintenance, Rev. 4
HPP-1052, Setup, Operation And Maintenance Of The ISCO 3710 Portable Water Sampler, Rev. 2
HPP-1060, Meteorological Data Verification and Correction, Rev. 4
HPP-1061, Meteorological Checks, Rev. 3
SAP-500, Health Physics Manual, Rev. 11
VC Summer FSAR, Chapter 2, Amendment 02-01
VC Summer Nuclear Station Off Site Dose Calculation Manual, Rev.23, 9/28/1999

Radiation Monitor and Meteorological Instrument Records

Meteorological Tower Trend Data (2001 -Present), 6/10/03
Annual Meteorological Data Recovery Summary by Year, 2001, 2002
Environmental Air Sampler Calibration Record, Sites 6, 7 and 8, 5/16/03
Environmental Air Sampler Calibration Record, Sites 2 and 30, 5/22/03
Environmental Air Sampler Calibration Record, Site 17
Small Articles Monitor (SAM) Calibration Report, SAM-11 S/N 334, 5/6/02, 10/29/02, 4/15/03
Small Articles Monitor Calibration Report, SAM-9 S/N191, 5/6/02, 12/16/02
Calibration Data Sheet for the PCM-2 S/N 101, 6/20/01, 4/20/02,3/20/03
PM-7 Calibration Report S/N 264, 3/21/01, 9/20/01, 5/6/02, 4/15/03

Contamination Monitor Calibration Certificate, PCM-1B S/N 275, 8/15/02, 11/15/02, 5/22/03
Meteorological Site Instrument Calibration, 10/27/01, 12/18/01, 4/18/02, 8/24/02, 10/24/02, 4/23/03
VC Summer Nuclear Station Radiological Environmental Operating Report, 4/14/03
VC Summer Nuclear Station Interlaboratory Intercomparison, 8/22-11/15/02

Corrective Action Program Documents

CER 0-C-98-1042 ITE08501 Failed Low Causing a Loss of the 10m and 61m Delta Temps
CER 0-C-98-1062 ITE08501 Failed Causing Failure of 61m and 40m Delta T's to Fail, was Noted on Met Charts and XCP-6040 Indications
CER 0-C-99-0111 ITE 08501 Appears to Have Failed due to Erratic Readings on Delta T Indicators for Met Tower Data
CER 0-C-99-0198 Met Site Instrument ITE08501 Delta T Erratic
CER 0-C-99-0220 Met Site Ambient Temperature Lower Level (ITE08501) is Operating Erratically
CER 0-C-01-0533 At 1930 hrs 04/15/01, The Met Site 10m Temperature Element (ITE08501) Will Be Inoperable For The T/S 3.3.3.4 LCO of Seven Days
CER 0-C-01-0599 10 Meter RTD Wire Broken During Calibration of System
CER 0-C-02-2119 Lightning Strike Disabled MET tower
CER 0-C-02-2714 Lightning Strikes on Facility Impacted Multiple Systems
CER 0-C-03-0931 10 Meter Wind Direction Not Working
CER 0-C-03-0944 Erratic Temperature Indication (ITI8501B) And (ITI8501A)
CER 0-C-03-0946 While Troubleshooting Delta T Indication Problems Under MWR0304388, a Significant Amount of Water Was Found Inside the Junction Box at the Base of the Met Tower
CER 0-C-03-1697 VC Summer Meteorological Joint Data Recovery Rate for 2002 Was 83.2 Percent. Met Tower Equipment Failure Accounted for More than 98 Percent of the Data Lost
CER 0-C-03-2052 Data Recovery from the Meteorological Tower in 2002 Was less than the Design Objective of 90% as Stated in FSAR 2.3.3.2.4. Data Recovery for 2002 Was Only 83.2%. The Average Data Recovery over the Last Four Years Has Been 87.6%
CER 0-C-03-2044 2001 Annual Radioactive Effluent Release and Waste Disposal Report to NRC Had Incorrect Values Reported for the Meteorological Data Recovery Rates
CER 0-C-02-0839 Air Sampler at Site Number 7 Found Not Running
CER 0-C-02-0853 Environmental TLD at Site 45 (Pomeria Graveyard) Was Missing During Quarterly Change Out
CER 0-C-02-1957 Environmental Air Sampler at Site 7 Found Not Operating
CER 0-C-02-2570 Air Sampler at Environmental Site #7 Found De-energized
CER 0-C-03-0366 During Weekly Change out Found Site 17 Air Sampler Tripped
CER 0-C-03-1000 Breaker Tripped at Environmental Air Sample Site 17
CER 0-C-03-1724 Could Not Calibrate Environmental Air Sampler at Site#17 Due to Problem with Calibrator
CER 0-C-02-3373 While Collecting Weekly Air Samples Found Site # 17 De-energized. Sample for Week 43 Missed
QA-AUD-200212, Environmental Monitoring, 11/25/2002
QA-CHP-01-004 Environmental & Site Count Room Self Assessment, 1/15/2002

Section 4OA1.2 - Performance Indicator Verification

Procedures and Guidance Document Data

HPP-242, Reporting NRC Performance Indicators, Rev. 0.
Monthly PI records, Public Radiation Safety Cornerstone, December 2002 - May 2003.

Corrective Action Program Documents

CER 0-C-02-2564, the Liquid Effluent Activity Goal of 40 mCi Was Exceeded for 2002, 08/07/02.
CER 0-C-02-3146, Waste Monitor Tank Pre-release Redundant Samples Showed Discrepancies, 10/01/02.