



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

January 21, 2005

South Carolina Electric & Gas Company
ATTN: Mr. Jeffrey B. Archie
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 05000395/2004005

Dear Mr. Archie:

On December 31, 2004, the United States 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 January 6, 2005, with Mr. Thomas Gatlin and other members of your staff.

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

Based on the results of this inspection, four self-revealing findings were identified. These findings were determined to involve violations of NRC requirements. However, because of their very low safety significance and because they are entered into your corrective action program, the NRC is treating these findings as non-cited violations (NCVs) consistent with Section VI.A of the NRC Enforcement Policy. 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 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of

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

Sincerely,

/RA/

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

Docket No.: 50-395
License No.: NPF-12

Enclosure: NRC Integrated Inspection Report 05000395/2004005
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.: 05000395/2004005

Licensee: South Carolina Electric & Gas (SCE&G) Company

Facility: Virgil C. Summer Nuclear Station

Location: P. O. Box 88
Jenkinsville, SC 29065

Dates: September 26, 2004 - December 31, 2004

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Enclosure

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SUMMARY OF FINDINGS

IR 05000395/2004005; 09/26/2004 - 12/31/2004; Virgil C. Summer Nuclear Station; Operator Performance during Non-Routine Evolutions and Events, Operability Evaluations, Refueling and Outage Activities, and Radiological Environmental Monitoring Program.

The report covered a three-month period of inspection by resident inspectors and an announced team inspection by four regional radiation protection inspectors. Four self-revealing, Green, non-cited violations (NCVs) 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: Initiating Events

- Green. A self-revealing non-cited violation of Technical Specification (TS) 6.8.1.a was identified for an operator's failure to follow procedures while resetting the "A" train engineered safety features (ESF) loading sequencer self-test circuitry. This resulted in a loss of power to a safety-related emergency bus and the automatic starting of ESF equipment, including an emergency diesel generator to repower the bus.

This finding is more than minor because it affected the initiating events cornerstone attribute of configuration control and affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions by deenergizing a safety-related electrical switchgear bus. The finding is of very low safety significance because the affected mitigating systems were able to perform their safety functions since the redundant train of ESF components was available and the affected ESF equipment responded by aligning to their accident state as expected for the initiating condition. The direct cause of this finding involved the cross-cutting area of Human Performance (Section 1R14).

Cornerstone: Mitigating Systems

- Green. A self-revealing non-cited violation of TS 6.8.1.a was identified for maintenance personnel's failure to properly adjust the close latch release rod associated with the "A" residual heat removal (RHR) pump motor breaker. As a consequence, the pump failed to start on October 13, 2004, during routine plant operations.

This finding is more than minor because it affected the mitigating systems cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences by rendering

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inoperable safety-related equipment for removing reactor core heat. A Significance Determination Process Phase 2 analysis determined that the finding is of very low significance because the "A" RHR pump could have been placed in service to perform its safety functions by operator actions. The pump breaker could be manually closed prior to exceeding the time of bulk boiling in the reactor vessel during accident conditions. The direct cause of this finding involved the cross-cutting area of Human Performance (Section 1R15).

Cornerstone: Barrier Integrity

- Green. A self-revealing non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," was identified for the failure to take timely and adequate corrective actions to preclude repetition of a significant condition adverse to quality concerning the inoperability of reactor containment pressure transmitter IPT00950.

This finding is more than minor because it affected the barrier integrity cornerstone attribute of containment pressure control equipment performance (i.e., reactor building spray system) and adversely affected the cornerstone objective to provide reasonable assurance that the containment barrier protect the public from radionuclide releases caused by accidents or events. The finding is of very low safety significance because the event did not involve an actual reduction in the defense-in-depth for atmospheric pressure control of the reactor containment since the three redundant containment pressure instruments remained available to initiate the reactor building spray safety functions. The direct cause of this finding involved the cross-cutting area of Problem Identification and Resolution (Section 1R20).

Cornerstone: Public Radiation Safety

- Green. A self-revealing non-cited violation of 10 CFR 20.1501 and 20.1802 was identified concerning the licensee's failure to adequately survey the content of a metal box prior to its release from the restricted area and the resulting loss of control of licensed material. The box was sold to a licensee employee and was taken to the employee's residence. When the box was later opened, an assortment of tools and material were found to be contaminated with low-level byproduct material.

This finding was more than minor because it was associated with the cornerstone attribute of material release and it affected the cornerstone objective to ensure adequate protection of public health and safety from exposure to radioactive materials released into the public domain. The finding involving radioactive material control was determined to be of very low safety significance because it did not result in a dose to the public greater than 0.005 rem (Section 2PS3).

B. Licensee-Identified Violations

None.

REPORT DETAILS

Summary of Plant Status

The unit began the inspection period at 100 percent rated thermal power (RTP). On December 6, power was reduced to two percent RTP (Mode 2) and the generator was taken off-line due to the failure of a one-inch secondary steam extraction line. The unit remained in Mode 2 (less than five percent RTP) until repairs were completed. The unit entered Mode 1 (greater than five percent RTP) on December 9 and was returned to full power on December 10. The unit operated at or near full power for the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection

.1 Unexpected Weather Conditions

a. Inspection Scope

The inspectors performed a readiness inspection during the week of September 27 for impending adverse weather conditions, i.e., high winds, heavy rains, and possible tornados, associated with Hurricane Jeanne. The inspectors reviewed the site's preparations and evaluated the implementation of Operations Administrative Procedure (OAP)-109.1, "Guidelines for Severe Weather." The inspectors reviewed the licensee's corrective action program (CAP) database to verify that adverse weather related problems were being identified at the appropriate level and appropriately resolved.

b. Findings

No findings of significance were identified.

.2 Seasonal Weather Susceptibilities

a. Inspection Scope

The inspectors performed a seasonal weather related condition inspection to review the licensee's preparation for cold weather. The inspectors verified the licensee had implemented applicable sections of procedure OAP-109.1. The inspectors walked down accessible areas of risk-significant equipment, including the sodium-hydroxide storage tank level instrumentation, condensate storage tank level instrumentation, and refueling water storage tank level instrumentation, to assess whether the equipment was adequately protected from cold weather conditions. The inspectors reviewed the licensee's CAP database to verify that adverse weather related problems associated with the above mentioned equipment were being identified at the appropriate level, entered into the CAP, and appropriately resolved.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment.1 Availability of Redundant Equipmenta. Inspection Scope

The inspectors conducted three partial equipment alignment walkdowns (listed below) to evaluate the operability of selected redundant trains or backup systems with the other train or system inoperable or out-of-service (OOS). 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 inspections 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. Documents reviewed are listed in the Attachment.

- “B” motor driven emergency feedwater (EFW) pump and turbine driven EFW pump, while the “A” motor driven EFW pump was OOS for planned maintenance and surveillance testing;
- “A” train residual heat removal (RHR) pump, while “B” RHR pump was OOS for planned maintenance; and,
- “A” and “B” service water (SW) trains, while “C” SW pump was OOS for planned maintenance.

b. Findings

No findings of significance were identified.

.2 Semiannual Inspectiona. Inspection Scope

The inspectors performed a detailed review and walkdown of accessible portions of the 125-volt DC distribution system. The inspectors reviewed outstanding MWRs 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 system components. Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

.1 Routine Inspection

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 nine areas (respective fire zones also noted):

- Control room (fire zone CB-17.1);
- 1DA switchgear room (fire zone IB-20);
- Relay room solid state protection system instrumentation and inverter (fire zones CB-6, 10, and 12);
- Auxiliary building switchgear room 1DB1/1DB2X (fire zone AB-1.29);
- Turbine driven EFW pump room (fire zone IB-25.2);
- "A," "B," and "C" charging pump rooms (fire zones AB-1.5, AB-1.6, AB-1.7);
- RHR and reactor building spray pump rooms (fire zones AB 1.1.3, 1.2, 1.3, 1.10.2);
- Fuel handling building during hot work modification (fire zone FH-1.4); and,
- Auxiliary, control, and turbine building roofs during modifications with hot work in progress.

b. Findings

No findings of significance were identified.

.2 Annual Fire Drill Inspection

a. Inspection Scope

The inspectors observed performance of a licensee's unannounced fire drill on December 12, 2004, to evaluate the readiness of licensee personnel to prevent and fight fires. The fire drill scenario involved a simulated fuel oil fire in the emergency diesel generator (EDG) building (in the area of the "B" EDG day tank).

The inspectors evaluated the readiness of licensee personnel to prevent and fight fires including the following aspects:

- Observe whether protective clothing and self-contained breathing apparatus (SCBA) equipment were properly worn;
- Determine whether fire hose lines were properly laid out and nozzle pattern simulated being tested prior to entering the fire area of concern;

- Verify that the fire area was entered in a controlled manner;
- Review if sufficient firefighting equipment was brought to the scene by the fire brigade to properly perform their firefighting duties;
- Verify that the fire brigade leader's fire fighting directions were thorough, clear and effective, and that, if necessary, offsite fire team assistance was requested;
- Verify that radio communications with plant operators and between fire brigade members were efficient and effective;
- Confirm that fire brigade members checked for fire victims and fire propagation into other plant areas;
- Observe if effective smoke removal operations were simulated;
- Verify that the fire fighting pre-plans were properly utilized and were effective; and,
- Verify that the licensee pre-planned drill scenario was followed, drill objectives met the acceptance criteria, and deficiencies were captured in post drill critiques.

The inspectors attended the drill critique to ensure that the licensee addressed all observed areas for improvement. Items noted during the drill were captured in CER 0-C-04-3686 in accordance with Fire Protection Procedure (FPP)-026, "Fire/Hazmat Response." Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program

a. Inspection Scope

On October 6, 2004, the inspectors observed performance of senior reactor operators and reactor operators on the plant simulator during licensed operator requalification training. The training scenario (EOP-TIME-012) involved a ruptured steam generator with a loss of offsite power. This simulator exercise was being used also to perform response time validation by the licensee. 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, communication, oversight of supervision, and the evaluators' critique. The inspectors verified that any training issues and operator time line validation issues were appropriately captured in the licensee's CAP.

b. Findings

No findings of significance were identified. Issues involving operator time line validation findings were previously documented in NRC Inspection Report 05000395/2004009.

1R12 Maintenance Effectiveness

a. Inspection Scope

The inspectors evaluated two equipment issues described in the CERs listed below to verify 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 MR program. Selected SSCs were reviewed to verify proper categorization and classification 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. The inspectors reviewed the licensee's controlling procedures, i.e., 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.

- CER 0-C-04-3230, three room leak detection system level switches that failed preventive maintenance functional testing not being evaluated as MPFFs; and,
- CER 0-C-04-3060, "B" instrument air compressor low oil pressure shutdown.

b. Findings

No findings of significance were identified.

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 planned and emergent work items. The inspectors evaluated the five selected work activities 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 unforeseen 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 characterization to determine, as appropriate, whether necessary steps were properly planned, controlled, and executed for the planned and emergent work activities listed below:

- Review of maintenance on "A" motor driven EFW pump SW cross-connect valve XVG01001A-EF, turbine driven EFW pump "A" SW cross-connect valve XVG01008-EF, EFW service water header "A" cross-connect isolation valve XVG01037A-EF, and surveillance testing of SW to EFW cross-connect circuitry;

- Review of maintenance for week of 10/11/04 (including maintenance and surveillance testing of turbine driven EFW pump, loss of offsite power increase risk due to switchyard circuit breaker work, maintenance and surveillance testing of “B” RHR pump, and fire switch functional test for “B” EDG);
- Review of emergent work for “A” RHR pump breaker failure;
- Review of maintenance for week of 11/01/04 (including main steam valve surveillance testing and maintenance on transformers XTF0004 and XTF0006); and,
- Review of maintenance on 230 kV substation circuit breaker, circuit switches, and associated protective relays.

b. Findings

No findings of significance were identified.

1R14 Operator Performance During Non-Routine Evolutions and Events

a. Inspection Scope

The inspectors evaluated operator response and preparations for the two listed non-routine events 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 CAP.

- October 26, inadvertent undervoltage actuation and activation of the “A” train engineered safety features (ESF) loading sequencer, reference CER 0-C-04-3386; and,
- December 6, rapid shutdown from 100 percent RTP to Mode 2 (two percent RTP, and take generator off-line) following report of a steam leak in the turbine building, reference CER 0-C-04-3775.

b. Findings

No findings of significance were identified with the operator actions in response to the events; however, the following finding was identified associated with the human performance error that caused the inadvertent undervoltage actuation of the “A” train ESF loading sequencer.

Introduction. A Green self-revealing non-cited violation (NCV) of TS 6.8.1.a was identified for operator failure to follow procedures while resetting the “A” train ESF loading sequencer self-test circuitry.

Description. On October 26, 2004, an operator inadvertently actuated the “A” train ESF loading sequencer undervoltage test toggle switch while attempting to reset the sequencer self-test circuitry following completion of a maintenance run on the “A” EDG. This caused an undervoltage signal to be initiated, which tripped the normal and alternate feeder breakers for the safety-related 7.2 KV switchgear bus 1DA, and

resulted in an automatic start of the “A” EDG and its output breaker closing to supply the bus. Additionally, the “A” train ESF equipment automatically started and ran as expected for an “A” train undervoltage condition, i.e., the “A” RHR pump, “A” EFW pump, “A” SW booster pump, and “A” reactor building cooling unit fan started, and the lock-out for the “A” spent fuel pump actuated. Operators responded properly to the event and restored normal offsite power to the 1DA bus in approximately 32 minutes and secured the “A” EDG in approximately 39 minutes after initiation of the event.

The operator was performing Annunciator Response Procedure (ARP)-001-XCP-636, Revision (Rev.) 9, Supplemental Action No. 2, for locally resetting the sequencer self-test circuitry. The ARP required placing the self-test ON/RESET toggle switch to the RESET (down) position momentarily and then back up to the ON position. While returning the switch to the ON position, the operator continued his upward hand motion causing him to accidentally manipulate the undervoltage test toggle switch, located directly above the self-test switch.

Analysis. This finding is more than minor because it affected the initiating events cornerstone attribute of configuration control and affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions by deenergizing a safety-related electrical switchgear bus. A Safety Significance Process (SDP) Phase 1 analysis characterized the finding as having very low safety significance (Green) because the affected mitigating systems were able to perform their safety functions since the redundant train of ESF components was available and the affected ESF equipment responded by aligning to their accident state as expected for the initiating condition. The direct cause of this finding involved the cross-cutting area of Human Performance.

Enforcement. TS 6.8.1.a requires, in part, that written procedures be implemented covering activities listed in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978, which includes procedures for abnormal, off normal or alarm conditions. Contrary to the above, on October 26, 2004, an operator failed to follow ARP-001-XCP-636 when he inadvertently manipulated the undervoltage toggle switch on the sequencer control panel as he was resetting the sequencer self-test circuitry. Because the finding is of very low safety significance and has been entered into the corrective action program as CER 0-C-04-3386, this violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000395/2004005-01, Failure to Follow Procedure for Resetting ESF Load Sequencer Results in Inadvertent Safety-Related Bus Deenergization.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed four 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. Also, the inspectors verified that the operability evaluations were performed in accordance with procedure SAP-1131, "Corrective Action Program."

- CER 0-C-04-3262, "A" RHR pump breaker failed to close during surveillance testing;
- CER 0-C-04-3326, Resolution of operator timeline validation for emergency feedwater isolation during steam line break;
- CER 0-C-04-3271, Steam propagation barrier door DRCB-302 left open, door closure mechanism found preventing closure; and,
- CER 0-C-04-3856, "C" SW pump breaker charging springs failed to charge.

Two additional operability evaluations (that are credited as part of the baseline resident inspection program) were performed this inspection period under an NRC team inspection directed by Temporary Instruction (TI) 2515/158, "Functional Review of Low Margin/Risk Significant Components and Human Actions."

b. Findings

No findings of significance were identified with the quality of the licensee's operability evaluations; however, the following finding was identified associated with a human performance error that resulted in the "A" RHR pump motor breaker failure documented in CER 0-C-04-3262. The results of the TI 2515/158 team inspection operability reviews are documented in NRC Inspection Report 05000395/2004009.

Introduction. A Green self-revealing NCV of TS 6.8.1.a was identified for maintenance personnel failure to properly adjust the close latch release rod associated with the breaker to the "A" RHR pump motor.

Description. On March 19, 2003, electrical maintenance personnel replaced the control device associated with the "A" train RHR pump motor breaker. As part of this replacement, the breaker's close latch release rod had to be adjusted (setup) to ensure proper breaker closure. Following this work, the breaker operated approximately 29 times successfully between March 20, 2003 until August 5, 2004, when the last successful "A" RHR pump and valve test was performed. On October 13, 2004, during the next start attempt (to conduct opposite train RHR pump and valve testing), the breaker failed to close. The licensee's investigation revealed that the breaker's close latch release rod was out of adjustment by two full turns. Since there was no other record of having adjusted the release rod since the March 19, 2003, control device replacement, the licensee concluded that the release rod was improperly adjusted during the breaker control device replacement. As a result of normal breaker grease hardening and wear over time, greater force was required for the close latch release rod to actuate the secondary close latch which causes the breaker to close. Eventually,

these resistive forces exceeded the force imparted by the misadjusted close latch release rod resulting in the breaker not being capable of closing.

Analysis. This finding is more than minor because it affected the mitigating systems cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences. Since this condition had a potential safety significance greater than Green after completing the SDP Phase 2 analysis, a Senior Reactor Analyst performed a SDP Phase 3 analysis to determine the safety significance. In the SDP Phase 3 analysis, it was determined that the "A" RHR train could be easily placed into service (via operator manual breaker closure actions) prior to exceeding the time of bulk boiling in the reactor vessel, therefore an additional recovery credit from the SDP Phase 2 analysis was warranted. Consequently, NRC Manual Chapter 0609, Appendix G Worksheet 9 (i.e., the SDP Phase 2 analysis) was adjusted to include RHR recovery credit. Based on this, the finding was determined to be of very low safety significance. The direct cause of this finding involved the cross-cutting area of Human Performance due to the failure to properly adjust the breaker's close latch release rod.

Enforcement. TS 6.8.1.a requires, in part, that written procedures be implemented covering activities listed in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978, which includes maintenance procedures on safety-related equipment such as RHR pump motor breakers. V. C. Summer Electrical Maintenance Procedure (EMP)-405.002, "ITE Air Circuit Breaker Maintenance," Rev. 21, Section 7.8, describes the steps for properly adjusting the close latch release rod for RHR pump motor breakers. Contrary to EMP-405-002, on March 19, 2003, personnel failed to properly adjust the close latch release rod for the "A" train RHR pump motor breaker following replacement of the breaker's control device resulting in the subsequent breaker failure to close on October 13, 2004. Because the finding is of very low safety significance and has been entered into the corrective action program as CER 0-C-04-3262, this violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000395/2004005-02, Failure to Follow Procedure for Adjusting Close Latch Release Rod of "A" Train RHR Pump Motor Breaker Resulting in Breaker Failure to Close.

1R16 Operator Work-arounds

a. Inspection Scope

The inspectors reviewed the licensee's list of identified operator work-arounds, burdens, and challenges to determine whether any new items since the previous inspection period would adversely affect the operators' ability to implement abnormal or emergency operating procedures. One risk significant operator work-around review was performed in detail (reference CER 0-C-04-3416). This work-around was documented in Station Order 04-13 and required the operators to implement contingency actions for potential blockage of the emergency feedwater system discharge flow control valves following swapper to the backup service water suction source.

Additionally, the inspectors reviewed the licensee's list of identified operator work-arounds, burdens, and challenges to assess the cumulative effect on the functional capability, reliability or availability of any related mitigating system. The inspectors reviewed the human reliability aspect of the cumulative effect of the work-arounds to determine if they affected the operators' ability to respond in a correct and timely manner to any initiating event or their ability to implement abnormal or emergency operating procedures.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications

a. Inspection Scope

Two permanent plant modification reviews (that are credited as part of the resident baseline inspection program) were performed and documented this inspection period under a team inspection as directed by TI 2515/158, "Functional Review of Low Margin/Risk Significant Components and Human Actions."

b. Findings

No findings of significance were identified. The results of the TI 2515/158 team inspection permanent plant modification reviews are documented in NRC Inspection Report 05000395/2004009.

1R19 Post-Maintenance Testing

a. Inspection Scope

For the six maintenance activities listed below, the inspectors reviewed the associated post-maintenance testing procedures and witnessed either the testing and/or reviewed test records to assess whether: (1) the effect of testing on the plant had been adequately addressed by control room and/or engineering personnel; (2) testing was adequate for the maintenance performed; (3) test acceptance criteria were clear and adequately demonstrated operational readiness consistent with design and licensing basis documents; (4) test instrumentation had current calibrations, range, and accuracy consistent with the application; (5) tests were performed as written with applicable prerequisites satisfied; (6) jumpers installed or leads lifted were properly controlled; (7) test equipment was removed following testing; and (8) equipment was returned to the status required to perform its safety function. The inspectors verified that these activities were performed in accordance with General Test Procedure (GTP)-214, "Post Maintenance Testing Guideline."

- MWRs 0411729, 0411730 and 0411732, calibration of circuit breaker thermal overloads for "A" train SW valves;

- MWR 0413396, breaker testing for 1B battery charger;
- MWR 0405489, visual inspection of cycle relays and data for breaker associated with main steam header "B" EFW pump supply valve XMC1DA2X05H;
- MWR 0420926, investigate and repair "B" main steam isolation valve XVM02801B-MS following stroke test failure;
- MWR 0421043, investigate and repair "C" SW pump motor breaker failure; and,
- MWR 0414706, replacement of boric acid blender inlet header check valve XVC08429-CS.

b. Findings

No findings of significance were identified.

1R20 Refueling and Other Outage Activities

a. Inspection Scope

On December 6, 2004, the unit began a short notice outage to Mode 2 (reactor critical less than five percent RTP with generator off-line), to repair a secondary extraction steam line leak on a one-inch equalization/drain line under the high pressure turbine. The outage was completed on December 9 when the turbine-generator was placed in service and the unit was returned to 100 percent power on December 10. During the outage, the inspectors reviewed the licensee's outage risk assessments and outage scheduling to verify that the licensee had appropriately considered risk, industry experience and previous site specific problems, and to confirm that the licensee had mitigation/response strategies for losses of any key safety functions. In the area of licensee control of outage activities, the inspectors reviewed equipment removed from service to verify that defense-in-depth was maintained in accordance with applicable TS and that configuration changes due to emergent work and unexpected conditions were controlled in accordance with the outage schedule and risk assessments.

The inspectors reviewed selected components which were removed from service to verify that tags were properly installed and that associated equipment was appropriately configured to support the function of the clearance.

During the outage, the inspectors:

- Reviewed reactor coolant system pressure, level, and temperature instruments to verify that those instruments were installed and configured to provide accurate indication;
- Reviewed the status and configuration of electrical systems to verify that those systems met TS requirements and the licensee's outage risk control plan. The inspectors also evaluated if switchyard activities were controlled commensurate with their risk significance and if they were consistent with the licensee's outage risk control assessment assumptions; and,
- Observed licensee control of containment penetrations and containment entries to verify that the licensee controlled those penetrations and activities in

accordance with the appropriate TS and could achieve/maintain containment closure for required conditions.

The inspectors also reviewed the following activities for conformance to applicable procedural and TS requirements:

- Plant shutdown to Mode 2 and associated Mode 2 activities;
- Reactivity controls; and,
- Plant startup to Mode 1, placing the generator on-line and power ascension activities.

The inspectors reviewed various problems that arose during the outage to verify that the licensee was identifying problems related to outage activities at an appropriate threshold and entering them in the CAP. The more significant CERs that were specifically reviewed by the inspectors are listed below.

- CER 0-C-04-3775, steam leak under the high pressure turbine requiring shutdown;
- CER 0-C-04-3772, "C" feed regulating valve slow to respond to demand signals;
- CER 0-C-04-3773, "A" feedwater pump oscillations during unit shutdown;
- CER 0-C-04-3774, digital rod position failure for rod F6 during unit shutdown;
- CER 0-C-04-3786, "B" main steam isolation valve failure to fully close;
- CER 0-C-04-3803, erratic reactor building pressure transmitter IPT00950; and,
- CER 0-C-04-3811, work performed without an approved work document.

b. Findings

No findings of significance were identified with the overall outage activities; however, the following finding was identified involving inadequate corrective action for a repeat equipment problem documented in CER 0-C-04-3803.

Introduction. A Green self-revealing NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," was identified for the failure to take timely and adequate corrective actions to preclude repetition of a significant condition adverse to quality concerning the inoperability of reactor containment pressure transmitter IPT00950.

Description. On April 11, 2004, during plant startup and in response to an annunciator, the control room operators discovered indications that reactor containment pressure transmitter IPT00950 reading was drifting low. The transmitter was declared inoperable and the bistable for the associated high pressure channel for reactor building spray system actuation was tripped in accordance with TS. The licensee's Investigation determined that during plant startup conditions, steam released from the "A" main steam (MS) power operated relief valve (PORV) could be drawn into the ventilation system and result in IPT00950 drifting low due to moisture and temperature effects, thereby affecting its operability. The licensee entered the condition into the corrective action program under CER 0-C-04-1067. Temporary corrective actions were taken to return the pressure transmitter to service and long term corrective actions were evaluated and

planned under this CER. However, the licensee failed to implement measures to prevent recurrence when similar conditions could recur during startup/shutdown operations prior to implementation of the long term corrective actions. The inspectors determined that the licensee's corrective actions were not effectively controlled and implemented to preclude repetition of the identical reactor containment pressure transmitter becoming inoperable for the same reason during startup operations on December 8, 2004. Following this incident, the licensee developed short term contingency actions to preclude any subsequent transmitter impact from exhaust from the "A" MS PORV until long term actions could be implemented during the upcoming refueling outage.

Analysis. This finding is more than minor because it affected the barrier integrity cornerstone attribute of containment pressure control equipment performance (i.e., reactor building spray system) and adversely affected the cornerstone objective to provide reasonable assurance that the containment barrier protect the public from radionuclide releases caused by accidents or events. A SDP Phase 1 analysis characterized the finding as having very low safety significance (Green) because the event did not involve an actual reduction in the defense-in-depth for atmospheric pressure control of the reactor containment since the three redundant containment pressure instruments remained available to initiate the reactor building spray actuation function. The direct cause of this finding involved the cross-cutting area of Problem Identification and Resolution.

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 the failure of containment pressure transmitter 1PT00950 on April 11, 2004. As a result, a repetitive condition occurred on December 8, 2004, with the same transmitter becoming inoperable due to the same environmental conditions. Because the finding is of very low safety significance and has been entered into the corrective action program as (CERs 0-C-04-1067, 0-C-04-1070, 0-C-04-3803 and 0-C-04-3840), this violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000395/2004005-03, Failure to Take Adequate Corrective Actions to Preclude Repetitive Inoperability of Containment Pressure Transmitter IPT00950.

1R22 Surveillance Testing

a. Inspection Scope

For the two 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-121.002, "Main Steam Operability Test," includes EFW steam supply valves and MS Header PORVs; and,
- STP-144.02, "Operational Leakage Test."

Four additional surveillance tests (that are credited as part of the baseline resident inspection program) were performed and documented in this inspection period under a team inspection directed by TI 2515/158, "Functional Review of Low Margin/Risk Significant Components and Human Actions."

b. Findings

No findings of significance were identified. Results of the TI 2515/158 team inspection surveillance test reviews were documented in NRC Inspection Report 050000395/2004009.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation

a. Inspection Scope

On October 27, 2004, the inspectors reviewed and observed the performance of a simulator drill that involved a reactor trip and loss of offsite power (LOR-SA-02A) which required the declaration of a site area emergency. The inspectors assessed emergency procedure usage, emergency plan classification, and emergency notifications. The inspectors attended the licensee's drill critique to ensure that drill performance deficiencies and enhancements were captured in the licensee's CAP.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstones: Occupational Radiation Safety and Public Radiation Safety

2OS1 Access Control To Radiologically Significant Areas

a. Inspection Scope

Access Controls Licensee program activities for monitoring workers and controlling access to radiologically-significant areas and tasks were inspected. The inspectors evaluated procedural guidance, directly observed implementation of administrative and established physical controls, assessed worker exposures to radiation and radioactive material, and appraised radiation worker and technician knowledge of, and proficiencies in implementing radiation protection (RP) program activities.

During the onsite inspection, radiological controls for forced outage activities were observed and discussed. The inspectors attended a pre job briefing for a containment entry. The reactor was critical but power output was less than five percent of rated power (Mode 2). The inspectors reviewed the radiation work permits (RWPs) associated with work in containment while the unit was in mode two. The inspectors identified three jobs that were expected to have the highest cumulative radiation exposure and reviewed the associated as low as reasonably achievable (ALARA) packages. This review included incorporation of industry experience, the use of temporary shielding, airborne radioactivity, and contamination controls. The RWPs were reviewed by the inspectors for consistency with the planning documentation and logical task breakdown. The inspectors discussed plant collective exposure trends and source terms with plant ALARA supervision.

Occupational workers' adherence to selected RWPs and Health Physics (HP) Technician proficiency in providing job coverage were evaluated by the inspectors through direct observations, review of selected exposure records and licensee investigations, and interviews with licensee staff. Occupational exposure data associated with direct radiation, potential radioactive material intakes, and from discrete radioactive particles were reviewed and assessed independently.

RP program activities were evaluated by the inspector against 10 CFR 19.12; 10 CFR 20, Subparts B, C, F, G, and J; FSAR details in Section 11, "Waste Disposal and Radiation Protection System," and Section 12.3, "Health Physics Program;" and approved licensee procedures. Licensee guidance documents, records, and data reviewed within this inspection area are listed in Section 2OS1 of the report Attachment.

Problem Identification and Resolution Licensee CERs associated with radiological controls, personnel monitoring, and exposure assessments were reviewed and discussed with responsible licensee representatives. The inspectors assessed the licensee's ability to identify, characterize, prioritize, and resolve the identified issues in accordance with licensee procedures listed in the report Attachment.

b. Findings

No findings of significance were identified.

2OS3 Radiation Monitoring Instrumentation and Protective Equipment

a. Inspection Scope

Area Radiation Monitoring and Post-Accident Sampling Systems The operability, availability, and reliability of selected direct area radiation monitors (ARM) and continuous air monitoring equipment used for routine and accident monitoring activities were reviewed and evaluated. The inspectors directly observed ARM equipment material condition, installed configurations (where accessible), and the conduct of and/or results of performance checks for selected monitors. Procedurally established alarm set-points were corroborated and performance check details were reviewed for selected

ARM equipment through discussions and direct observation of Control Room instrumentation panel operations, settings, and monitor response readouts. Current calibration data for selected radiation monitoring equipment listed in section 2OS3 of the report Attachment were reviewed and discussed with responsible staff.

The inspectors evaluated Post Accident Sampling System (PASS) program activities. The evaluation included a review of current program guidance, observation of the material condition of PASS equipment/instrumentation, and review of surveillance results for the PASS system and reactor building atmospheric monitor (RM-A2) which was being used to satisfy a PASS system function.

Program guidance, performance activities, and equipment material condition for the direct radiation detection instrumentation and continuous air sampling equipment were reviewed against details documented in TS 3/4.3.3, 10 CFR Parts 20 and 50, FSAR Section 11, and associated procedures. Radiation detection and sampling equipment required for use in accident monitoring also was reviewed against applicable sections of NUREG 0737, "Clarification of TMI Action Plan Requirements," and Regulatory Guide (RG) 1.97, "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant and Environs Conditions During and Following an Accident," Rev. 3. Licensee guidance documents, records, and data reviewed within this inspection area are listed in Section 2OS3 of the report Attachment.

Personnel Survey Instrumentation Current program guidance, including calibration and operation procedures, and its implementation to maintain operability and accuracy of selected portable survey instruments was reviewed and evaluated. The inspectors reviewed current calibration data for selected personnel survey instruments and assessed operability of various portable survey instruments staged or in use by the HP staff. The inspectors observed calibration of a Teletector survey meter and an electronic dosimeter. Included in this observation were the daily source checks for an RO-20, RO-2, RAM-10M, and Teletector survey meters and comparison of the results to specified tolerances. Responsible staff's knowledge and proficiency regarding portable survey instrumentation calibration activities were evaluated through observation, interviews, and record reviews. The accuracy and operability determinations for instrumentation used to perform surveys in high radiation or greater areas were assessed.

Operability and analysis capabilities of the whole body counting (WBC) equipment for monitoring internally deposited radionuclides and personnel contamination monitor (PCM) equipment and portal monitoring (PM) equipment utilized for surveys of individuals exiting the radiologically controlled area and protected area were evaluated. For both PCM and PM equipment, the inspectors examined current calibrations and selected performance check data, and directly observed demonstrations of PCM and PM daily source checks. The sensitivity of PCM equipment and alarm set points were evaluated. The WBC library data, calibrations, daily source checks and cross-check analysis results were reviewed by the inspectors and discussed with cognizant licensee personnel.

Licensee activities associated with personnel radiation monitoring instrumentation were reviewed against FSAR Section 12, 10 CFR 20.1204 and 20.1501, and applicable licensee procedures listed in Section 2OS3 in the report Attachment.

Respiratory Protection - Self-Contained Breathing Apparatus (SCBA) The licensee's respiratory protection program guidance and its implementation for SCBA equipment were evaluated. The number of staged SCBA units, including spare bottles, and their general material and operating condition were observed during tours of the Control Room, the Technical Support Center, and the 412' Control Building hallway. The inspectors reviewed and evaluated current records associated with supplied air quality and maintenance of staged SCBA equipment. Proficiency and knowledge of staff responsible for maintaining SCBA equipment were evaluated through discussions and demonstration of an SCBA monthly functional test on selected units. The inspectors reviewed records and evaluated status of medical qualification determinations, fit test results, and training status for SCBA qualified individuals. The licensee's capability for refilling and transporting air bottles to and from the control room during emergency situations was discussed with cognizant licensee personnel.

Licensee activities associated with maintenance and use of SCBA equipment were reviewed against 10 CFR Part 20.1703; FSAR Section 12; RG 8.15, Acceptable Programs for Respiratory Protection, Rev. 1; ANSI-Z88.2-1992, American National Standard Practices for Respiratory Protection; and applicable procedures as listed in Section 2OS3 of the report Attachment.

Problem Identification and Resolution The inspectors reviewed internal assessments of RP activities, focusing on findings related to radiation monitoring instrumentation and protective equipment. Selected licensee CERs associated with area radiation monitoring equipment, portable radiation detection instrumentation, and respiratory protective program activities were reviewed and assessed. The inspectors evaluated the licensee's ability to identify, characterize, prioritize, and resolve the identified issues. Specific corrective action program documents reviewed and evaluated are listed in Section 2OS3 of the report Attachment. Reviews of internal exposures exceeding 50 mrem were evaluated and discussed with cognizant licensee personnel.

b. Findings

No findings of significance were identified.

2PS1 Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems

a. Inspection Scope

Effluent Processing Equipment The inspectors reviewed the operability and reliability of selected radioactive effluent process sampling and detection equipment used for routine and accident monitoring activities. Inspection activities included review of the most recent calibration records and direct observation of the following equipment: Liquid Waste Effluent Radiation Monitors, RM-L5 and RM-L9; Airborne Waste Gas Discharge

Radiation Monitor, RM-A10; Main Plant Vent Gaseous Exhaust Radiation Monitor, RM-A3; and Airborne Reactor Building Purge Exhaust Radiation Monitor, RM-A4. The inspectors observed the material condition of the effluent monitoring equipment and assessed the installed configurations, where accessible. 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. In addition, the radwaste system engineer was interviewed regarding liquid and gaseous radwaste system configuration and effluent monitor operation. The inspectors also reviewed applicable parts of 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; the FSAR; the Offsite Dose Calculation Manual (ODCM); and 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." Procedures and records reviewed during the inspection are listed in the report Attachment.

Effluent Release Processing and Quality Control (QC) Activities Radiological Effluents

The inspectors directly observed and evaluated licensee proficiency in effluent release processing, included a review of effluent release procedural guidance.

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 selected gamma spectroscopy detectors. In addition, results of the radiochemistry cross-check program were discussed for calendar year (CY) 2003. The inspectors also reviewed the 2003 Annual Effluent Report to identify any anomalous releases. Reviewed documents are listed in the report Attachment.

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.

Problem Identification and Resolution Licensee corrective action program documents 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 SAP-1131, "Corrective Action Program." Documents reviewed are listed in the report Attachment.

b. Findings

No findings of significance were identified.

2PS3 Radiological Environmental Monitoring Program (REMP)

a. Inspection Scope

REMP Implementation The licensee's Annual Radiological Environmental Operating Reports for CY 2002 and 2003 were reviewed and discussed with cognizant licensee representatives. The inspectors discussed and evaluated the reported data for trends in radionuclide concentrations, anomalous/missing data, and land-use census information. QC activities and data for selected sample types listed in the reports were reviewed and evaluated, including inter-laboratory comparison results, semiannual self-assessments by the vendor laboratory, lower limit of detection (LLD) determinations, and semiannual air sample pump air flow calibration data.

Equipment operational status and staff proficiency for implementing REMF activities were assessed through a review of records, observations of equipment material condition and operating characteristics, assessment of selected sample collection activities, and discussion of collection techniques for sample matrices not directly observed. Collection of weekly air particulate filters/charcoal cartridges and air flow rate determinations were observed at all sampling station locations. During observations of air sample collection, the inspectors evaluated the proficiency of collection staff and assessed the adequacy and implementation of selected collection techniques.

REMP guidance, implementation, and results were reviewed against ODCM details and applicable procedures listed in Section 2PS3 of the report Attachment.

Meteorological Monitoring Program The inspectors toured the meteorological tower and its supporting instrumentation and observed the physical condition of the equipment. The inspectors compared system generated data with data from the Control Room instrumentation. The data was also compared with the inspectors' observations of wind direction and speed measured at the tower. The inspectors also 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 meteorological tower data recovery for CY 2004 was greater than 90 percent as described in Section 2.3.3.2.4 of the FSAR.

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 report Attachment.

Unrestricted Release of Materials from the Radiologically Controlled Area (RCA) RP program activities associated with the unconditional release of potentially contaminated materials from RCA egress points were evaluated. The evaluation included a review of calibration records associated with the small article monitor (SAM) equipment located at the RCA exit portal. The inspectors observed source checking of

SAM equipment. Source activity and radionuclides used for checks and equipment minimum detectable activities were discussed with an instrument technician. Provisions for monitoring hard-to-detect nuclides were also discussed.

The Inspectors verified that radiation detection sensitivities were consistent with NRC guidance in IE Circular 81-07, "Control of Radioactively Contaminated Material," May 14, 1981, IE Information Notice 85-92, and the ODCM. Documents reviewed are listed in Section 2PS3 of the report Attachment.

Problem Identification and Resolution Audits, self-assessments and selected licensee CERs associated with meteorological monitoring activities and unrestricted release of materials from the RCA were reviewed and discussed with responsible licensee representatives. In addition, licensee quality assurance audits and vendor self-assessments associated with REMP activities were reviewed and discussed with cognizant licensee personnel. The inspectors assessed the licensee's ability to identify, characterize, prioritize, and resolve the identified issues. Corrective action program documents were reviewed and evaluated for effective corrective actions. These documents are identified in Section 2PS3 of the report Attachment.

b. Findings

Introduction. A Green self-revealing NCV of 10 CFR 20.1501 and 20.1802 was identified for the failure to adequately survey and control radioactive material which was inside a B-152 metal box that was sold to a licensee employee.

Description. On September 23, 2004, the licensee was notified by a site employee that he suspected the contents of a box he had purchased from the licensee's Investment Recovery Group may include radioactive material. The employee had purchased the B-152 metal box in March 2004 but had not opened it until the evening of September 22, 2004, at which time he noticed small hand tools that were painted yellow. Knowing yellow paint was used to identify contaminated tools, the employee closed the box and notified the licensee's HP staff the following day. An HP technician was sent to the employee's residence to survey the items. Based on initial surveys, all of the items were returned to V. C. Summer, where detectors with greater sensitivity could monitor the items for radioactive materials.

At the site, a survey of all the items from the box was performed with a SAM. This survey resulted in the SAM alarming with a reading of 16,323 disintegrations per minute (dpm). Surveys of individual items identified that one tool (a magnetic base for a dial indicator) had fixed contamination that alarmed the SAM at 4,609 dpm and had 120 corrected counts per minute (ccpm) when surveyed with a frisker. This exceeded the criteria for unconditional release of material from the RCA as specified in Health Physics Procedure (HPP)-158, "Contamination Control for Equipment and Materials." HPP-158 allows the release of items when monitored by a SAM without receiving an alarm or by a clean wipe and a clean frisk survey. All the other tools and the metal box satisfied the release criteria in HPP-158. Also found in the box was a small quantity (approximately 60 grams) of grit/dirt, that when analyzed was found to contain 1.079 microrcuries per

gram of Co-60. The licensee found no loose contamination on any of the tools including the metal box. Based on discussions with the licensee and a review of CER 0-C-04-3051, the inspectors had the following observations:

- e. The licensee was unable to identify how the one contaminated tool and the other six tools with yellow paint were released outside the RCA. The licensee also could not determine if these tools had been surveyed for contamination prior to the sale of the B-152 metal box.
- f. Records were not available to determine if the B-152 metal box was ever located in the RCA or protected area.
- g. The licensee was unable to identify the source of the contaminated grit/dirt or how this material was deposited inside the B-152 metal box.
- h. The magnetic base had a sufficient quantity of fixed contamination that the licensee should have been able to detect the radioactive material and prevent its release from the RCA. The tools that were painted yellow should not have been taken outside of the RCA per the licensee's administrative requirements.

Analysis. Licensees are required to have radioactive monitoring programs in place that prevent the inadvertent release and/or loss of control of licensed radioactive material to an unrestricted area that can cause an actual or credible radiation dose to a member of the public.

This issue is a performance deficiency because radioactive material, which had sufficient levels of contamination to be detectable and did not meet the licensee's release criteria, was released into the public domain. The licensee either failed to perform or performed inadequate surveys prior to the release of this material from the site. This finding was more than minor because it was associated with the public safety cornerstone attribute of material release and it affected the cornerstone objective to ensure adequate protection of public health and safety from exposure to radioactive materials released into the public domain. The finding was determined to be of very low safety significance because it did not result in a dose to the public greater than 0.005 rem (Green).

Enforcement. Subpart F of 10 CFR 20, "Surveys and Monitoring," and specifically 10 CFR 20.1501 requires that each licensee shall make or cause to be made, surveys that: (1) may be necessary for the licensee to comply with the regulations in this part, and (2) are reasonable under the circumstances to evaluate: (i) the magnitude and extent of radiation levels, (ii) concentrations or quantities of radioactive material, and (iii) the potential radiological hazards. Subpart I of 10 CFR 20, "Storage and Control of Licensed Material," and specifically 10 CFR 20.1802, requires that each licensee control licensed material that is in controlled or unrestricted area and that is not in storage. Licensee procedure HPP-158 allows the release of material outside the RCA, if a SAM is used without an alarm or if a clean wipe and a clean frisk are obtained.

Contrary to the above, prior to the sale and transfer of a B-152 metal box to a licensee employee's residence in March 2004, the licensee failed to adequately survey the content of the box. When the box was later opened, it was discovered to contain radioactive material that did not satisfy the release criteria of HPP-158. As a result, radioactive material was released into the public domain where it remained uncontrolled from sometime in March of 2004 to September 23, 2004. The failure to conduct adequate surveys of the items inside the box is a violation of 10 CFR 20.1501 which led to a violation of 10 CFR 20.1802 for improper control of licensed material. Because the failure to adequately perform surveys and control licensed material is of very low safety significance and was entered into the licensee's corrective action program (CER 0-C-04-3051), this violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000395/2004005-04, Failure to Perform Adequate Surveys and Properly Control Licensed Material.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification

.1 Reactor Safety: Initiating Events and Barrier Integrity Cornerstones

a. Inspection Scope

To verify the accuracy of the data reported for the three PIs listed below, the inspectors used performance indicator definitions and guidance contained in Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 2. The inspectors reviewed a selection of station logs, removal and restoration logs, corrective action program documents, Equipment Out of Service computer log records, Licensee Event Reports (LERs), and PI data sheets to verify the basis for reporting each data element. The inspectors also reviewed responses contained in the NRC's frequently asked question PI database and interviewed licensee personnel associated with the PI data collection, evaluation and distribution. During the inspection period, the inspectors also observed the performance of the surveillance activity (STP-144.02, "Operational Leakage Test") that determined the reactor coolant system leak rate to verify reported data accuracy (see Section 1R22). The inspectors verified data and reviewed related issues for the period September 2003 through September 2004 for the following three PIs:

- Unplanned Power Changes (Cornerstone: Initiating Events);
- Reactor Coolant System Leak Rate (Cornerstone: Barrier Integrity); and,
- Reactor Coolant System Activity (Cornerstone: Barrier Integrity).

b. Findings

No findings of significance were identified.

.2 Radiation Safety: Occupational and Public Radiation Safety Cornerstones

a. Inspection Scope

The inspectors sampled licensee submittals for the PIs indicated below for the period of June 2003 through August 2004. To verify the accuracy of the PI data reported during that period, PI definitions and guidance contained in NEI 99-02, were used to verify the basis in reporting for each data element.

Occupational Radiation Safety Cornerstone

- Occupational Exposure Control Effectiveness

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

Public Radiation Safety Cornerstone

- RETS/ODCM Radiological Effluents Occurrence

The inspectors reviewed records used by the licensee to identify occurrences of quarterly doses from liquid and gaseous effluents in excess of the values specified in NEI 99-02 guidance. Those records included monthly effluent dose calculations for CY 2004. The inspectors also interviewed licensee personnel that were responsible for collecting and reporting the PI data. In addition, licensee procedural guidance for classifying and reporting PI events was evaluated. Reviewed documents are listed in Section 4OA1 of the report Attachment.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (PI&R)

.1 Daily Screening of Corrective Action Items

a. Inspection Scope

As required by Inspection Procedure 71152, "Identification and Resolution of Problems," and in order to help identify repetitive equipment failures or specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the licensee's corrective action program. This review was accomplished by either attending

daily screening meetings that briefly discussed major CERs, or accessing the licensee's computerized corrective action database and reviewing each CER that was initiated.

b. Findings and Observations

No findings of significance were identified.

.2 Annual Sample Review

a. Inspection Scope

The inspectors reviewed one issue in detail to evaluate the effectiveness of the licensee's corrective actions for important safety issues documented in CER 0-C-04-3230. This CER was associated with three floor drain leak detection system level switches that had failed routine preventive maintenance functional testing, but had not been declared as MPFFs. The inspectors assessed whether the issue was identified in a timely manner; documented accurately and completely; properly classified and prioritized; adequately considered extent of condition, generic implications, common cause, and previous occurrences; adequately identified root causes/apparent causes; and, identified appropriate corrective actions. Also the inspectors verified the issue was processed in accordance with SAP-1131, "Corrective Action Program."

b. Findings and Observations

No findings of significance were identified; however, the inspectors identified that the licensee's investigation of the CER was not thorough. Specifically, the CER did not address why individual CERs were not initiated at the time that each of the leak detection level switches had failed functional testing. These failures occurred in April, May, and August 2003 and documented in MWRs. In addition, the CER did not address why the system engineer for the leak detection system had not identified the failures through review of MWRs for the MR program. The system engineers are expected to review all open and closed MWRs on their assigned MR equipment at the end of each month to verify that any equipment failures are properly addressed. The inspectors determined that these three failures were missed because of the time delay (greater than 30 days) between when the associated MWRs were actually completed and when they were electronically entered as complete in the MWR database. The licensee initiated CER 0-C-04-3980 to address the inspector's concerns with the adequacy of CER 0-C-04-3230.

.3 Semi-Annual Trend Review

a. Inspection Scope

As required by Inspection Procedure 71152, "Identification and Resolution of Problems," the inspectors performed a review of the licensee's corrective action program and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors' review was focused on repetitive equipment

issues, but also considered trends in human performance errors, the results of daily inspector corrective action item screening discussed in Section 4OA2.1 above, licensee trending efforts, and licensee human performance results. The inspectors' review nominally considered the six-month period of July 2004 through December 2004, although some examples expanded beyond those dates when the scope of the trend warranted. Documents reviewed included licensee monthly corrective action trending reports, engineering system health reports, department self-assessment activities, and quality assurance audit reports.

b. Findings and Observations

No findings of significance were identified. The inspectors evaluated the licensee's trending methodology and observed that the licensee had performed a detailed review. The licensee routinely reviewed the cause codes, involved organizations, key words, and system links to identify potential trends in their corrective action program data. The inspectors compared the licensee's reviews with the results of the inspectors' daily screening and did not identify any discrepancies or potential trends in the data which the licensee had failed to identify.

.4 Cross-Reference to Problem Identification and Resolution Finding Documented Elsewhere in the Report

Section 1R20 describes a self-revealing NCV for failure to take adequate corrective actions to preclude repetition of a significant condition adverse to quality concerning the inoperability of reactor containment pressure transmitter IPT00950.

4OA4 Cross Cutting Aspects of Findings

Section 1R14 describes a self-revealing NCV for an operator failure to follow procedures while resetting the "A" train ESF loading sequencer self-test circuitry. The direct cause of this finding involved the cross-cutting area of Human Performance.

Section 1R15 describes a self-revealing NCV for maintenance personnel failure to properly adjust the close latch release rod associated with the breaker to the "A" RHR pump motor. The direct cause of this finding involved the cross-cutting area of Human Performance.

4OA6 Meetings, Including Exit

Exit Meeting Summary

The inspectors presented the inspection results to Mr. Thomas Gatlin and other members of the licensee staff on January 6, 2005. A subsequent phone call was held with Mr. Ron Clary on January 19, 2005, to discuss the revised inspection results involving unrestricted release of materials from the radiologically controlled area (Section 2PS3).

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

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

J. Archie, Vice President, Nuclear Operations
F. Bacon, Manager, Chemistry Services
L. Blue, Manager, Health Physics Services
M. Browne, Manager, Quality Systems
R. Clary, Manager, Nuclear Licensing
M. Findlay, Manager, Nuclear Protection Services
M. Fowlkes, General Manager, Engineering Services
T. Franchuk, Supervisor, Quality Assurance
S. Furstenberg, Manager, Nuclear Operations Training
D. Gatlin, General Manager, Nuclear Plant Operations
D. Lavigne, General Manager, Organization Effectiveness
G. Lippard, Manager, Operations
J. Nesbitt, Manager, Materials and Procurement
K. Nettles, General Manager, Nuclear Support Services
W. Stuart, Manager, Plant Support Engineering
R. Sweet, Supervisor, Nuclear Licensing
A. Torres, Manager, Planning / Scheduling and Project Management
S. Zarandi, Manager, Maintenance Services

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000395/2004005-01	NCV	Failure to Follow Procedure for Resetting ESF Load Sequencer Results in Inadvertent Safety-Related Bus Deenergization (Section 1R14)
05000395/2004005-02	NCV	Failure to Follow Procedure for Adjusting Close Latch Release Rod of "A" Train RHR Pump Motor Breaker Resulting in Breaker Failure to Close (Section 1R15)
05000395/2004005-03	NCV	Failure to Take Adequate Corrective Actions to Preclude Repetitive Inoperability of Containment Pressure Transmitter IPT00950 (Section 1R20)
05000395/2004005-04	NCV	Failure to Perform Adequate Surveys and Properly Control Licensed Material (Section 2PS3)

LIST OF DOCUMENTS REVIEWED

Section 1R04: Equipment Alignment

SOP-211, "Emergency Feedwater System"
SOP-115, "Residual Heat Removal System"
SOP-117, "Service Water System"
SOP-311, "125 VDC System"
STP-501.001, "Battery Weekly Test"
Drawing E-206-005, "Plant Electrical Distribution"
MWR 0419630, corrosion on several intercell connections for XBA0004

Section 1R05: Fire Protection

Virgil C. Summer FPP-026, Attachment 1, "Drill Planning Guide," and Attachment II, Drill Scenario Number 8;
Fire Protection Pre-Plan for Transformer Area (fire zone DG, 436' elevation); FPP-026, "Fire / Hazmat Response;"
Virgil C. Summer Nuclear Station Critique for unannounced fire drill conducted on December 12, 2004
CER 0-C-04-3686 (4th quarter 2004 fire drill critique comments)

Section 20S1: Access Control To Radiologically Significant Areas

Procedures, Guidance Documents, and Manuals

Health Physics Procedure (HPP)-151, Use of the Radiation Work Permit and Standing Radiation Work Permit, Revision (Rev.) 8
HPP-152, Radiation Control Area Access Control, Rev. 9
HPP-160, Control and Posting of Radiation Control Zones, Rev. 10
HPP-401 Issuance, Termination and Use of RWPs and SRWPs, Rev. 16
HPP-402, Radiological Survey Requirements and Controls for Reactor Building and Incore Pit Entries, Rev. 10
HPP-413, Diving Operations, Rev. 2
HPP-419, Electronic Dosimeter Alarm Setpoint Determination and Alarm Response Action, Rev. 0

Radiation Work Permits (RWPs)

04-00011, RHR Venting, Valve Line-up, and Surveillance, 7/13/2004
04-00012, All Manual/ Remote Filter Change Outs for 2004, 1/28/2004
04-00211, Clean Boron and VT Various Components, 6/2/2004
04-00235, Reactor Building Entry To Check and Perform Vibration Tests on All Compartment Fans, 12/6/2004
04-00236, Reactor Building Entry to Perform Visual Inspection of "B" RCP Flange From RB463, 12/6/2004
04-00237, Reactor Building Entry to Replace DRPI Card RB 436, 12/6/2004
04-00238, Reactor Building Entry to Calibrate IYS09329A Loop "C" Fan "A" Vibration Switch, 12/6/2004

Corrective Action Program Documents

CER 0-C-03-3583, Individual received uptake of radioactive material
CER 0-C-03-3629, AB526-06 "A" Spent Fuel Purification Filter Cubicle was found to be improperly posted as a result of changing conditions.
CER 0-C-03-3798, Poor job planning resulted in excessive time in locked high rad area.
CER 0-C-03-4309, Individual received ED dose rate alarm while climbing in the overhead of the AB 412 west penetration room to remove RHR vent rig.
CER 0-C-04-0258, Individual entered a posted High Radiation Area to perform work wearing his TLD but without his E.D. (Electronic Dosimeter)
CER 0-C-04-1722, ED dose rate alarm received while assisting a co-worker covering up rad Material in the rad waste yard.
CER 0-C-03-4162, Unexpected dose rate alarm

Section 20S3: Radiation Monitoring Instrumentation and Protective Equipment

Procedures, Guidance Documents, and Manuals

HPP-154, Issuance and Control of Respiratory Protection Equipment, Rev. 12
HPP-202, Interlaboratory Intercomparison Program, Rev. 2
HPP-520, Set-up, Calibration, and Quality Control for the WBC-8000 Stand-up Whole Body Counter, Rev. 6
HPP-521, Performing Personnel Whole Body Counting Using the WBC-6000 and WBC-8000 Whole Body Counters, Rev. 6
HPP-522, Set-up, Calibration, and Quality Control for the WBC-6000 Whole Body Counter, Rev. 8
HPP-611, Calibration of Station Survey Instruments, Rev. 13
HPP-633, Inspection, Maintenance and Storage of Respiratory Protective Devices, Rev. 4
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-649, Calibration and Operation of the NE SAM Tool and Bag Monitor, Rev. 3
HPP-904, Use of the Radiation Monitoring System (RMS), Rev. 10
HPP-920, Post Accident Reactor Building Atmospheric Sampling, Rev. 8
SAP-501, Administrative Controls for Calibration of Health Physics Instrumentation, Rev. 6
SAP-504, Respiratory Protection Program, Rev. 1

Records, Data, and Drawings

Compressed Air/Gas Quality Testing Laboratory Report Number 21716-1, High Pressure Compressor, Grade E certification, 10/13/04
Compressed Air/Gas Quality Testing Laboratory Report Number 21716-0, High Pressure Compressor, Grade D certification with moisture test, 10/13/04
Compressed Air/Gas Quality Testing Laboratory Report Number 17812-1, High Pressure Compressor, Grade E certification, 7/21/04
Compressed Air/Gas Quality Testing Laboratory Report Number 17812-0, High Pressure Compressor, Grade D certification with moisture test, 7/21/04
Compressed Air/Gas Quality Testing Laboratory Report Number 12718-1, High Pressure Compressor, Grade E certification, 3/26/04
Compressed Air/Gas Quality Testing Laboratory Report Number 12718-0, High Pressure Compressor, Grade D certification with moisture test, 3/26/04

Hydrostatic Retest Data Sheet, Cylinder s/n OP12068, 5/28/02
Hydrostatic Retest Data Sheet, Cylinder s/nV502, 3/22/02
Hydrostatic Retest Data Sheet, Cylinder s/n SCO194811, 4/29/03
Respiratory Equipment History Log, SCBA unit s/n SCO194868
Respiratory Equipment History Log, SCBA unit s/n SCO194811
Respiratory Equipment History Log, SCBA unit s/n V502
Scott PosiCheck3 Visual/Functional Test Results, SCBA unit 27, 4/29/03
Scott PosiCheck3 Visual/Functional Test Results, SCBA unit 17, 4/28/03
Scott PosiCheck3 Visual/Functional Test Results, SCBA unit 40, 6/20/03
MSA MMR Certified C.A.R.E. Technician training certificate for four Summer employees, 2/1/03
Scott AIR-PAK 2.2/3.0/4.5/Fifty SCBA Maintenance and Overhaul training certificate for one
Summer employee, 6/3/03
HPP-633, Attachment IX, SCBA Inspection Log, 4th Quarter 2004, 10/1/04
HPP-633, Attachment X, SCBA Cylinder Monthly Inspection Log, 11/4/04
Preventative Maintenance Task Sheet (PMTS) 0310620, ICP 360.002, Calibration of RM-G12
(AB Waste Hold-up), 2/2/04
PMTS 0412994, ICP 360.002, Calibration of RM-G11 (AB Drumming Area), 10/7/04
PMTS 0208361, ICP 360.012, Calibration of RM-L4 (Spent Fuel Cooling Water), 10/22/02
PMTS 0317107, ICP 360.012, Calibration of RM-L4 (Spent Fuel Cooling Water), 5/6/04
Surveillance Test Task Sheet (STTS) 0414021, STP 360.001, Calibration of RM-G8 (Fuel
Handling Bridge), 11/3/04
STTS 0113651, STP 360.031, Calibration of RM-A1 (Control Room Supply Air), 12/11/01
STTS 0302362, STP 360.031, Calibration of RM-A1 (Control Room Supply Air), 5/21/03
STTS 0307169, STP 360.006, Calibration of RM-G7 (Reactor Building High Range), 8/26/03
STTS 0214636, STP 360.006, Calibration of RM-G7 (Reactor Building High Range), 10/25/03
STTS 0305535, STP 360.033, Calibration of RM-A2 (Reactor Building Air), 9/6/03
STTS 0117101, STP 360.033, Calibration of RM-A2 (Reactor Building Air), 2/22/02
Post Accident Sampling System Annual Check, HPP-920, 10/10/03
PM-7 Calibration Report, s/n 263, 2/19/04
PM-7 Calibration Report, s/n 263, 7/20/04
Calibration Data Sheet for the PCM-2, s/n 148, 3/18/04
Calibration Data Sheet for the PCM-2, s/n 148, 9/10/04
Calibration Certificate, Eberline RM-14, s/n 4505, 10/29/04
Calibration Certificate, Eberline RM-14, s/n 4505, 5/24/04
Calibration Certificate, Eberline RO-20, s/n 3160, 9/29/04
Calibration Certificate, Eberline RO-20, s/n 3160, 3/30/04
Calibration Certificate, Eberline Teletector, s/n 101890, 7/2/04
Calibration Certificate, Eberline Teletector, s/n 101890, 1/9/04
Calibration Certificate, Eberline Teletector, s/n 14378, 12/7/04
AMS-4 Calibration Report, s/n 932, 11/23/04
AMS-4 Calibration Report, s/n 932, 5/7/03
Calibration Certificate, MGP, s/n 204965, 12/6/04
Calibration Certificate, MGP, s/n 204370, 12/7/04
Calibration Record, People Mover, 8/17/04
Calibration Record, People Mover, 2/17/04
Calibration Record, People Mover, 8/18/03
Calibration Record, Whole Body Counter Chair, 7/21/03

Calibration Record, Whole Body Counter Chair, 8/16/04
Defective Instrument Report, SAP-501, RO-20, s/n 4653, 11/1/04
10 CFR 61 Data Summary, various waste forms, report date 12/7/04
Whole Body Counter Chair Cross-Check Analysis, Third Quarter 2003, 9/30/03
Whole Body Counter Chair Cross-Check Analysis, First Quarter 2004, 10/29/04
Whole Body Counter Chair Cross-Check Analysis, First Quarter 2004, Amended, 11/10/04
Whole Body Counter Chair Cross-Check Analysis, Third Quarter 2004, 10/29/04

Corrective Action Program Documents

SA-03-HP-01, Radiological Respiratory Program Self-Assessment Report, June 16 - July 10, 2003
QA-AUD-200302, Station Radiation Control Quality Assurance Audit, Feb. 10 - Mar 5, 2003.
SA-02-HP-03, Dosimetry Self-Assessment Report, November 12-21, 2002
SA-02-HP-02, Calibration Lab Self-Assessment Report, July 15-25, 2002
CER 0-C-04-1332, RM-L4 failed detector yield during calibration, 5/3/04
CER 0-C-03-1947, Signal Cable Manipulation causes alarms on RM-G18, 6/17/03
CER 0-C-04-3476, Disagreement between WBC room and cross-check vendor, 10/30/03
CER 0-C-03-2364, Out of cal HP instrument (teletector) was inadvertently placed in service and Used for job coverage and routine surveys, 7/23/03
CER 0-C-04-0107, Eberline RO-20 response time slower than expected causing a lower dose Rate, 1/14/04
CER 0-C-04-2757, RM-G18 alarms during electronic check source, 8/30/04
CER 0-C-03-2925, Receiving spurious RM-G18 high rad/warning alarms, 9/18/03

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

Procedures, Guidance Documents, and Operating Manuals

HPP-201, Annual Radioactive Effluent Release and Waste Disposal Report, Revision 4
HPP-709, Sampling and Release of Radioactive Gaseous Effluents, Revision 10
HPP-710, Sampling and Release of Radioactive Liquid Effluents, Revision 11
HPP-904, Use of the Radiation Monitoring System (RMS), Revision 10
STP-360.035, Main Plant Exhaust Atmospheric Radiation Monitor RMA0003 Calibration, Revision 6
STP-360.037, Reactor Building Purge Atmospheric Radiation Monitor RMA0004 Calibration, Revision 6
STP-360.063, Liquid Waste Effluent Liquid Radiation Monitor RML0005 Calibration, Revision 6
STP-360.069, Liquid Waste Effluent Liquid Radiation Monitor RML0009 Calibration, Revision 9
Offsite Dose Calculation Manual, Rev. 23
Final Safety Analysis Report, Amendment 02-01

Records, Data, and Drawings

RM-A3, Main Plant Vent Gaseous Exhaust Radiation Monitor Calibration, 10/01/03
RM-A4, ATM Gaseous Iodine Reactor Building Purge Exhaust Calibration, 11/19/04
RM-L5, Liquid Waste Effluent Monitor Calibration, 11/19/04
RM-L9, Liquid Waste Effluent Monitor Calibration, 10/20/04
RM-A10, Waste Gas Discharge Monitor Calibration, 07/31/03

Germanium Detector 1, Serial Number (S/N)11851389, Calibration for 1LML-0 Geometry, 07/01/04

Germanium Detector 2, S/N 2473, Calibration for 1LML-0 Geometry, 06/28/04

Germanium Detector 3, S/N 27-P97LA, Calibration for 1LML-0 Geometry, 07/06/04

Daily QC Checks Count Room Germanium Detectors 2 and 4, 12/01/04

Annual Effluent and Waste Disposal Report for 2003

LWRP #WG-03-217, 10/14/03

LWRP #WG-04-31, 03/18/04

LWRP #TB-04-30, 07/29/04

LWRP #SG-04-03, 09/03/04

GWRP #WG-04-01, 01/11/04

GWRP #CP-04-04, 04/02/04

GWRP #WG-04-02, 05/26/04

GWRP #MPV-04-67, 09/18/04

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.

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, Guidance Documents, and Manuals

Offsite Dose Calculation Manual, Rev. 23

Final Safety Analysis Report, Amendment 02-01

HPP-1000, Conduct of Environmental, Revision 6, 06/25/01

HPP-1001, Radiation Protection Program for Maintenance of South Carolina Radioactive Material License 181-02, Revision 4, 05/22/00

HPP-1002, Environmental Chemical Control, Revision 2, 04/17/00

HPP-1011, Annual Census, Revision 3, 04/22/98

HPP-1012, Radiological Analytical Services Intra-Comparison Program, Revision 2, 04/14/98

HPP-1020, Environmental Sample Collection, Revision 3, 01/31/96

HPP-1021, Environmental Sample Preparation, Revision 2, 05/13/98

HPP-1022, Environmental Sampling and Analytical Requirements, Revision 4, 04/02/97

HPP-1023, Environmental Sample Control and Tracking, Revision 4, 04/17/00

HPP-1024, Ground Water Monitoring and Well Sampling, Revision 2, 08/27/98

HPP-1032, Maintenance, Operation, and Use of the Environmental Gamma Spectroscopy System, Revision 2, 04/22/98

HPP-1041, Environmental TLD Management, Revision 4, 08/08/02

HPP-1051, Environmental Air Sampler Calibration and Maintenance, Revision 4, 02/27/97

HPP-1060, Meteorological Data Verification and Correction, Revision 4, 09/19/00

HPP-1061, Meteorological Checks, Revision 3, 09/18/00

STP-393.004, Surveillance Test Procedure, Meteorological Tower Calibration, Revision 6, 12/14/99

I&C Maintenance Basic Training, Met Site Equipment, ICS09-01, Handout, Revision 1, 10/17/01

Records, Data, and Drawings

2003 Land Use Census, 09/29/03

2004 Land Use Census, 10/11/04

2004 Environmental Sample Collection Schedule

V.C. Summer Nuclear Station Met Site Instrument Calibration, 11/04/04

V.C. Summer Nuclear Station Radiological Environmental operating Report, April 14, 2003

V.C. Summer Nuclear Station Radiological Environmental operating Report, April 30, 2004

Environmental Air Sampler Calibration Record, (Sites 8,6 & 7), 05/19/04

Environmental Air Sampler Calibration Record, (Sites 2,30 & 17), 05/26/04

Environmental Air Sampler Calibration Record, (Sites P3 & P4), 03/18/04

Environmental Air Sampler Calibration Record, (Sites P3 & P4), 09/30/04

Environmental Air Sampler Calibration Record, (Sites P2 & P1), 06/04/04

Certificate of Calibration, 1.0 Liter Solid in 130F GA-MA Beaker, 06/17/04

Efficiency Calibration Report, 1LML Shelf 0, CNF-4, 07/29/04

National Voluntary Laboratory Accreditation Program, Panasonic TLDs, effective through 09/30/05

Small Articles Monitor Calibration Report, s/n 368, 5/6/04

Small Articles Monitor Calibration Report, s/n 368, 10/12/04

HPP-158, Contamination Control for Equipment and Materials, Rev. 13

Corrective Action Documentation

QA-AUD-200311, Environmental Monitoring, 10/06/03

QA Audit QA-AUD-200412-0, Environmental Monitoring, Several deficiencies were identified

Regarding the maintenance of the P/Cap data base Master List of Surveillance Activities (MLSA) for the control of radiological effluents 10/26/04

CER-0-C-03-2508, Air Sampler at site 7 found off, 08/05/2003

CER-0-C-03-2952, Identification in Audit QA-AUD-200311 failures to perform HPP-1060

Meteorological Data Verification and Correction," Monthly Data Reviews, 09/23/03

CER-0-C-03-0334, Environmental Water Sampler at Site 23 found without power, 09/24/03

CER-0-C-03-3531, Breaker Tripped at environmental Air Sampler Site 7, 10/22/03

CER-0-C-04-0307, The licensee unknowingly shipped four explosive detectors each containing 10Ci of Ni-63 without making a survey or filling out proper shipping documentation, 2/02/04

CER-0-C-04-2808, Modification created a possible release path of sewage from Radioactive Material from the PA, 09/01/04

CER-0-C-04-3051, Box purchased through Investment Recovery was found to contain Packaged radioactive materials, 09/23/04

CER-0-C-04-3567, Recommendations as part of Environmental audit QA-AUD-200412-0, 11/12/04

CER-0C-04-3834, NRC identified a safety issue with sparks and slag falling from the Turbine Building roof onto the walkway below, 12/09/04.

CER 04-0456, RCA Control Point deficiencies, 2/17/04

Section 40A1: Performance Indicator VerificationProcedures, Guidance Documents, and Manuals

HPP-242, Reporting NRC Performance Indicators, Rev. 0

Station Administrative Procedure (SAP)-1131, Corrective Action Program, Rev. 4

Records, Data, and Drawings

Listings of Corrective Action Reports (PIP's) Covering Radiation Protection Related Corrective Action Documents for January 1, 2003 through December 6, 2004.

Monthly Performance Indicator Reports for November 2003-November 2004

CENTS Query Individual Doses > 100 mrem single entry.

Monthly radioactive waste release permit summary: Cumulative maximum individual exposure At controlling location, January 2004 - November 2004

LIST OF ACRONYMS

ALARA	As Low As Is Reasonably Achievable
ARM	Area Radiation Monitor
ARP	Alarm Response Procedure
CAP	Corrective Action Program
CER	Condition Evaluation Report
CFR	Code of Federal Regulations
CY	Calendar Year
DC	Direct Current
dpm	disintegrations per minute
EDG	Emergency Diesel Generator
EFW	Emergency Feedwater
EMP	Electrical Maintenance Procedure
ES	Engineering Services Procedure
ESF	Engineered Safety Feature
FPP	Fire Protection Procedure
FSAR	Final Safety Analysis Report
GTP	General Test Procedure
HP	Health Physics
HPP	Health Physics Procedure
IMC	Inspection Manual Chapter
kV	kilovolt
LER	Licensee Event Report
LLD	Lower Limit of Detection
MPFF	Maintenance Preventable Functional Failures
MR	Maintenance Rule
MS	Main Steam
MWR	Maintenance Work Request
NCV	Non-cited Violation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission

OAP	Operations Administrative Procedure
ODCM	Offsite Dose Calculation Manual
OOS	Out-of-service
PASS	Post Accident Sampling System
PCM	Personnel Contamination Monitor
PI	Performance Indicator
PI&R	Problem Identification and Resolution
PM	Portal Monitoring
PORV	Power Operated Relief Valve
QC	Quality Control
Rev.	Revision
Radwaste	Radioactive Waste
RCA	Radiologically Controlled Area
REMP	Radiological Environmental Monitoring Program
RG	Regulatory Guide
RHR	Residual Heat Removal
RP	Radiation Protection
RTP	Rated Thermal Power
RWP	Radiation Work Permit
SAM	Small Article Monitor
SAP	Station Administrative Procedure
SCBA	Self-Contained Breathing Apparatus
SDP	Significance Determination Process
SOP	System Operating Procedure
SSC	Structures, Systems and Components
SW	Service Water
TI	Temporary Instruction
TS	Technical Specifications
WBC	Whole Body Counting