



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION II
SAM NUNN ATLANTA FEDERAL CENTER
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ATLANTA, GEORGIA 30303-8931

October 28, 2005

Carolina Power and Light Company
ATTN: Mr. C. J. Gannon
Vice President - Harris Plant
Shearon Harris Nuclear Power Plant
P. O. Box 165, Mail Code: Zone 1
New Hill, North Carolina 27562-0165

SUBJECT: SHEARON HARRIS NUCLEAR POWER PLANT - NRC INTEGRATED
INSPECTION REPORT 05000400/2005004

Dear Mr. Gannon:

On September 30, 2005, the US Nuclear Regulatory Commission (NRC) completed an inspection at your Shearon Harris reactor facility. The enclosed integrated inspection report documents the inspection findings, which were discussed on October 12, 2005, with Mr. R. Duncan and other members of your staff.

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

Based on the results of this inspection, the inspectors identified two issues of very low safety significance (Green). These issues were determined to involve violations of NRC requirements. However, because of their very low safety significance and because they had been entered into your corrective action program, the NRC is treating these issues as non-cited violations, in accordance with Section VI.A.1 of the NRC's Enforcement Policy. In addition, one licensee-identified violation which was determined to be of very low safety significance is listed in Section 40A7 of the enclosed report. If you contest any of these non-cited violations, you should provide a response with the basis for your denial, within 30 days of the date of this inspection report to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001, with copies to the Regional Administrator, Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Shearon Harris facility.

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

Paul E. Fredrickson, Chief
Reactor Projects Branch 4
Division of Reactor Projects

Docket No.: 50-400
License No.: NPF-63

Enclosure: NRC Inspection Report 05000400/2005004
w/Attachment: Supplemental Information

cc w/encl: (See page 3)

cc w/encl:

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 ADAMS: Yes No ACCESSION NUMBER: _____

OFFICE	RII:DRP	RII:DRP	RII:DRS	RII:DRS	RII:DRS	RII:DRS	
SIGNATURE	RXM	PBO	GBK1	FNW	GBK1 for	GBK1 for	
NAME	RMusser	PO'Bryan	GKuzo	FWright	JDiaz	HGepford	
DATE	10/28/2005	10/28/2005	10/28/2005	10/28/2005	10/28/2005	10/28/2005	
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No: 50-400

License No: NPF-63

Report No: 05000400/2005004

Licensee: Carolina Power and Light Company

Facility: Shearon Harris Nuclear Power Plant, Unit 1

Location: 5413 Shearon Harris Road
New Hill, NC 27562

Dates: July 1, 2005 - September 30, 2005

Inspectors: R. Musser, Senior Resident Inspector
P. O'Bryan, Resident Inspector
G. Kuzo, Sr. Health Physicist, (Sections 2PS1, 4OA1, & 4OA5)
F. Wright, Sr. Health Physicist, (Section 2OS1)
J. Diaz, Health Physicist, (Section 2PS3)
H. Gepford, Health Physicist, (Section 2OS3)

Approved by: P. Fredrickson, Chief
Reactor Projects Branch 4
Division of Reactor Projects

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SUMMARY OF FINDINGS

IR 05000400/2005-004; 07/01/2005 - 09/30/2005; Shearon Harris Nuclear Power Plant, Unit 1; Radiation Monitoring Instrumentation and Protective Equipment and Event Follow-up

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

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

- Green. An NRC-identified non-cited violation of 10CFR50, Appendix B, Criterion III, "Design Control" was identified for failure to ensure that adequate design control measures were implemented on an ESCW system design change (Engineering Change 51444). The inadequate design change resulted in both trains of the essential services chilled water (ESCW) system being inoperable for a period of time greater than allowed in Technical Specification 3.7.13. The ESCW system was inoperable because check valves were installed in the service air supply lines to the expansion tanks which were incapable of maintaining expansion tank pressure upon loss of the non-safety service air system pressure.

The inadequate design change of the ESCW system is more than minor because it affects the Mitigating Systems Cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e. core damage). The finding is also associated with the Mitigating Systems Cornerstone attribute of design control. The significance determination process (SDP) of NRC Inspection Manual Chapter 0609, Appendix A was used to determine the safety significance of the finding. Since the degradation of the ESCW system represented a loss of system safety function, a Phase 2 SDP analysis was required. The Phase 2 SDP analysis determined that the significance of the finding was potentially greater than green because the degradation of the ESCW system existed for more than 30 days, and the ESCW system is a support system for the high head safety injection (HHSI) system, which affects several core damage sequences. Therefore, a Phase 3 evaluation for the finding was performed. Based upon data which showed that the chillers' check valves leaked at a low enough rate that the chillers would operate for at least 24 hours before causing loss of function of the systems they support, the finding was considered to have very low safety significance. The cause of the finding is related to the organization aspect of the human performance cross-cutting area. Specifically, the

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engineering organization's lack of understanding of design control requirements with regard to manual actions led to implementation of the inadequate ESCW system modification. (Section 40A3.1)

Cornerstone: Emergency Preparedness

- Green. An NRC-identified non-cited violation of 10 CFR 20.1101 was identified for failure to maintain an acceptable program for periodic calibration of Area Radiation Monitor (ARM) detectors as required by 10 CFR 20.1501(b). For seven ARM detectors that are referenced in the Emergency Plan, the licensee eliminated the periodic calibrations and designated the equipment as 'run to failure'.

The identified issue is more than minor in that the failure of the specific ARM equipment could impair licensee actions to support emergency response activities. This finding involving radiological monitoring is related to the Emergency Preparedness Cornerstone. The change from a periodic calibration frequency to no calibration frequency (i.e. 'run-to-failure') would not ensure that equipment and instrumentation needed to support emergency response activities were being properly maintained. This finding was evaluated using the Emergency Preparedness SDP and was determined to be of very low safety significance based on the identified ARM detectors still being within the calibration frequency that was previously established (Section 20S3).

B. Licensee-Identified Violations

A violation of very low safety significance, which was identified by the licensee has been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. This violation and the corrective action tracking number is listed in Section 40A7.

REPORT DETAILS

Summary of Plant Status

The unit began the inspection period at full rated thermal power, and operated at full power until September 10, 2005, when power was reduced to approximately 90 percent for scheduled turbine valve testing. The unit was returned to full power on September 10 and operated at full power until September 17, 2005, when power was reduced to approximately 70 percent to perform corrective maintenance on switchyard equipment. The unit was returned to full power on September 17, 2005 and remained at full power for the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R04 Equipment Alignment

a. Inspection Scope

Partial System Walkdowns:

The inspectors performed the following four partial system walkdowns, while the indicated structures, systems and components (SSCs) were out-of-service (OOS) for maintenance and testing:

- B essential services chilled water system with A essential chilled water system out-of-service on July 27, 2005.
- A residual heat removal system with B residual heat removal system out-of-service on August 3, 2005.
- A emergency diesel generator with B emergency diesel generator out-of-service on August 19, 2005.
- A emergency diesel generator with B emergency diesel generator out-of-service on September 6, 2005.

To evaluate the operability of the selected trains or systems under these conditions, the inspectors reviewed valve and power alignments by comparing observed positions of valves, switches, and electrical power breakers to the procedures and drawings listed in the Attachment.

Complete System Walkdown:

The inspectors conducted a detailed review of the alignment and condition of the emergency service water system. To determine the proper system alignment, the inspectors reviewed the procedures, drawings, and Final Safety Analysis Report (FSAR) sections listed in the Attachment.

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The inspectors walked down the system, to verify that the existing alignment of the system was consistent with the correct alignment. Items reviewed during the walkdown included the following:

- Valves are correctly positioned and do not exhibit leakage that would impact the function(s) of any given valve.
- Electrical power is available as required.
- Major system components are correctly labeled, lubricated, cooled, ventilated, etc.
- Hangers and supports are correctly installed and functional.
- Essential support systems are operational.
- Ancillary equipment or debris does not interfere with system performance.
- Tagging clearances are appropriate.
- Valves are locked as required by the licensee's locked valve program.

The inspectors reviewed the documents listed in the Attachment, to verify that the ability of the system to perform its function could not be affected by outstanding design issues, temporary modifications, operator workarounds, adverse conditions, and other system-related issues tracked by the Engineering Department.

The inspectors reviewed the following ARs associated with this area to verify that the licensee identified and implemented appropriate corrective actions:

- #135117, "Failure to Meet Post Modification Acceptance Test for ESW Seal Flow"
- #135892, "1SW-118 Closed Too Slow During OST-1010"
- #141842, "Incorrect Wear Ring Material on ESW Pump"
- #149610, "A ESW Pump Differential Pressure Decrease Noted in OST-1214"

b. Findings

No findings of significance were identified.

1R05 Fire Protection

a. Inspection Scope

Fire Protection-Tours

For the 15 areas identified below, the inspectors reviewed the licensee's control of transient combustible material and ignition sources, fire detection and suppression capabilities, fire barriers, and any related compensatory measures, to verify that those items were consistent with FSAR Section 9.5.1, Fire Protection System, and FSAR Appendix 9.5.A, Fire Hazards Analysis.

The inspectors walked down accessible portions of each area and reviewed results from related surveillance tests, to verify that conditions in these areas were consistent with descriptions of the applicable FSAR sections. Documents reviewed are listed in the Attachment.

- 261' level of the reactor auxiliary building area 1-A-4-CHLR (1 area).
- 261' level of the reactor auxiliary building including areas 1-A-4-CHFA, 1-A-4-CHFB, 1-A-EPA, and 1-A-EPB (4 areas).
- 286' level of the reactor auxiliary building including areas 1-A-5-HVA and 1-A-5-HVB (2 areas).
- Emergency diesel generator fuel oil storage building including areas 1-O-PB, 1-O-PA, and 5-O-BAL (3 areas).
- Turbine building including areas 1-G-286, 1-G-314, 1-G-240, and 1-G-261 (4 areas).
- Fuel Handling Building area 5-F-4-BAL (1 area).

Fire Protection-Drills

To evaluate the readiness of the licensee's personnel to prevent and fight fires, the inspectors observed fire brigade performance during an unannounced fire drill in the 'C' main transformer on September 18, 2005.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures

a. Inspection Scope

External Flooding

The inspectors walked down the emergency service water intake and screening structures which are below flood levels or otherwise susceptible to flooding from external sources, to verify that the area configuration, features, and equipment functions were consistent with the descriptions and assumptions used in FSAR section 2.4.10, Flood Protection Requirements, and in the supporting basis documents listed in the Attachment. The inspectors reviewed the operator actions credited in the analysis, to verify that the desired results could be achieved using the plant procedures listed in the Attachment.

Also, the inspectors walked down risk-significant manholes and reviewed dewatering records, to verify that cables and associated support equipment described in FSAR sections 2.4.10, Flooding Protection Requirements, and 8.3.1.2.37, Underground Raceway Design, were not damaged by submergence and would perform their intended function.

The inspectors reviewed the following ARs associated with this area, to verify that the licensee identified and implemented appropriate corrective actions:

- AR# 167048, "Pipe plug deficiencies on two safety-related manholes."
- AR# 168351, "Manhole M523B not included in PM program."
- AR# 168460, "Potential safety concern - EDG circuits in manholes."

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance

a. Inspection Scope

The inspectors reviewed the performance data of the component cooling water heat exchangers, to verify that the performance results were appropriately categorized against the pre-established acceptance criteria described in design basis calculations. The inspectors also verified that the frequency of inspection was sufficient to detect degradation prior to loss of heat removal capability below design basis values. Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification

a. Inspection Scope

On August 22, 2005, the inspectors observed licensed-operator performance during requalification simulator training for a group of off-shift licensed operators, to verify that operator performance was consistent with expected operator performance, as described in Exercise Guide EOP-SIM-17.55. This training tested the operators' ability to cope with a loss of the ultimate heat sink. The inspectors focused on clarity and formality of communication, the use of procedures, alarm response, control board manipulations, group dynamics and supervisory oversight.

The inspectors observed the post-exercise critique to verify that the licensee had identified deficiencies and discrepancies that occurred during the simulator training.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

The inspectors reviewed three degraded SSC/function performance problems or conditions listed below to verify the licensee's handling of these performance problems or conditions in accordance with 10CFR50, Appendix B, Criterion XVI, Corrective Action, and 10CFR50.65, Maintenance Rule. Documents reviewed are listed in the Attachment.

- AR #158339, "B-SB Containment Spray Eductor Found Low Per OST-1119"
- AR #162275, "CCW Pump Sleeve and Bearing Compatibility"
- Historical functional failures of the 6.9 kV AC distribution system.

The inspectors focused on the following attributes:

- Appropriate work practices,
- Identifying and addressing common cause failures,
- Scoping in accordance with 10 CFR 50.65(b),
- Characterizing reliability issues (performance),
- Charging unavailability (performance),
- Trending key parameters (condition monitoring),
- 10 CFR 50.65(a)(1) or (a)(2) classification and reclassification, and
- Appropriateness of performance criteria for SSCs/functions classified (a)(2) and/or appropriateness and adequacy of goals and corrective actions for SSCs/functions classified (a)(1).

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Evaluation

a. Inspection Scope

The inspectors reviewed the licensee's risk assessments and the risk management actions for the plant configurations associated with the four activities listed below. The inspectors verified that the licensee performed adequate risk assessments, and implemented appropriate risk management actions when required by 10CFR50.65(a)(4). For emergent work, the inspectors also verified that any increase in risk was promptly assessed, and that appropriate risk management actions were promptly implemented.

- The work week of July 4, including a scheduled B EDG surveillance with impending severe weather on July 7.
- The work week of July 25, including emergent work on the A unit auxiliary transformer.
- The work week of September 5, including the B EDG outage on September 6, 2005.

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- Yellow risk maintenance on September 20 on the reactor make-up system with a thunderstorm watch in effect.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed five operability determinations addressed in the ARs listed below. The inspectors assessed the accuracy of the evaluations, the use and control of any necessary compensatory measures, and compliance with the TS. The inspectors verified that the operability determinations were made as specified by Procedure OPS-NGGC-1305, "Operability Determinations." The inspectors compared the justifications made in the determination to the requirements from the TS, the FSAR, and associated design-basis documents, to verify that operability was properly justified and the subject component or system remained available, such that no unrecognized increase in risk occurred:

- AR #161458, "Potential Inadequate Power Distribution"
- AR #163435, "Essential Services Chilled Water - Use of Manual Actions"
- AR #165153, "AH-19A (SA) Tripped Off for Unknown Reason"
- AR #168975, "Unplanned LCO entry for B chiller 1SA-642"
- AR #170040, "B Main Steam Isolation Valve Stem Leakage"

b. Findings

No findings of significance were identified.

1R16 Operator Work-Arounds

a. Inspection Scope

The inspectors reviewed requirement to manually pressurize essential services chilled water expansion tanks to verify that this workaround did not affect either the functional capability of the related system in responding to an initiating event, or the operators' ability to implement abnormal or emergency operating procedures.

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testing

a. Inspection Scope

For the five post-maintenance tests listed below, the inspectors witnessed the test and/or reviewed the test data, to verify that test results adequately demonstrated restoration of the affected safety function(s) described in the FSAR and TS. The tests included the following:

- Partial OST-1215 surveillance for valve 1SW-227 following corrective maintenance on July 5, 2005.
- Partial OST-1216 surveillance for the A component cooling water pump after pump reassembly on July 16, 2005.
- Partial OST-1092 surveillance for valve 1RH-69 and the B residual heat removal pump after preventative maintenance on August 3, 2005.
- Partial OST-1119 surveillance for valve 1CT-71 and the B containment spray pump after preventative maintenance on August 4, 2005.
- Partial OST-1215 surveillance for valve 1SW-98 after preventative maintenance on September 2, 2005.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

For the five surveillance tests identified below, the inspectors witnessed testing and/or reviewed test data, to verify that the systems, structures, and components involved in these tests satisfied the requirements described in the TS and the FSAR, and that the tests demonstrated that the SSCs were capable of performing their intended safety functions.

- OST-1040, "Essential Services Chilled Water System Operability, Quarterly Interval Modes 1-6 " for the B train on July 22, 2005.
- OST-1093, "CVCS/SI System Operability, Train B" on August 8, 2005.
- OST-1122, "Train A 6.9 kV Emergency Bus Undervoltage Trip Actuating Device Operational Test and Contact Test" on August 16, 2005.
- *OST-1056, "Containment Ventilation Isolation Valve ISI Test, Quarterly Interval Modes 1-6" on September 8, 2005.
- OST-1040, "Essential Services Chilled Water System Operability, Quarterly Interval Modes 1-6" on September 9, 2005.

*This procedure included inservice testing requirements.

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed the temporary modification described in Work Order 714960, associated with increasing the instrument air pressure to the B main steam isolation valve, to verify that the modification did not affect the safety functions of the valve, and to verify that the modification satisfied the requirements of 10CFR50, Appendix B, Criterion III, Design Control.

In addition, the inspectors reviewed the following AR #170040, "B Main Steam Isolation Valve Stem Leakage" to verify that the licensee identified and implemented appropriate corrective actions:

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS1 Access Controls To Radiologically Significant Areas

a. Inspection Scope

Access Controls

The inspectors reviewed and evaluated licensee guidance and its implementation for controlling and monitoring worker access to radiologically significant areas and tasks associated with routine operations. The inspectors evaluated changes to and adequacy of procedural guidance; directly observed implementation of established administrative and physical radiation controls; appraised occupational worker and health physics technician (HPT) knowledge of and proficiency in implementing radiation protection activities; and assessed occupational worker exposures to radiation and radioactive material.

The inspectors directly observed controls established for workers and HPT staff involved in work/tasks associated with actual/potential airborne radioactivity area, radiation area, high radiation area (HRA), locked-high radiation area (LHRA), and very high radiation area (VHRA) conditions. Controls and their implementation for LHRA keys and for storage of irradiated material within the spent fuel pools (SFPs) were reviewed and

discussed in detail. In addition, licensee controls for areas where dose rates could change significantly as a result of plant operations were reviewed and discussed.

For selected tasks, the inspectors attended pre-job briefings and reviewed radiation work permit (RWP) details to assess communication of radiological control requirements to workers. Occupational workers' adherence to selected RWPs and HPT proficiency in providing job coverage were evaluated through direct observations and interviews with licensee staff. Electronic dosimeter (ED) alarm set points and worker stay times were evaluated against area radiation survey results for observed activities. For selected HRA tasks involving significant dose gradients, such as diving operations, the inspectors evaluated the use and placement of whole body and extremity dosimetry to monitor worker exposure.

Postings and physical controls established within the radiologically controlled area (RCA) for access to the reactor building containment; the reactor auxiliary building (RAB) locations; radioactive material/waste processing equipment, storage, and shipping locations; and the low level radioactive waste storage facilities were evaluated directly during facility tours. The inspectors independently measured radiation dose rates or directly observed conduct of licensee radiation surveys and results for observed activities. Results were compared to current licensee surveys and assessed against established postings and radiation controls.

The inspectors evaluated implementation and effectiveness of licensee controls for both airborne and external radiation exposure. Worker exposure as measured by ED and by licensee evaluations of skin doses resulting from discrete radioactive particle or dispersed skin contamination events were reviewed and assessed independently. The inspectors reviewed and discussed selected whole-body count analyses conducted since the last inspection. This was to evaluate the implementation and effectiveness of personnel monitoring and administrative and physical controls including air sampling, barrier integrity, engineering controls, and postings for tasks having the potential for individual worker internal exposures to exceed 30 millirem (mrem) Committed effective dose equivalent (CEDE). Effectiveness of external radiation exposure controls were evaluated through review and discussions of individual worker dose as measured by ED.

Radiation protection activities were evaluated against FSAR, Technical Specifications (TS), and 10 Code of Federal Regulations (CFR) Parts 19 and 20 requirements. Specific assessment criteria included FSAR Section 11, Radioactive Waste Management, and Section 12, Radiation Protection; 10 CFR 19.12; 10 CFR 20, Subpart B, Subpart C, Subpart F, Subpart G, Subpart H, and Subpart J; TS Sections 6.8.1, Procedures, and 6.12, High Radiation Area; and approved procedures. Detailed procedural guidance and records reviewed for this inspection area are listed in the Attachment.

Problem Identification and Resolution (PI&R)

Corrective Action Program (CAP) documents associated with access controls to radiologically significant areas were reviewed and assessed. The inspectors evaluated

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the licensee's ability to identify, characterize, prioritize, and resolve the identified issues in accordance with licensee procedures.

CAP documents associated with access control issues, personnel radiation monitoring, and personnel exposure events that were reviewed and evaluated in detail during inspection of this program area are identified in the Attachment.

b. Findings

No findings of significance were identified.

2OS3 Radiation Monitoring Instrumentation and Protective Equipment

a. Inspection Scope

Radiation Monitoring Instrumentation and Post-Accident Sampling Systems

During tours of the RAB, the main control room, and the RCA exit points, the inspectors observed installed radiation detection equipment including area radiation monitor (ARM), Continuous air monitor, personnel contamination monitor (PCM), portal monitor (PM), and Whole body counter (WBC) equipment. During the tours, the adequacy of the equipment's physical location and material condition were evaluated.

From review of selected records and discussions with cognizant licensee personnel, the inspectors evaluated completion and adequacy of equipment calibrations and assessed system operability and reliability. Calibration records and maintenance requests for RM-01RR-3601 (letdown HX valve gallery), RM-21RR-3560A (control room area monitor), RM-01CR-3561B (containment ventilation isolation monitor) and RM-01CZ-3504B (control room normal outside air intake) area radiation monitors were evaluated against required calibration frequencies and requirements. **In addition, the inspectors directly observed the equipment and reviewed the procedures for obtaining post-accident samples of reactor coolant as required by TS. The inspectors observed the calibration of monitor RM-01CZ-3504B.**

During equipment walk-downs, the inspectors observed functional checks of various fixed and portable radiation monitoring/detection instruments. The observations included source checks of PCM, PM, and WBC equipment. The inspectors reviewed calibration records and discussed the functional testing and testing intervals for selected PCM and PM equipment located at the RCA and protected area exits. PCM equipment detection capabilities were demonstrated using a low-level mixed radionuclide source that was passed through the equipment. The operability and analysis capabilities of the WBC equipment were evaluated. WBC equipment operations were reviewed and discussed with responsible personnel.

For selected portable survey instrumentation used in field tasks, the inspectors observed HPT selection of survey instruments and use of instruments to perform job coverage. Availability of portable instruments for licensee use was evaluated through

observation of instruments staged for issue and discussion with licensee personnel. For frisker and portable survey instruments in the field, the inspectors noted calibration sticker data. Calibration data for portable instruments staged or recently used for coverage of field tasks were reviewed. The inspectors observed weekly response checks of Eberline 6112B, LMC 177, LMC 12/42-30, and Eberline RO-2 survey instruments. In addition, the inspectors observed the calibration range for neutron instrument calibrations and discussed its use for performing calibrations with cognizant licensee personnel. The inspectors discussed techniques and bases applied to the calibration of portable survey instruments with licensee personnel.

Operability and reliability of selected radiation detection instruments were reviewed against 10 CFR Part 20; NUREG-0737, Clarification of TMI Action Plan Requirements; TS Sections 3 and 6.8; FSAR Chapter 12; and applicable licensee procedures. Documents reviewed during the inspection are listed in the Attachment.

Self-Contained Breathing Apparatus (SCBA) and Protective Equipment

Selected SCBA units staged for emergency use in the main control room and technical support center were inspected for material condition and adequate air pressure. The inspectors also reviewed the previous five years of maintenance records for components of four SCBA units. In addition, certification records associated with supplied-air quality were reviewed and discussed. The capability for refilling and transporting SCBA bottles was reviewed.

Control room operators were interviewed to determine their knowledge of available SCBA equipment locations, including corrective lens inserts if needed, and their training on bottle change-out during periods of extended SCBA use. Respirator qualification records were reviewed for several licensed operators, maintenance personnel, chemistry personnel, and health physics personnel designated as emergency responders.

Licensee activities associated with maintenance and use of respiratory protection equipment were reviewed against 10 CFR Part 20; Regulatory Guide (RG) 8.15, Acceptable Programs for Respiratory Protection; American National Standards Institute (ANSI)- Z88.2-1992, American National Standard (ANS) for Respiratory Protection; and applicable licensee procedures. Documents reviewed during the inspection are listed in the Attachment.

Problem Identification and Resolution

Selected audits, self-assessments, and Nuclear Condition Reports (NCRs) associated with instrumentation and protective equipment were reviewed and assessed. Inspectors evaluated the licensee's ability to identify, characterize, prioritize, and resolve the identified issues in accordance with procedure CAP-0200, Corrective Action Program, Rev. 14, and associated guideline documents. Documents reviewed are listed in the Attachment.

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b. Findings

Introduction. The inspectors identified a Green non-cited violation (NCV) of 10 CFR 20.1101 for failure to maintain an acceptable program for ARM equipment periodic calibrations that are required by 10 CFR 20.1501(b). Specifically, for seven ARM detectors that support emergency response activities, the license had eliminated periodic calibrations and did not have quantitative response check requirements to assure acceptable ARM operability and reliability. 10 CFR 50.47 (b)(8) requires that adequate equipment to support emergency response activity be provided and maintained.

Description. From review and discussion of required preventative maintenance (PM) calibration activities for selected ARM equipment, the inspectors identified seven monitors referenced by PLP-201, Emergency Plan, EAL Flow Charts, (e.g., the Letdown Heat Exchanger Valve Gallery, RM-1RR-3601) for which the PM calibration frequency category had been changed from a five year frequency to a 'run to failure' classification. As such, calibrations for the subject equipment would be scheduled only following equipment failure or other significant maintenance. The licensee stated that for these situations the calibration/maintenance activities would be expedited to be completed within 14 days. The identified change in calibration frequency was promulgated as part of an equipment reliability review conducted in accordance with ADM-NGGC-0107, Equipment Reliability Process Guideline, Rev. 3, for all ARMs on the site without specific consideration given for those monitors applicable to Emergency Plan implementation.

The inspectors noted that for the subject ARM equipment, industry practices include either annual/18 month calibrations, or calibration activities based on the demonstrated stability of the instrumentation. A previously established five year calibration frequency for the subject ARMs was based on vendor recommendations and extensive licensee review of applicable maintenance records and equipment reliability data. However, a similar review was not conducted for the current PM calibration program which could result in the licensee exceeding the previous five year calibration interval. Further, the inspectors noted that acceptable industry practices follow ANSI N323D-2002, American National Standard for Installed radiation protection instrumentation, which specifies calibration frequencies depend on instrument stability as demonstrated by the development of quantitative acceptance criteria for routine response checks. For instruments having a consistent quantitative check source response ranging from 10 to less than 20 percent of the expected values, calibrations are conducted annually. Instruments with response check source values exceeding ± 20 percent of their expected values are to be taken out of service and re-calibrated immediately. Based on discussions with responsible licensee representatives, the inspectors determined that the subject ARM response checks were qualitative and no quantitative range of acceptance criteria had been established. At the time of the onsite inspection, all monitors were within the previously established five year ± 25 percent calibration frequency.

Analysis. For seven ARMs referenced in Emergency Plan documents, the inspectors determined that the elimination of the five year PM calibration surveillance program and subsequent classification of the equipment as 'run to failure', with the absence of quantitative response check acceptance criteria was a performance deficiency. The failure to assure accurate radiation measurements either through periodic calibrations or quantitative response checks, and a lack of compensatory equipment, could impair licensee actions to support emergency response activities. This finding is associated with the facilities and equipment attribute of the Emergency Preparedness Cornerstone and adversely affects the cornerstone objective to ensure that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of radiological emergency and is, therefore, more than minor. This finding was evaluated using Sheet 1, Failure to Comply, of the Emergency Preparedness Significance Determination Process (SDP). The finding, which was a failure to comply, was not a planning standard problem, therefore, the SDP evaluation determined it to be of very low safety significance. The fact that the identified ARM detectors were still within the calibration frequency that was previously established was the bases for the finding not being a planning standard problem.

Enforcement. 10 CFR 20.1101 requires licensees to establish and maintain acceptable programs commensurate with the scope and extent of licensed activities and sufficient to ensure compliance with the provisions of this part. In addition, 10 CFR 20.1501(b) requires, in part, instruments and equipment used for quantitative radiation measurements to be calibrated periodically for the radiation measured. Licensees are required by 10 CFR 50.47(b)(8) to maintain facilities and equipment that are required by the emergency plan.

Contrary to 10 CFR 20.1101, as of August 5, 2005, for seven ARM detectors used to implement the current Emergency Plan, the licensee failed to maintain an acceptable periodic PM calibration program or quantitative response check and acceptance criteria guidance to ensure compliance with 10 CFR 20.1501(b) and 10 CFR 50.47(b)(8). Because the identified ARMs were still within the previous five year PM calibration frequency interval, the identified issue was determined to be of very low safety significance and has been entered into the licensee's corrective action program (NCR No. 00165629). This violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000400/2005004-01, Failure to Maintain an Acceptable Program for Periodic Calibration of Emergency Plan ARMs in Accordance with 10 CFR 20.1101 .

Enclosure

Cornerstone: Public Radiation Safety

2PS1 Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems

a. Inspection Scope

Effluent Monitoring and Radwaste Equipment

During inspector walk-downs, accessible sections of the liquid radioactive waste (radwaste) system including liquid waste processing tanks and associated system piping and valves, and selected gaseous and effluent monitors were assessed for material condition and conformance with current system design diagrams. Inspected components of the gaseous effluent process and release system included sample line configurations for the plant vent air particulate/ noble gas/iodine monitor skid, the condensate vacuum pump effluent treatment system, waste monitor tank, and the secondary waste sample tank. The inspectors interviewed chemistry staff and supervision regarding radwaste equipment configuration, effluent monitor operation, and system modifications.

The operability, availability, and reliability of selected effluent process sampling and detection equipment used for routine and accident monitoring activities were reviewed and evaluated. The inspectors reviewed results of calibrations and/or performance surveillances for selected effluent monitors including the RAB normal exhaust (1AV3531), condenser vacuum pump effluents (1TV-3534), waste monitor tank discharge (21WL-3541), and containment pre-entry purge (1LTV-3502B). In addition, sample line flow rates for selected airborne effluent monitoring systems were reviewed against procedural details and discussed with chemistry staff. For select control room effluent monitor read-outs, the inspectors independently reviewed established alarm set-points against procedural/release requirements. The **two most recent surveillances on the RAB normal exhaust ventilation** high efficiency particulate air (HEPA)/charcoal air treatment system also were reviewed. The inspectors evaluated OOS effluent monitors and compensatory action data for the period January, 2003, through December, 2005. Technical bases for effluent monitoring Offsite Dose Calculation Manual (ODCM) and/or system design-related changes were reviewed and discussed.

Installed configuration, material condition, operability, and reliability of selected effluent sampling and monitoring equipment were reviewed against details documented in the following: 10 CFR Part 20; TS 6.8; 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, June 1974; ANSI-N13.1-1969, Guide to Sampling Airborne Radioactive Materials in Nuclear Facilities; RG 4.15, Quality Assurance for Radiological Monitoring Programs (Normal Operations - Effluent Streams and the Environment, Rev. 1; the ODCM, Rev. 17; and FSAR, Chapters 11 and 12. Procedures and records reviewed during the inspection are listed in the Attachment.

Enclosure

Effluent Release Processing and Quality Control (QC) Activities

The inspectors directly observed the weekly change out and processing of the main plant vent, waste processing building 5 and 5A vents, and the turbine building continuous airborne effluent monitoring samples, and the collection and processing of the turbine building sump liquid grab samples. **Chemistry technician proficiency in collecting, processing, and analyzing the samples, as well as preparing applicable release permits was evaluated.**

QC activities regarding gamma spectroscopy and beta-emitter detection were discussed with counting room technicians and Chemistry supervision. The inspectors reviewed selected August 2005 daily QC check data and January 2004 through January 2005 counting room equipment quality control summaries for gamma spectroscopy and liquid scintillation analysis equipment. For gamma spectroscopy system No. 1 through No. 4, the inspectors reviewed calendar year (CY) 2003 through June 2005 daily QC quarterly cross-check summaries and the most recent calibration records.

Selected procedures for effluent sampling, processing, and release were evaluated for consistency with licensee actions. Liquid and gaseous release permits were reviewed against ODCM specifications for pre-release sampling and establishment of effluent monitor setpoints. **The ODCM was reviewed and discussed with responsible licensee representatives to identify and evaluate any changes made since January 1, 2003. The inspectors also reviewed CY 2003 and CY 2004 annual effluent reports for effluent release data trends and anomalous releases.**

Observed task evolutions, count room activities, and offsite dose results were evaluated against details and guidance documented in the following: 10 CFR Part 20 and Appendix I to 10 CFR Part 50; ODCM; RGs 1.21 and 4.15; RG 1.109, Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50 Appendix I, October 1977; and TS 6.8. Procedures and records reviewed during the inspection are listed in the Attachment.

Problem Identification and Resolution

Selected CAP issues and audits associated with effluent release activities were reviewed and assessed. The inspectors evaluated the licensee's ability to identify, characterize, prioritize, and resolve selected issues in accordance with CAP-0200, Corrective Action Program, Rev. 14. Reviewed documents are listed in the Attachment.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

REMP Implementation

REMP program activities conducted by Harris Energy and Environmental Center (HEEC) laboratory staff were reviewed and evaluated. The licensee's 2002, 2003, and 2004 Annual Radiological Environmental Operating Reports were reviewed and discussed with licensee representatives. The inspectors evaluated data analyses, surveillance results, and land-use census assessments. Report details were assessed for required monitoring frequencies, sample types and locations, and resultant data trends.

The inspectors reviewed and evaluated procedural guidance and its implementation, and assessed knowledge and proficiency of responsible staff. In addition, laboratory analysis QC activities were reviewed and evaluated including inter-laboratory sample comparison results; analytical measurement instrumentation performance checks and background determinations; analysis sensitivities and lower limit of detection (LLD) capabilities for gamma spectroscopy and gross beta analyses; and flow calibrations for pumps used in REMP airborne sampling systems. On August 1, 2005, the inspectors observed the processing of a milk sample in preparation for analysis by the HEEC personnel. The proficiency and knowledge of technicians processing the sample and the adequacy of the preparation technique were assessed.

The inspectors toured and evaluated selected sampling stations for location and material condition of REMP equipment. Collection of air particulate filters and charcoal cartridges, and flow rate determinations were observed at air sampling stations 1, 2, 4, 5, and 47. The collection of water samples were observed at water sampling stations 26, 38, 40 and 51. The placement and condition of thermoluminescent dosimeters were evaluated at monitoring locations 1, 2, 4, 5, 26, 27, 28, 32, and 49. Using global positioning system equipment, the inspectors independently evaluated selected monitoring locations. Proficiency and knowledge of technicians collecting the samples and the adequacy of collection techniques were assessed.

Program guidance, procedural implementation, and environmental monitoring results were reviewed against TS; 10 CFR Parts 20 and Appendix I to 10 CFR Part 50 design criteria requirements; FSAR details; ODCM guidance; and applicable procedures listed in the Attachment. Specific laboratory QC activities were evaluated against RG 1.21, Measuring, Evaluating and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials In Liquid and Gaseous Effluents from Light-Water Cooled Nuclear Power Plant, June 1974; and RG 4.15, Quality Assurance for Radiological Monitoring Programs (Normal Operation) - Effluent Streams and the Environment.

Meteorological Monitoring Program Implementation

Licensee program activities to assure accuracy and availability of meteorological data were evaluated. The inspectors interviewed licensee individuals responsible for monitoring the meteorological data reliability and the licensee's meteorology contracting consultants. The inspectors reviewed the licensee's meteorological data for September through October 2004, and for the months of February and May in CY 2005, for proper validation, correction of errors, and data recovery rates. The inspectors reviewed and evaluated maintenance and calibration data for the meteorological tower equipment documented in WO 00622316-01, completed March 24, 2005. The inspectors toured meteorological facilities and assessed equipment material condition, and reviewed instrument operability and current meteorological data accuracy by comparing local meteorological station data averages with Control room data outputs.

The meteorological program implementation and activities were reviewed against 10 CFR Part 20, TS, FSAR Section 2.3.3, ODCM, RG 1.23 (Safety Guide 23), Onsite Meteorological Programs, February 1972, and applicable procedures documented in the Attachment.

Unrestricted Release of Materials from the RCA

Radiation protection program activities associated with the unconditional release of materials from the RCA were reviewed and evaluated. The inspectors directly observed surveys of potentially contaminated materials released from the RCA using the Small Article Monitor (SAM)-9 equipment. In addition, SAM-9 equipment sensitivity was assessed using a low level radioactive source, i.e. activity approximately 5000 disintegrations per minute. To evaluate the appropriateness and accuracy of release survey instrumentation, radionuclides identified within recent waste stream analyses were compared against current calibration and performance check source radionuclide types. Current calibration and performance check data were reviewed and discussed. In addition, licensee guidance to evaluate survey requirements for hard-to-detect radionuclides were reviewed and discussed.

The licensee practices and implementation of monitoring for unconditional release of materials from the RCA were evaluated against 10 CFR Part 20, TS, FSAR Section 12, and applicable procedures. The applicable licensee guidance, calibration records, and performance data that were reviewed are listed in the Attachment .

Problem Identification and Resolution

Licensee corrective action program documents associated with REMP operations and with the unrestricted release of materials from the RCA were reviewed and evaluated. The inspectors also reviewed and discussed selected NCRs within the REMP program documented between June 19, 2002, and August 3, 2005, to determine if the issues were appropriately identified, reviewed and resolved. Specific documents reviewed and evaluated are identified in the Attachment.

Enclosure

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

40A1 Performance Indicator Verification

a. Inspection Scope

The inspectors sampled licensee data for the performance indicators (PIs) listed below. To verify the accuracy of the licensee data reported, PI definitions and guidance contained in NEI 99-02, Regulatory Assessment Indicator Guideline, Rev. 3, were used to screen each data element.

Public Radiation Safety Cornerstone

- RETS/ODCM Radiological Effluent

The inspectors reviewed the Radiological Effluent Technical Specifications (RETS)/ODCM Effluent Occurrence PI results from October 1, 2004, through June 30, 2005. For the review period, the inspectors assessed cumulative and projected doses to the public, and OOS effluent radiation monitors and implementation of compensatory sampling and subsequent results. The inspectors also reviewed licensee procedural guidance for collecting and documenting PI data. Documents reviewed are listed in the Attachment.

Occupational Radiation Safety Cornerstone

- Occupational Exposure Control Effectiveness

The inspectors reviewed the Occupational Exposure Control Effectiveness PI results from October 1, 2004, through June 30, 2005. For the assessment period, the inspectors reviewed ED alarm logs, radiological event reports, and CRs related to radiologically significant area controls. The inspectors also reviewed licensee procedural guidance for collecting and documenting PI data. Documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems

To aid in the identification of repetitive equipment failures or specific human performance issues for followup, the inspectors performed frequent screenings of items entered into the CAP. The review was accomplished by reviewing daily AR reports.

4OA3 Event Followup

.1 (Closed) Licensee Event Report (LER) 05000400/2005004-00. Essential Services Chilled Water (ESCW) system inoperable for a period longer than allowed by Technical Specifications.

a. Inspection Scope

The inspectors reviewed the subject LER, Engineering Change 51444, and Condition Report 163435 to assess the cause and licensee actions for the inoperability of the ESCW systems between November 17, 2004 and March 5, 2005. The inspectors also reviewed the corrective actions to verify that they were appropriate. Documents reviewed are listed in the Attachment.

b. Findings

Introduction. The inspectors identified a Green NCV of 10CFR50, Appendix B, Criterion III, "Design Control," for failure to ensure that adequate design control measures were implemented on an ESCW system design change (engineering change 51444), which resulted in both ESCW systems being inoperable for greater than the allowed outage time specified in TS 3.7.13.

Description. The NRC identified that, during a refueling outage (RFO) in November, 2004, the licensee implemented a design change on both ESCW systems which rendered them incapable of maintaining positive pressure in the ESCW expansion tanks upon loss of service air pressure. Positive pressure in the expansion tanks is required for system operability.

Engineering change (EC) 51444 replaced two solenoid operated expansion tank isolation valves with a check valve in each train of ESCW. The isolation is necessary to separate the non-safety service air system from the ESCW expansion tank in order to maintain positive pressure in the expansion tank and the ESCW piping loop upon failure of the service air system. EC 51444 concluded that a leak rate of 0.9 lbs per 15 minutes was the maximum acceptable leak rate through the check valve and this criterion was established as the leak rate standard in the licensee's surveillance procedures. Upon installation of the design change, the leak rates were 0.7 lbs/15 minutes and 0.59 lbs/15 minutes for A and B ESCW trains respectively. These leak rates were considered acceptable based on an assumed operator response time of 12 hours to diagnose and correct a low ESCW expansion tank pressure condition. The design modification, therefore, changed the automatic expansion tank isolation function into a manual action

to ensure ESCW system operability if service air pressure is lost. Furthermore, EC 51444 did not define the expected actions that operators would take to maintain pressure in the ESCW expansion tanks, there were no specific plant procedures which detailed how operators were to restore ESCW expansion tank pressure, and there was no dedicated or staged equipment to provide a temporary pressure source to the expansion tanks. On February 25, 2005 the B ESCW leak rate was noted to be 2.3 lbs/15 minutes, and on March 1, 2005 the A ESCW leak rate was measured at 1.95 lbs/15 minutes. The licensee restored operability on March 5, 2005 by implementing a temporary modification which manually isolated the expansion tanks, provided adequate procedures for pressurizing the expansion tanks from an alternate source, and staged the necessary equipment for tank pressurization.

Analysis. The inadequate design change of the ESCW system is more than minor because it affects the Mitigating Systems Cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e. core damage). The finding is also associated with the Mitigating Systems Cornerstone attribute of design control. The significance determination process (SDP) of NRC Inspection Manual Chapter 0609, Appendix A was used to determine the safety significance of the finding. Since the degradation of the ESCW system represented a loss of system safety function, a Phase 2 SDP analysis was required. The Phase 2 SDP analysis determined that the significance of the finding was potentially greater than green because the degradation of the ESCW system existed for more than 30 days, and the ESCW system is a support system for the high head safety injection (HHSI) system, which affects several core damage sequences. Therefore, a Phase 3 evaluation for the finding was performed. Based upon data which showed that the chillers' check valves leaked at a low enough rate that the chillers would operate for at least 24 hours before causing loss of function of the systems they support, the finding was considered to have very low safety significance. The cause of the finding is related to the organization aspect of the human performance cross-cutting area. Specifically, the engineering organization's lack of understanding of design control requirements with regard to manual actions led to implementation of the inadequate ESCW system modification.

Enforcement. 10CFR50, Appendix B, Criterion III, "Design Control," requires that measures shall be established to assure that applicable regulatory requirements and the design basis are correctly translated into specifications, drawings, procedures, and instructions. Contrary to this requirement, an inadequate design (EC 51444) was implemented in November, 2004 which, upon the loss of service air, would have resulted in depressurization of the ESCW system. However, because of the very low safety significance and because the issue was entered into the corrective action program (AR #152362 and #163435) and compliance was restored, this finding is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy: NCV 05000400/2005004-02, Failure to Implement Adequate ESCW Design Change.

.2 (Closed) LER 05000400/2005003-00. Equipment Drain System Isolation Valve Inoperable Longer Than Its Allowed Outage Time.

On June 8, 2005, the licensee identified that an equipment drain system containment isolation valve (1ED-125) had leakage in excess of 0.6 L_a requiring the valve to be declared inoperable in accordance with TS 3.6.3. The penetration was isolated by closing and deactivating redundant valve 1ED-121. Upon further review, the licensee identified that the data supporting the inoperability declaration was available on June 5, but not reviewed until June 8. This data was the result of a troubleshooting effort performed on June 5 to detect system leakage, however no specific acceptance criteria was provided. The action statement for TS 3.6.3 requires that within 4 hours of identifying an inoperable containment isolation valve, that either the valve be restored to an operable status or the affected penetration isolated within 4 hours. Because the information to support the inoperability of 1ED-125 existed since June 5, but was not acted upon until June 8, 1ED-125 was inoperable for a period longer than allowed by TS 3.6.3. Corrective actions for this matter included repairing valve 1ED-125 and returning it to service. In addition, the licensee plans to revise their troubleshooting procedure to provide specific guidance requiring acceptance criteria to be established for troubleshooting on operable components. This finding is more than minor because it was associated with the barrier integrity cornerstone attribute of functionality of containment and the cornerstone objective of protecting the public from radioactive releases (due to an accident). In addition, the finding had a credible impact on safety, in that if the redundant valve in the penetration did not close on a containment isolation signal, containment integrity would not be ensured. The finding is considered to have very low safety significance (Green) using Appendix A of the SDP because the finding did not represent an actual open pathway in the physical integrity of reactor containment because the redundant isolation valve remained operable during this event. The enforcement aspects of the finding are discussed in Section 4OA7. This LER is closed.

4OA5 Other Activities

.1 (Closed) Temporary Instruction (TI) 2515/161, Transport of Control Rod Drive (CRD) in Type A Packages.

The inspectors reviewed shipping logs and discussed shipment of CRDs in Type A packages with the shipping staff. The inspectors noted that no shipments of CRDs in Type A packages have been made since January 1, 2002. Further, the inspectors reviewed and discussed Department of Transportation requirements for proper Type A package use with responsible licensee shipping personnel.

.2 Operational Readiness of Offsite Power (Temporary Instruction (TI) 2515/163)

Completion of this TI was documented in NRC Inspection Report 05000400/2005003. However, after an NRC headquarters review of the data provided, additional information related to the TI was requested. The inspectors collected this information from licensee

discussions, site procedures and licensee documentation. The information was subsequently provided to the headquarters staff for further analysis.

4OA6 Meetings, Including Exit

.1 Quarterly Integrated Inspection Report Exit

On October 12, 2005, the resident inspectors presented the inspection results to Mr. R. Duncan and other members of the Harris staff. The resident inspectors confirmed that proprietary information was not provided or examined by them during the inspection, however, during the weeks of July 30 and August 6, proprietary information was reviewed by health physics inspectors, but is not included in the report.

.2 Management Meeting Summary

On September 8, 2005, NRC Region II Management and staff conducted a public meeting with Progress Energy - Carolina Power & Light (CP&L) to discuss the performance of the Shearon Harris Nuclear Power Plant. Attendees included Harris management and site staff.

This meeting was open to the public. The licensee's presentation material used during the meeting is available from the NRC's document system (ADAMS) as accession number ML052570005. ADAMS is accessible from the NRC website at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

4OA7 Licensee-Identified Violations

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

TS 3.6.3 requires that a containment penetration be isolated within 4 hours, if an associated containment isolation valve is not operable. Contrary to this, on June 5 to 8, 2005, a containment isolation valve (1ED-125) for the equipment drain system was not operable, and the penetration was not isolated within 4 hours. This was identified in the licensee's corrective action program as AR 160859. This finding is of very low safety significance because it did not represent an actual open pathway in the physical integrity of the reactor containment.

ATTACHMENT: SUPPLEMENTAL INFORMATION

Enclosure

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel

A. Barginere, Superintendent, Security
J. Briggs, HNP, Superintendent, Environmental and Chemical
D. Corlett, Supervisor - Licensing/Regulatory Programs
F. Diya, Manager - Engineering
R. Duncan, Director - Site Operations
P. Fulford, Acting Manager, Nuclear Assistant
W. Gurganious, Training Manager
K. Henderson, Maintenance Manger
E. McCartney, Plant General Manager
T. Morton, Manager - Support Services
T. Natale, Manager -Outage and Scheduling
T. Pilo, Supervisor - Emergency Preparedness
J. Scarola, Vice President Harris Plant
G. Simmons, Superintendent - Radiation Control
E. Wills, Operations Manager
M. Wallace, Licensing Specialist

NRC personnel

P. Fredrickson, Chief, Reactor Projects Branch 4

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Opened and Closed

05000400/2005004-01	NCV	Failure to Maintain an Acceptable Program for Periodic Calibration of Emergency Plan ARMs in Accordance with 10 CFR 20.1101 (Section 2OS3).
05000400/2005004-02	NCV	Failure to Implement Adequate ESCW Design Change (Section 4OA3.1)

Closed

05000400/2005004-00	LER	Essential Services Chilled Water (ESCW) system inoperable for a period longer than allowed by Technical Specifications (Section 4OA3.1)
05000400/2005003-00	LER	Equipment Drain System Isolation Valve Inoperable Longer Than Its Allowed Outage Time (Section 4OA3.2)
2515/161	TI	Transport of Control Rod Drive (CRD) in Type A Packages (Section 4OA5)

Discussed

None

LIST OF DOCUMENTS REVIEWED

Section 1R04: Equipment Alignment

Partial System Walkdown

Essential services chilled water system:

Procedure OP-148, "Essential Services Chilled Water System"

Drawing 2165-S-0999, "Simplified Flow Diagram HVAC Essential Services Chilled Water System"

Residual heat removal system:

Procedure OP-111, "Residual Heat Removal System"

Drawing 2165-S-1324, "Simplified Flow Diagram Residual Heat Removal System"

Emergency Diesel Generator system:

Procedure OP-155, "Diesel Generator Emergency Power System,"

Drawing 2165-S-0633, sheets 1 through 4, "Simplified Flow Diagram Emergency Diesel Generator Systems"

Complete System Walkdown

Procedure OP-139, "Service Water System"

System Description 139, "Service Water System"

Design Basis Document -128, "Service Water System"

Drawing 2165-S-0547, "Simplified Flow Diagram Circulating and Service Water Systems"
FSAR section 9.2.1, "Service Water System"

Section 1R05: Fire Protection

FPQ0001H, "Fire Drill Planning Guide and Critique Evaluation Form"

Section 1R06: Flood Protection Measures

FSAR Sections

2.4.10, "Flooding Protection Requirements"

3.6A.6, "Flooding Analysis"

Other Documents:

Specification CAR-SH-E-14B, "Electric Cables", Revision 10

Work Orders 699063, 666164, 650558, 610533, 572768, 572767, 572766, 560322, 541448,
524208, and 506674

Drawing CAR 2166 B-058

Section 1R07: Heat Sink PerformanceProcedures:

PLP-620, "Service Water Program (Generic Letter 89-13)"

Section 1R12: Maintenance Effectiveness

NUMARC 93-01, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants"

ADM-NGGC-0101, "Maintenance Rule Program"

CP&L Calculation #CT-0027, "Detail Calculation on NaOH Eductor Loop"

AR #140449, "Loss of the 1A-SA Emergency Bus."

AR #159131, "1B-SB 86UV Relay Failed to Roll During OST-1124"

AR #157566, "Failure of 86UV/1731 to Trip During OST-1122."

Section 1R13: Maintenance Risk Assessments and Emergent Work Evaluation

OMP-003, "Outage Shutdown Risk Management."

WCM-001, "On-line Maintenance."

Section 1R15: Operability Evaluations

OPS-NGGC-1305, "Operability Determinations"

Section 1R19: Post Maintenance Testing

OST-1216, "Component Cooling Water System Operability (A-SA and B-SB Pumps in Service) Quarterly Interval Modes 1-2-3-4"

OST-1092, "1B-SB RHR Pump Operability"

OST-1119, "Containment Spray Operability Train B"

Section 1R23: Temporary Plant ModificationsFSAR sections

15.6.3, "Steam Generator Tube Rupture"

5.4.5, "Main Steam Line Isolation System"

Section 20S1: Access Controls To Radiologically Significant Areas

Procedures, Guidance Documents, and Manuals

ADM-NGGC-0104, Work Management Process, Revision (Rev.) 28
 AP-504, Administrative Controls for Locked and Very High Radiation Areas, Rev. 20
 DOS-0004, Administrative Dose Limits, Rev. 7
 DOS-0007, Internal dose Calculation, Rev. 9
 DOS-0021, WBC System Operation, Rev. 12
 HPP-600, Preparation of Radiation Work Planning Process, Rev. 19
 HPP-602, Radiation Protection Work Planning Process, Rev. 0
 HPP-625, Performance of Radiological Surveys, Rev. 20
 HPP-627, Radiological Controls for Diving Operations, Rev. 7
 HPP-800, Handling Radioactive Material, Rev. 44
 HPP-880, Spent Nuclear Fuel Shipping and Receipt, Rev. 27
 HPS-003, Radiological Posting, Labeling and Surveys, Rev. 8
 HPS-NGGC-0014, Radiation Work Permits, Rev. 2
 NGGM-PM-0002, Radiation Control and Protection Manual, Rev. 34
 Special Process Procedure SPP-0036, Waste Processing Building 236' Demineralizer System
 F-50/F-60 Filter Changeout, Rev. 6
 Radiation Work Permit (RWP)-01780 04, Filter Changes On Contaminated Systems Including
 Demin Skid
 RWP-03397, Diving Operations
 RWP-01784, Reactor Containment Building Entries With Reactor Critical
 RWP-01781, Spent Fuel Cask Maintenance
 ALARA WORK PLAN (AWP) Number (No.) 04-024, Diving Activities Associated With The 1-
 4 Transfer Canal
 AWP No. 05-021, Underwater Repair to Cask Crane
 Debrief notes and Lessons Learned From the 09/14/04 Diving Activity

Records and Data Reviewed

Contamination Occurrence Logs, April 2004 - June 2005
 Internal Dose Assessment Head Support Work, 1 CEDE, 11/01/04
 Internal Dose Assessment, Cavity Decon, 0 CEDE, 10/30/04

Corrective Action Program (CAP) Documents

Harris Nuclear Plant Radiation Protection Assessment, H-RP-04-01, 12/17/04
 Action Request (AR) 00120577, Diver EPD Alarm
 AR 00121237, Diver EPD/TLD Discrepancies
 AR 00159463, Ambiguously Labeled Drum Containing Radioactive Waste Material
 AR 00140366, Radioactive Posting Procedure Non-compliance
 AR 00156169, Air sample Not Pulled Per RWP Requirements
 AR 00141414, Posted Radiological Boundary Violation
 AR 00142629, Discrepancies With Spent Fuel Pool Inventory

Section 2OS3: Radiation Monitoring Instrumentation and Protective Equipment

Procedures, Guidance Documents, and Manuals

NGGM-PM-0002, Radiation Control and Protection Manual
 CRC-821, Post-Accident Sampling, Rev. 26
 Operations Management Manual (OMM)-002, Shift Turnover Package, Rev. 39
 HPP-630, Respiratory Protection, Rev. 19
 HPP-631, Certification and Operation of Breathing Air Supplies, Rev. 17
 PLP-511, Radiation Control and Protection Program, Rev. 17
 Maintenance Surveillance Test (MST)-I0361, MCR Normal Outside Air Intake Radiation Monitor RM-01CZ-3504BSB Calibration, Rev. 10
 AP-512, Use of Respiratory Protection Equipment, Rev. 25
 CAP-0200, Corrective Action Program, Rev. 14
 DOS-0020, Whole Body Counter Calibration, Rev. 6
 EPM-420, Emergency Equipment Inventory, Rev. 5
 ERC-114, Control of Radiation Instruments and Equipment, Rev. 6
 HPS-0005, Calibration of Portable Radiation and Contamination, Rev. 5
 HPS-0009, Operation of Radiation & Contamination Survey Instruments, Rev. 2
 HPS-0011, Cs-137 Calibration Source Standardization, Rev. 2
 HPS-0015, Managing Respirators, Rev. 4
 SIC-700, Operation and Certification of Calibration Standards, Rev. 9
 SIC-725, Calibration of Whole Body Friskers or Portal Monitors, Rev. 8
 Technical Document Report RC-021, Neutron Dose Tracking for RCB Entry, Rev. 0, 7/13/93
 Radiation Protection Technical Note 04-001, Use of a "Grace Period" for Calibrations, Rev. 0, 2/10/04
 Nuclear Generating Group C Administrative Procedure (ADM-NGGC)-0107, Equipment Reliability Process Guideline, Rev. 3
 Plant Emergency Procedure (PEP) - 240, Activation and Operation of the Technical Support Center, Rev. 8

Records and Data Reviewed

Respirator Equipment History Record, Serial Number (S/N) 2664, S/N 2655, and 2651; 2/29/00 to present
 Respirator Equipment History Record, S/N 2657, 5/99 to present
 Respirator Equipment Inspection Record, June 2005
 Breathing Air Quality Certifications for: Service Air Compressor, Blast Yard Compressor, and Eagle Air Compressor, 2/17/05 and 7/26/05
 Air Testing Equipment Calibration Sheet and CO Monitor Calibration, 7/18/05
 HNP ERO Respirator Qualifications, 8/3/05
 Harris Nuclear Plant (HNP) Dry Active Waste Analysis, 04/12/15
 Smear from A Primary Sample Sink Analysis, 06/22/05
 Certificates of Calibration for Calibration Sources: 03-021B, 00-068, 00-072B, 00-072A, 86-001, 98-003, 99-052
 Training Module RCC0051H, SCBA Bottle Change-out
 Training Module GNC0007H, SCBA Delta Training
 Training Module RCC0095H, Survey Instrument Response to Plant Sources, 10/14/04

Neutron Calibration Source Certification Data Sheet, 07/11/05
 Shepherd Model 89 Recertification Spreadsheet, 02/22/05
 WO 99916-01, Inspect and Calibrate RM-01RR-3601 (Letdown HX Valve Gallery), 10/18/01
 WO 100575-01, Inspect and Calibrate RM-21RR-3560A (Control Room Area Monitor),
 01/14/02
 WO 174158-01, Containment Ventilation Isolation Monitor RM-01CR-3561B Calibration,
 05/13/03
 WO 399780-01, Containment Ventilation Isolation Monitor RM-01CR-3561B Calibration,
 11/02/04
 WO 642952, RM-01CZ-3504B Control Room Normal Outside Air Intake Operational Test,
 02/15/05
 WO 101542-01, RM-01CZ-3504B Control Room Normal Outside Air Intake Calibration,
 07/10/02
 WO 234209-01, RM-01CZ-3504B Control Room Normal Outside Air Intake Calibration,
 11/05/03
 PMR Number 96-0222, Preventative Maintenance Revision/Rescheduling Request Form,
 System Number 7005, Procedure PIC-1900, dated 05/14/96
 Calibration Records for: WBC, Standup No. 01, 9/2/04;
 Calibration Records for: IPM-7, S/N 0214, 4/28/05;
 Calibration Records for: SAM, S/N 143, 3/10/05;
 Calibration Records for SPM-906, S/N 906084, 4/20/05; and SPM-904C, S/N 90435, 7/22/05
 Calibration Records for Eberline 6112B: S/N 25435, 2/28/05; and S/N 65187, 1/31/05
 Calibration Records for LMC 12/42-30, S/N 66627, 5/13/05
 Calibration Records for Eberline RO-2: S/N 5000, 3/2/05; and S/N 5035, 3/15/05
 Calibration Records for LMC 177: S/N 34591, 10/17/04; and S/N 45618, 10/6/04

CAP Documents

Respiratory Protection Self-Assessment, No 92929, dated 12/1/03
 HNP Industrial Safety and Hygiene Instrumentation Self-Assessment No. 78676, dated
 12/19/03
 H-RP-03-02 (HNAS 03-127), Radiation Protection Assessment, 12/5/03
 H-RP-03-01 (HNAS 03-012), HNP Radiation Protection Assessment, 3/3/03
 H-RP-04-01 (HNAS 04-091), HNP Radiation Protection Assessment, 12/17/04
 AR 165600, Respirator Spectacle Storage, 8/4/05
 AR 90218, RCB Standpipe Job Dose Estimate Exceeded due to Neutrons, 4/13/03
 AR 112381, Respiratory Protection Self Assessment, 82929-03 W2, 12/2/03
 AR 142698, Service Air System Being Used for Breathing Air, 11/3/04
 AR 127084, Instrument Source Check, 5/15/04
 AR 120842, Respirator Qualification Expired, 3/8/04
 AR 120145, SCBA and Face Piece Problems, 3/1/04
 AR 67211, Calibration Performed with Source not Traceable to NBS, 7/26/02
 AR 91686, Cavity Sump Dose Rate Survey Results Incorrect, 4/26/03
 AR 00138482, Delete the Unnecessary PM Tasks for System 7005 Components, Classified
 as RTF, 09/28/04
 AR 00165629, EP Radiation Monitors Classified as RTF Need to Be Reevaluated, 08/10/05

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

Procedures, Guidance Documents, and Manuals

Administrative Procedure (AP) - 556, Effluent Management Program, Rev. 1
 Chemistry and Radiochemistry Procedure ERC-009, Handling Inoperable Monitors, Rev. 4
 Chemistry and Radiochemistry (CRC) Procedure - 290, Radiological Sample Compositing, Rev. 10
 CRC Procedure - 240, Plant Vent Stack 1 Effluent Sampling, Rev. 10
 CRC Procedure - 241, Turbine Building Vent Stack 3A Effluent Sampling, Rev. 12
 CRC Procedure - 242, Waste Processing Building Vent Stack 5 Effluent Sampling, Rev. 14
 CRC Procedure - 243, Waste Processing Building Vent Stack 5A Effluent Sampling, Rev. 11
 Operating Procedure (OP) - 120.07, Waste Gas Processing, Rev. 45
 OP - 120.07, Treated Laundry and Hot Shower Tanks, Rev. 27
 Operations Work Procedure (OWP)-RM, Radiation, Effluent, and Explosive Gas Monitoring, Rev. 26

Records and Data

Annual Radioactive Effluent Release Report for Calendar Year (CY) 2003 dated April 15, 2004
 Annual Radioactive Effluent Release Report for CY 2004 dated April 12, 2005
 Quarterly Cross Check Analysis Results Data for Calendar Year (CY) 2003, 2004, and 1st Quarter 2005
 Packard Liquid Scintillation Counter (LSC) Serial Number (S/N) 2100TR: Efficiency Calibration Data and Determination and Lower Limit of Detection (LLD) Calculation Conducted (07/15/04)
 Tennelec Calibration Results for CY 2004 and/or Year-to-Date 2005 Including Gross Alpha Liquid Filter Calibration Data; Gross Beta Liquid and Filter Calibration Data; Alpha and Beta Plateau Data, Crosstalk Data, LLD Determinations, and Daily QC Limit Calculation for Instrument S/N 5120-281, SN 5120-282, and S/N 5120-259
 Chemistry Counting Room Gamma Spectroscopy Data for Detector No 1 through No. 4 Analysis Geometries for Current CY 2004 Calibrations Including: (I) Efficiency Calibration Data, (ii) Efficiency Comparison Reports, and (iii) Lower Limit of Detection (LLD) Analysis Reports
 Chemistry Counting Room Instrumentation Quality Control Summaries, January 2004 - January 2005
 Environmental and Chemistry Technical Report 01-009, Evaluation of Lower Limit of Detection of Radioactivity in Sewage Sludge, Rev. 0
 Environmental and Chemistry Technical Report - 02-005, Evaluation of Tritium Bubbler Collection Efficiency, Rev. 0
 Environmental and Chemistry Technical Report - 03-001, Evaluation of Abnormal Release of Krypton (Kr)-85 during Venting of Spent Fuel Cask, Rev. 0
 Liquid Radioactive Waste Release Permit 50019.001.019, Treated Laundry & Hot Shower A Tank, 06/01/05
 Liquid Radioactive Waste Release Permit 40026.004.003, Secondary Waste Sample Tank, 06/01/04

Liquid Radioactive Waste Release Permit 40024.004.002, Secondary Waste Sample Tank, 05/28/04

Liquid Radioactive Waste Release Permit 40022.004.001, Secondary Waste Sample Tank, 05/25/04

Gaseous Radioactive Waste Release Permit 50102.051.024.G, Continuous Release, Waste Process Building, Stack 5A, 06/14/05

Gaseous Radioactive Waste Release Permit 40114.036.001.G, Waste Gas Decay Tank C

Gaseous Radioactive Waste Release Permit 40202.040.001.G, Waste Gas Decay Tank G,

Gaseous Radioactive Waste Release Permit 40102.014.010.G, Plant Vent Stack-1 Batch/Containment Gas, 05/17/04

Gaseous Radioactive Waste Release Permit 40093.014.009.G, Plant Vent Stack-1 Batch/Containment Gas, 05/09/04

Radiation Surveillance Test (RST) - 012, Primary Calibration of General Atomic (GA) Gaseous Radiation Monitors, Rev.1, Completed 06/18/86

Maintenance Surveillance Test (MST)-I0415, Containment Pre-Entry Purge Radiation Monitor, REM-01LT-3502B Calibration, Work Order (WO) 00385878 01 Completed 10/17/04; and O 00176520 01, Completed 04/27/03

MST-I0378 Plant Vent Stack Accident Monitor Operational Test, WO 00610511 01 Completed 01/04/05; and WO 00572730 Completed 09/26/04

MST I0376, Plant Vent Stack Accident Monitor Channel Calibration, WO 00424558 Completed 04/07/05; WO 00201752 Completed 10/15/03

MST-I0327, Waste Monitor Tanks Discharge Monitor REM-21WL-3541 Calibration, WO 00303323 01 Completed 06/29/04; and WO 00123017 01 Completed 10/28/02

WO 00384112 01, Perform PIC I915, Inspect and Calibrate Radiation Monitor System, REM-01TV-3534, Condensate Vacuum Pump Effluent Treatment System, January 05

WO 00129105 01, Perform PIC I915, Inspect and Calibrate Radiation Monitor System, REM-01TV-3534, Condensate Vacuum Pump Effluent Treatment System, January 03

WO 00633317 01, Blow Out Flow Element (FX-01AV-3531-1) In Duct Work Using Instrument Air, March 05

WO 00633317 01, Blow Out Flow Element (FX-01AV-3531-1) In Duct Work Using Instrument Air, October 04

Drawing CAR-2168, G-517S03, HVAC-Air Flow Diagrams, Reactor Auxiliary Building, Rev. 29, dated 05/17/05

Reactor Auxiliary Building Normal Exhaust Ventilation Results including Visual Inspection, Airflow Capacity, Charcoal Bed Leak Test, HEPA Filter Leak Test, and Iodine Retention Test for E-17 ventilation completed 07/24/03 and 02/22/05; E-18 ventilation completed 5/15/02 and 10/10/03; E-19 ventilation completed 08/01/03 and 02/24/05; and E-20 completed 10/24/01 and 10/13/03

CAP Documents

Action Requests (AR) 00084078, Abnormal Release Out PVS-1 Due to Spent Fuel Cask Venting, 02/07/03

AR 00091945, Non-routine Release from Equipment Hatch during Head Lift, 04/30/03

AR 00093800, Effluent Concentration Monthly and Yearly Goal to be Exceeded, 05/16/03

AR 00112255, Turbine Building Auxiliary Sampler Inoperable, 12/01/03

AR 00127868, 31 Day Estimated Dose at ODCM Limit, 05/24/04

AR 00138795, Effluent Goal for Liquid Volume Exceeded for the Year, 09/30/04

AR 00152521, Sample Counted on Wrong Geometry, 03/02/05

Self-Assessment Report No. 82896, Radiological Effluent Management Programs, conducted 02/18-21/03

NAS Report File No.: H-ERC-02-01, Environmental and Chemistry and Radiation Control Assessment, dated 06/28/02

NAS Report File No.: H-EC-04-01, Harris Nuclear Plant Environmental and Chemistry Assessment, dated 04/26/04

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

Shearon Harris Nuclear Power Plant (SHNPP) Off-Site Dose Calculation Manual, Rev. 17
 SHNPP Off-Site Dose Calculation Manual, Rev. 16
 Environmental Control - Nuclear Generation Group Standard Procedure (EVC-NGGC) -0001, Operation and Calibration of HNP Environmental Air Samplers, Rev. 5
 ENV-NGGC-0002, Operation of the HNP Portable Water Samplers, Rev. 3.
 ENV-NGGC-0003, Radiological Environmental Monitoring Program for HNP, Rev. 2.
 ENV-NGGC-0004, HNP Land Use Census, Rev. 1
 EVC-NGGC-0005, Preparation of BNP, HNP, AND RNP Annual Radiological Environmental Operating Report, Rev. 1
 EVC-NGGC-0007, the Reporting of Anomalous Results, LLD Requirements, and A Priori Values for Radiological Environmental Samples, Rev. 2
 ENV-NGGC-0009, Determination of Tritium Activity in Aqueous or Solid Samples, Rev. 2.
 ENV-NGGC-0010, Determination of Gross Alpha and Gross Beta Activities, Rev. 2
 ENV-NGGC-0011, Determination of Radioiodine in Milk, Water, and Charcoal, Rev. 2
 EVC-NGGC-0012, Preparation and Counting of Samples for Determination of Gamma Activity, Rev. 2
 EVC-NGGC-0023, Determination of Alpha and Beta Counting Efficiencies, Rev. 1
 EVC-NGGC-0030, Calibration and Operation of the Tri-CARB 2500 TR Liquid Scintillation Analyzer, Rev. 1
 EVC-NGGC-0031, Calibration/Operation of the Canberra Nuclear 9900 Spectroscopy System, Rev. 1
 EVC-NGGC-0032, Operation of the Tennelec Low-background Simultaneous Alpha and Beta Counting System, Rev. 2

Data and Records Reviewed

Shearon Harris Nuclear Power Plant, Annual Radiological Environmental Operating Reports for calendar years 2002, 2003, and 2004. Including associated Radiological Environmental Monitoring Reports (TLDs, Beta, Iodine, Tritium, and Gamma Isotopic).

WO No. 00622316 01, MPT-I0129, Met Tower ADAC Computer to ERFIS Check Meteorological Monitoring Instrumentation at Met Tower

Dry Gas Meter Calibration Form, for Air Sampler No 2225, Rockwell Meter 6957699; Air Sampler No. 2226, Rockwell Meter 6957698,; Air Sampler No. 2229, Rockwell Meter 7322223; Air Sampler No. 2230, Rockwell Meter 7322225; Air Sampler No. 2231, Rockwell Meter 7322226; Air Sampler No. 2233, Rockwell Meter 7322231; and Air Sampler No. 2234, Rockwell Meter 7322232 using Mass Flow Meter ACL-051, S/N 2668, dated 04/22/05

Dry Gas Meter Calibration Form, Air Sampler No. 2232, Rockwell Meter 6957700; Air

Sampler # 2758, Rockwell Meter 9320375; Air Sampler No. 2759, Rockwell Meter 9320376;
 Air Sampler No. 2760, Rockwell Meter 9571890; Air Sampler No. 2761, Rockwell Meter
 9571891; Air Sampler No. 2762, Rockwell Meter 9571889; and Air Sampler No. 2263,
 Rockwell using Mass Flow Meter ACL-051, S/N 2668, dated 10/06/04
 Dry Gas Meter Calibration Form, Air Sampler No. 2225, Rockwell Meter 6957699; Air
 Sampler No. 2226, Rockwell Meter 6957698; Air Sampler No. 2229, Rockwell Meter
 7322223; Air Sampler No. 2230, Rockwell Meter 7322225; Air Sampler No. 2231, Rockwell
 Meter 7322226; and Air Sampler No. 2232, Rockwell Meter 6957700 conducted using Mass
 Flow Meter ACL-051, S/N 2668, dated 04/13/04
 Dry Gas Meter Calibration Form, Air Sampler No. 2234, Rockwell Meter 7322232, Mass Flow
 Meter ACL-051, S/n 2668, dated 05/13/04
 Dry Gas Meter Calibration Form, Air Sampler No. 2758, Rockwell Meter 9320375; Air
 Sampler No. 2760, Rockwell Meter 9571890; Air Sampler No. 2761, Rockwell Meter
 9571891; Air Sampler No. 2762, Rockwell Meter 9571889; and Air Sampler No. 2763,
 Rockwell Meter 9571894 conducted using Mass Flow Meter ACL-051, S/N 2668, dated
 05/01/03
 HNP Groundwater Cs-137 'A Priori' Calculation - (for 2004 REOR report)
 HNP Surface/Drinking Cs-137 'A Priori' calculation - (for 2004 REOR report)
 HNP Fish Cs-137 a priori calculation - (for 2004 REOR report)
 Environmental Cross Check Program Results, Carolina Power and Light Company, HEEC.
 (For 2nd Quarter 2002 to 1st Quarter 2005) Vendor Document

CAP Documents

Nuclear Condition Report (NCR) 00165377, Procedure Noncompliance, dated 08/03/05.
 NCR 00159637, Missing HNP Broadleaf Vegetation Samples January Thru April 2005, dated
 05/19/05
 NCR 00159418, Air Sampler AC/AP-47 Fuse Failure, dated 05/20/05
 NCR 00155953, Two Environmental Cross Checks Outside Acceptable Criteria, dated
 04/07/05
 NCR 00155496, Missing Food Crop Samples For First Quarter 2005
 NCR 00151637, Rad Material Control Deficiency , dated 02/22/05
 NCR 00148130, Missing TLD No. 7
 NCR 00146881, Instruments Failed Source check, 12/28/04
 NCR 00146520, Missed Broadleaf Vegetation Samples in the 4th Quarter, dated 12/20/04
 NCR 00146519, Missing Food Crop Samples for 4th Quarter, dated 12/20/04
 NCR 00142918, Elevated Dose Rates Outside RCA, dated 11/05/04
 NCR 00142457, Air Sampler at Location No. AC/AP-47, dated 11/01/04
 NCR 00141151, Missing Food Crop Samples, dated 10/21/04
 NCR 00137848, Air Sampler Found Inoperable on 09/20/04, dated 09/20/04
 NCR 00131028, Food Crop Samples Not Available, dated 06/29/04
 NCR 00128944, Air Sampler Not Working, dated 06/07/04
 NCR 00128209, HNP Broadleaf Vegetation Unavailable, dated 05/26/04
 NCR 00125362, REMP Air Sampler Malfunction, dated 04/26/04
 NCR 00123309, Missed Sample Corrections, dated 03/31/04
 NCR 00122717, Food Crops Unavailable for May 2003, dated 03/25/04
 NCR 00111568, REMP Lab Assessment Weakness #1, dated 11/20/03
 NCR 00109487, Broadleaf Samples Unavailable, dated 10/30/03
 NCR 00109485, Food Crop Samples Unavailable, dated 10/28/03

NCR 00102295, Air Sampler Trip, dated 08/18/03
 NCR 00102066, Missing Food Crops, dated 07/28/03
 NCR 00086180, Broadleaf Samples Not Available, dated 02/28/03
 NCR 00086178, Food Crop Samples Not Available, dated 02/28/03
 NCR 00083106, Broad Leaf Samples Unavailable for the Month of January, dated 01/27/03
 NCR 00083105, Food Crops Unavailable for Month of January, dated 01/27/03
 NCR 00071468, Air Sampler Pump Failure, 09/13/02
 NCR 00069313, Blown Fuse at Air Sampler Location No. 47, dated 08/20/02
 NCR 00064236, Air Sampler Motor Failure at Barricade Location, dated 06/24/02
 NCR 00063233, NRC Inspection of HNP REMP Program, 06/19/02 (Only Attachment 3,
 Significant Adverse Condition Investigation Form)
 H-RP-04-01, Harris Nuclear Plant Radiation Protection Assessment, dated December 17,
 2004
 H-RP-03-02, Harris Nuclear Plant Radiation Protection Assessment, dated December 5, 2003
 H-RP-03-01, Harris Nuclear Plant Radiation Protection Assessment, dated March 3, 2003
 AR 70096, HNP REMP Field Activities, dated 06/13/03
 AR 70098, HNP REMP Lab Activities, dated 11/05/03

Section 4OA1: Performance Indicator Verification

Records and Data Reviewed

Electronic Dosimeter Alarm or Malfunction Evaluation Records, July 2004 - July 2005
 Self Assessment Report Number (No.) 152347, Locked High Radiation Area Controls,
 conducted 05/05-18/05
 Self Assessment Report No. 114553, Documentation and Record keeping, conducted 06/28-
 07/02/04
 Harris Nuclear Plant (HNP) Refueling Outage 12 (R12) Site Post Outage Self Assessment
 No. AR 139733, conducted 12/01/04-01/27/05
 Nuclear Assessment Section (NAS) Report File No. H-RP-03-01, Harris Nuclear Plant
 Radiation Protection Assessment, dated 03/03/03
 NAS Report File No. H-RP-03-02, Radiation Protection Assessment, dated 12/05/03
 NAS Report File No. H-RP-04-01, Radiation Protection Assessment, dated 12/17/04

Section 4OA2: Identification and Resolution of Problems

CAP-NGGC-0200, "Corrective Action Program."

Section 4OA3: Event Follow-up

AR #168905, "Analysis did not consider all voiding mechanisms"

AR #163435, "ESCW technical specification violation due to manual actions"

AR #168957, "Unplanned LCO entry for B chiller"

Numerical Applications Inc. report #NAI-11881001 Rev. 1, "HNP Essential Services Chilled Water Loss of Accumulator Tank Pressure Analysis"

AR #15759, "Popping sound in P-4B chilled water pump"

AR #16301, "Expansion tank high level alarm on A WC-2 chiller"

AR #152362, "Excessive leakage of 1SA-641 and 1SA-642, A and B chiller expansion tank service air isolation check valves"

Ebasco Specification, Chilled Water Circulating Pumps, project ID #CAR-SH-BE-06

Procedure OP-148, "Essential Services Chilled Water" system

Procedure OST-1040, "Essential Services Chilled Water Systems Operability"