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United States Nuclear Regulatory Commission
ATTENTION: Document Control Desk
Washington, DC 20555

SHEARON HARRIS NUCLEAR POWER PLANT
DOCKET NO. 50-400/LICENSE NO. NPF-63
ANNUAL ENVIRONMENTAL (NON-RADIOLOGICAL) OPERATING REPORT

Ladies and Gentlemen:

In accordance with Section 5.4.1 of the Environmental Protection Plan issued as Appendix B to the Operating License (NPF-63) for the Harris Nuclear Plant, Carolina Power & Light Company, doing business as Progress Energy Carolinas, Inc., provides the enclosed Annual Environmental (Non-Radiological) Operating Report for 2004.

If you have any questions regarding this information, please contact me at (919) 362-3137.

Sincerely,

A handwritten signature in black ink, appearing to read 'D. H. Corlett'.

D. H. Corlett
Supervisor – Licensing/Regulatory Programs
Harris Nuclear Plant

DHC/mgw

Enclosure

c: Mr. R. A. Musser (NRC Senior Resident Inspector, HNP)
Mr. C. P. Patel (NRR Project Manager, HNP)
Dr. W. D. Travers (NRC Regional Administrator, Region II)

Progress Energy Carolinas, Inc.
Harris Nuclear Plant
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SHEARON HARRIS NUCLEAR POWER PLANT

UNIT 1

**ANNUAL ENVIRONMENTAL
(NONRADIOLOGICAL)
OPERATING REPORT**

January 1- December 31, 2004

**CAROLINA POWER & LIGHT COMPANY,
DOING BUSINESS AS PROGRESS ENERGY CAROLINAS, INC.**

Docket No. 50-400

Facility Operating License No. NPF-63
Appendix B

1.0 INTRODUCTION

Carolina Power & Light Company (CP&L) received a low-power Facility Operating License (No. NPF-53) and full-power Facility Operating License (No. NPF-63) for the Shearon Harris Nuclear Power Plant, Unit 1, from the U.S. Nuclear Regulatory Commission (NRC) on October 24, 1986, and January 12, 1987, respectively. Appendix B (the Environmental Protection Plan [nonradiological]) of the full-power license requires submittal of an Annual Environmental (nonradiological) Operating Report to the NRC describing the implementation of the plan during the previous year. The purpose of this document is to fulfill the requirement for the period January 1-December 31, 2004.

On January 1, 2003, Carolina Power & Light Company adopted the brand name Progress Energy Carolinas, Inc.

2.0 PLANT CONSISTENCY REQUIREMENTS [EPP Section 3.0]

2.1 Plant Design and Operation

During 2004, the Harris Nuclear Plant (HNP) received authorization from the North Carolina Division of Water Quality (NCDWQ) to construct improvements to its wastewater treatment facility. Plans include adding a smaller treatment facility, refurbishing the two existing facilities, and replacing the existing lab and office building.

During 2004, the HNP began upgrades to its potable water and demineralization make-up water treatment systems.

See Section 6.2 for additional details on the changes mentioned in Section 2.1.

There were no changes in plant design or operation and there were no tests or experiments performed which involved a potentially significant unreviewed environmental question during the reporting period.

2.2 Reporting Related to the NPDES Permit

Required NPDES monitoring data were submitted to the NCDWQ *via* monthly discharge monitoring reports and separate correspondence as warranted.

3.0 UNUSUAL OR IMPORTANT ENVIRONMENTAL EVENTS [EPP Section 4.1]

No occurrence of an unusual environmental event that would indicate or could result in a significant environmental impact causally related to plant operations occurred during the reporting period. No releases or exceedances of permit conditions caused any significant environmental impact. The existence of biofouling organisms (Asiatic clams, *Corbicula fluminea*) and the presence of troublesome aquatic vegetation (hydrilla, *Hydrilla verticillata*) in Harris Reservoir were considered important topics worthy of inclusion in this report.

3.1 Aquatic Biological Monitoring

A. Inspections for Asiatic clams (*Corbicula fluminea*) in the Harris Nuclear Plant Emergency Service Water System (e.g., intake structures)

Inspections of intake bays and screens were conducted via site procedure EPT-168 and were scheduled and implemented in conjunction with HNP's Generic Letter 89-13 Testing and Inspection Program. Inspections were conducted on four separate dates during 2004. Inspections of Bay 8 and Bay 6 at the Emergency Service Water Screening Structure were conducted on June 28, 2004, and August 2, 2004, respectively. The Asiatic clam population appears to be stable when compared to previous inspections. Bay 8 and Bay 6 at the Emergency Service Water Intake Structure were inspected on August 17, 2004, and October 22, 2004, respectively. An increase from less than 100 to 200 – 400 Asiatic and/or river clams was noted in Bay 8 while no clams were identified in Bay 6. Inspections of heat exchangers and associated components completed during 2004 revealed no sign of clam migration into the plant service water system.

B. Monitoring for hydrilla (*Hydrilla verticillata*), a nonnative aquatic weed.

On November 22-23, 2004, an intensive, visual survey of the shoreline was conducted in the Thomas Creek arm of the Harris Reservoir and in the HNP intake canal. Similar to previous years, the dominant aquatic vegetation was hydrilla and water primrose (*Ludwigia* spp.). The areal coverage of both aquatic weeds was similar to 2003. No additional habitat colonized by either species was observed.

The shoreline of the HNP auxiliary cooling reservoir intake canal was surveyed on November 30, 2004, and no hydrilla was found. Neither was hydrilla found at other locations in the auxiliary cooling reservoir including the back portions of the reservoir. The population size of grass carp (*Ctenopharyngodon idella*) was sufficient to prevent the infestation and spread of hydrilla in the auxiliary cooling reservoir in 2004.

Two new species of invasive aquatic plants were found in a concentrated area at Harris Reservoir in November 2002. Water hyacinth (*Eichhornia crassipes*) and water lettuce (*Pistia stratiotes*) were found across the lake from the Holleman's Crossroads boat ramp. No additional specimens have been observed since the original plants were discovered and removed in 2002.

No impacts to HNP operations from aquatic vegetation occurred in 2004.

4.0 ENVIRONMENTAL MONITORING

[EPP Section 4.2]

4.1 Aquatic Monitoring

[EPP Section 4.2.1]

Under the authority of the Clean Water Act, the state of North Carolina issued a National Pollutant Discharge Elimination System (NPDES) permit (NC0039586) for the HNP on May 1, 2002, that remains in effect until July 31, 2006. This permit includes the Harris Energy & Environmental Center (HE&EC) sewage treatment plant discharge as an outfall (007).

This permit requires that a state-certified laboratory perform the laboratory analyses performed on all non-field parameters analyzed for effluent samples. In accordance with this requirement, the HNP Environmental & Chemistry Laboratory was certified by the NCDWQ as a Wastewater Laboratory, effective January 1, 2004, and valid through December 31, 2004. In addition, during 2004 the Progress Energy Chemistry Laboratory at the HE&EC contracted with two NCDWQ-certified private laboratories, Tri-Test Laboratories and Environmental Testing Solutions, Inc., to perform analyses.

On November 9, 2004, a maintenance inspection was conducted at the CP&L-HEEC Outfall 007 Laboratory (Certificate Number 5145) by the NCDWQ. No deficiencies identified as a result of the inspection. The inspector documented several comments which have been addressed by the laboratory.

4.1.1 Effluent Monitoring

Routine effluent monitoring was conducted and reported to the NCDWQ as required by the NPDES permit. One reportable NPDES event occurred during 2004.

On February 22-23, 2004, an exceedance of the two hour time limit for chlorination occurred at Outfall 001 (Cooling Tower Blowdown). An inspection of the sodium hypochlorite pumps revealed that the controller was stuck in the "on" position at one pump. It was estimated that the timer had been stuck in that position since approximately 2100 hours on February 22, 2004. Approximately 1500-2000 gallons of sodium hypochlorite were pumped into the cooling tower during this time. The plant immediately began taking chlorine samples every 15 minutes. The first reading of 0.4 mg/l of free chlorine was below the maximum daily limit of 0.5 mg/l. Approximately fourteen more readings were taken until 1159 hours, none exceeding the 0.5 mg/l limit. The pump controller was taken out of service and the pump was operated manually until the repair was made.

On November 17, 2004, the HNP received a "Retraction of Notice of Violation and Assessment of Civil Penalty Case No. LV-2004-0173" from the NCDWQ. This retracted a Notice of Violation that was received for the events that occurred on June 14, 2003, which resulted in zinc concentrations in the cooling tower effluent being discharged in excess of the NPDES Permit limit. The NCDWQ agreed that the circumstances of the event met the criteria for an upset as set forth

in the NPDES Permit (i.e., an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee).

4.2 Terrestrial Monitoring [EPP Section 4.2.2]

Terrestrial monitoring is not required.

4.3 Noise Monitoring [EPP Section 4.2.3]

Noise monitoring is not required.

5.0 EPP AUDIT [EPP Section 5.1]

An audit conducted by an independent corporate entity was performed to verify the completeness and accuracy of the conditions and activities described in this annual environmental operating report. The results of the audit are on file and available for inspection.

6.0 PLANT REPORTING REQUIREMENTS [EPP Section 5.4]

6.1 EPP Noncompliances

There were no EPP noncompliances identified during the reporting period. One reportable NPDES event (Section 4.1.1) occurred during 2004.

6.2 Changes in Station Design

In February 2004, the HNP received authorization from the NCDWQ to construct improvements to its wastewater treatment facility. The HNP constructed one 15,000 gpd treatment facility to replace the existing two treatment facilities. The existing treatment facilities tanks are being refurbished for storage use. In addition, the existing lab/office building was demolished and replaced with a new one and a new sodium hypochlorite chemical feed and bulk storage system was constructed. The HNP requested that the NPDES Permit (NC0039586) be modified by reducing the monthly flow average from 0.05 to 0.025 million gallons per day. Upgrades were ongoing as of December 31, 2004.

During 2004 the HNP began upgrades to its potable water and demineralization make-up water treatment systems. The new system will consist of a dual-train, dual-barrier membrane treatment process. In support of the upgrades, the NCDWQ issued a minor modification to the NPDES Permit (NC0039586) to include membrane backwash water as a low-volume waste and allow discharge of said water through internal Outfall 004. Upgrades were ongoing as of December 31, 2004.

6.3 Non-routine Reports

There were no non-routine reports submitted in accordance with EPP Section 5.4.2. There was one NPDES reportable event (Sec. 4.1.1) identified during the reporting period.

6.4 Other Reporting Requirements

On February 18, 2004, a sanitary sewage overflow incident occurred at the Harris Energy & Environmental Center. Upon discovery of the spill onsite personnel immediately shut down the lift station. Approximately 250 gallons of sewage spilled to the ground, with an estimated 25 gallons reaching Little White Oak Creek. The remaining sewage in the lift station was pumped from the lift station by a contractor and transported to HE&EC's sewage treatment plant. The area of the spill was disinfected to eliminate any possible pathogens. The incident was caused by a pine tree root growing around a pipe fitting causing it to fail. The fitting that failed was replaced and tree roots in the area of the failure were trimmed.