Progress Energy

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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 2003.

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

Sincerely,

John R Caves

J. R. Caves
Supervisor – Licensing/Regulatory Programs
Harris Nuclear Plant

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Enclosure

c: Mr. R. A. Musser (NRC Senior Resident Inspector, HNP)
Mr. C. P. Patel (NRR Project Manager, HNP)
Mr. L. A. Reyes (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, 2003

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, 2003.

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

Construction for the new Apex US 1 230 kV Substation on Harris Nuclear Plant (HNP) property was started in 2002 and completed in 2003. There was no significant environmental impact as a result of this project.

The HNP Sanitary Waste Landfill (Permit #92-10) was closed in December 2003 in accordance with North Carolina Department of Environment and Natural Resources (NCDENR) approved plans and schedule. No new waste material has been added to the landfill since December 31, 2002.

The HNP requested 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 for storage capacity, and replacing the existing lab and office building.

See Section 6.2 for additional details on items discussed above.

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 National Pollutant Discharge Elimination System (NPDES) monitoring data were submitted to the NCDWQ *via* monthly discharge monitoring reports and separate correspondence as warranted.

As part of the requested authorization to construct improvements to the wastewater treatment facility (Sect. 2.1), 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. By letter dated December 8, 2003, HNP notified the NRC of the proposed change in accordance with Section 3.2 of the Environmental Protection Plan.

## 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 events 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)

The frequency for inspecting the Emergency Service Water (ESW) intake structure was changed to once every 3 years during 2003. The change was based on an engineering evaluation (Engineering Change 49074) of HNP's Generic Letter 89-13 Testing and Inspection Program. Therefore, no formal inspections of the ESW intake bays or the Cooling Tower Makeup (CTMU) bay occurred during 2003. However, in December 2003, a diver inspected the "B" ESW pump bay and indicated there was no significant buildup of clams, or other debris, in the pump bay.

No clogging events of HNP cooling water systems occurred during 2003 as a result of Asiatic clam infestation.

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

On November 12, 2003 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 that observed in 2002. No additional habitat colonized by either species was observed.

The shoreline of the HNP auxiliary cooling reservoir intake canal was surveyed 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 2003.

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 Hollemans 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 2003.

## 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 an NPDES permit (NC0039586) for the HNP which became effective May 1, 2002, and 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, 2003, and valid through December 31, 2003. In addition, during 2003 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.

#### 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 2003 as discussed below.

On June 26, 2003, HNP was informed by the contract laboratory that zinc concentrations in the cooling tower blowdown (NPDES Outfall 001) exceeded the NPDES permit requirements on June 16, 2003 and June 23, 2003. The results for the June 16, 2003 (2.06 mg/L) and the June 23, 2003 (1.04 mg/L) samples were greater than the limit in the NPDES permit of 1.0 mg/L for zinc. The NCDENR was notified of the exceedance via telephone on June 26, 2003, and via written report on July 1, 2003. In a follow-up operational sample on June 26, 2003, the zinc concentration in the cooling tower basin was 0.65 mg/L. The cause of the elevated zinc level in the discharge was an increased amount of zinc chloride added to the system as a result of an elevated discharge volume from Outfall 001 when the HNP tripped offline on June 14, 2003. The metering system from the zinc chloride tank responded to the increased discharge. Higher concentrations of zinc were present when the discharge returned to normal operating status. On June 26, 2003, the tank's metering system was responding to normal operational discharge amounts. A Shift Order was issued as an immediate corrective action,

instructing plant personnel to manually reduce the amount of zinc chloride added to the system upon a plant trip.

### 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 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 (Sect. 4.1.1) occurred during 2003.

### 6.2 Changes in Station Design

During 2003 construction of the Apex US 1 230 kV Substation on HNP property to serve a new transmission line was completed. This new substation was energized on June 1, 2003. The construction was performed under approved plans and permits issued by the state of North Carolina and local regulatory agencies. There was no significant environmental impact as a result of this project.

The HNP Sanitary Waste Landfill (Permit #92-10) was closed in December 2003 in accordance with NCDENR approved plans and schedule. No new waste material has been added to the landfill since December 31, 2002. As part of the landfill closure process a study was conducted to evaluate the existing groundwater monitoring well network (five wells) located around the landfill. The abandonment of two existing wells and the addition of two new wells resulted. Groundwater monitoring of the five wells around the landfill will continue for a minimum of five years post-closure (or as directed by the NCDENR).

In December 2003 the HNP requested authorization from the NCDWQ to construct improvements to its wastewater treatment facility. Currently, there are two extended aeration package wastewater treatment plants at the HNP. Each is

rated with a hydraulic capacity of 25,000 gallons per day (gpd). Both treatment plants are deteriorating and current wastewater influent flow to the facility averages only 6,500 gpd. The HNP proposed to reduce the capacity of the treatment facilities in order to achieve higher effluent quality and improved system reliability by installing one 15,000 gpd treatment facility to replace the existing two. The existing treatment facilities will be refurbished and their tanks used for storage. In addition, the existing lab/office building will be demolished and replaced with a new one. 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. Construction is planned to begin in 2004 after authorization is received.

## 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 June 22, 2003, a minor diesel fuel oil leak occurred from temporary lighting generator equipment outside the ESW pump structure fenced area. A 3 ft. by 4.5 ft. section of ground under the generator absorbed the leaking fuel oil. The quantity of the leak was determined to be approximately one gallon. Clean up of the effected ground area was completed. None of the fuel oil entered any bodies of water. The fuel oil spill was determined to be reportable to the state of North Carolina under General Statute 143-215.85 because the spill occurred within 100 ft. of the intake canal (surface water body).