



APR 27 2011

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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/RENEWED LICENSE NO. NPF-63  
ANNUAL ENVIRONMENTAL (NONRADIOLOGICAL) OPERATING REPORT

Ladies and Gentlemen:

In accordance with Section 5.4.1 of the Environmental Protection Plan issued as Appendix B to the Renewed 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 (Nonradiological) Operating Report for 2010.

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. J. D. Austin (NRC Senior Resident Inspector, HNP)  
Mr. V. M. McCree (NRC Regional Administrator, Region II)  
Mrs. B. L. Mozafari (NRC Project Manager, HNP)

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Harris Nuclear Plant  
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**Carolina Power & Light Company,  
doing business as Progress Energy Carolinas, Inc.**

**Shearon Harris Nuclear Power Plant  
Unit 1**

**ANNUAL ENVIRONMENTAL  
(NONRADIOLOGICAL)  
OPERATING REPORT**

**January 1, 2010 through December 31, 2010**

**Renewed Facility Operating License No. NPF-63  
Appendix B**

**Docket No. 50-400**

## 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. The NRC issued a Renewed Facility Operating License (No. NPF-63) on December 17, 2008, extending operations until October 24, 2046. Appendix B (the Environmental Protection Plan (EPP) [nonradiological]) of the renewed operating 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 through December 31, 2009.

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

## 2.0 PLANT CONSISTENCY REQUIREMENTS [EPP Section 3.0]

### 2.1 Plant Design and Operation

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

As required by National Pollutant Discharge Elimination System (NPDES) permit NC0039586, monitoring data were submitted to the North Carolina Division of Water Quality (NCDWQ) via monthly discharge monitoring reports and separate correspondence as warranted.

On September 16, 2010, the NCDWQ issued Pump and Haul Permit WQ00304993 to allow transfer of sewage from the HNP Sewage Treatment Plant (Outfall 002) to the Harris Energy & Environmental Sewage Plant (Outfall 007) during Refueling Outage 16. Reporting and termination requirements of the permit were met.

## 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 are 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)

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. Inspections of ESW intake bays occurred on July 31, 2010, and November 14, 2010. These inspections indicated a stable Asiatic clam population.

No clogging events of HNP cooling water systems occurred during 2010 as a result of Asiatic clam infestation.

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

##### **Main Reservoir**

*Hydrilla* was found throughout the main reservoir during the 2010 survey. Biomass was greater than during 2009 as hydrilla began re-colonizing areas previously exposed by drought conditions during 2009. Hydrilla was abundant in the shallow bay adjacent to the mouth of the main intake canal. However, hydrilla was only present along the fringes of the intake canal itself. The abundance of creeping water primrose, *Ludwigia* spp., a shallow-water emergent, remained less compared to previous years primarily due to the rapid re-colonization of the shallow water areas by hydrilla.

No new species of aquatic plants were observed in the main reservoir.

##### **Auxiliary Reservoir**

Submerged aquatic vegetation was discovered in the auxiliary reservoir during the 2010 survey. The dominant vegetation was *Hydrilla*. Also present was bladderwort, *Utricularia* spp., southern pond weed, *Potamogeton* spp., slender spike rush, *Eleocharis baldwinii*, and some creeping water primrose. Of these species, the hydrilla, southern pond weed, and bladderwort are of potential concern regarding intake fouling. Biomass and stem height is much less than that currently found in Harris Lake. The hydrilla remains close to the bottom and not near the water surface. This indicates that the vegetation most likely became established during the 2010 summer months and has not had the benefit of a full growing season.

The heaviest infestation of hydrilla was found in the southern-most arm of the reservoir that intersects with United States Highway 1 (US 1). Hydrilla was also found in the northern-most arm that intersects with US 1 and in the corner near the Auxiliary Reservoir's dam across from the boat ramp. The distribution was patchy at these latter two locations.

No hydrilla, bladderwort, or southern pond weed was observed in the auxiliary intake canal or along the shoreline adjacent to the auxiliary intake canal.

The dominant vegetation observed along the auxiliary intake canal was *Eleocharis baldwinii*, a small grass-like submerged plant that poses no operational concern. Creeping water primrose (*Ludwigia spp.*) was also present but in small amounts.

Progress Energy has submitted a permit application to the North Carolina Wildlife Resources Commission for restocking of triploid grass carp (*Ctenopharyngodon idella*) in the auxiliary reservoir during 2011 for continued vegetation control.

No impacts to HNP operations from aquatic vegetation occurred in 2010.

### **3.2 Combined Construction and Operating License Application Evaluations**

Progress Energy Carolinas, Inc. continues to perform engineering and natural resource evaluations related to potential future development of two new nuclear power generation units at the HNP site. The NRC is currently reviewing the Combined Construction and Operating License (COL) application submitted by Progress Energy on February 19, 2008.

In 2010 several field studies related to the COL were performed. The US Army Corps of Engineers (USACE) issued a final Jurisdictional Determination which included the wetland and stream impacts associated with the proposed lake level rise expected to support the addition of new units at Harris. In-stream Flow studies, including fish, benthic and mussel surveys, continued in Buckhorn Creek and a section of the Cape Fear River to evaluate habitats and potential impacts from changes in flow. These studies should conclude during 2011. The natural resource studies are being coordinated with the USACE, North Carolina Department of Environment and Natural Resources (NCDENR), US Fish & Wildlife Service, and North Carolina Wildlife Resources Commission.

No significant environmental impacts have been caused or identified by these activities.

### **3.3 New Firing Range**

An Erosion Control Plan for Land Clearing at the Harris Plant was submitted to support the construction of a new firing range for security guard training. These activities were coordinated with the NCDENR. Land clearing and construction activities were completed in 2010.

No significant environmental impacts have been caused or identified by these activities.

### **3.4 New Generator Rewind Building**

An Erosion Control Plan for Land Clearing at the Harris Plant was submitted to support the construction of a new building to rewind an electrical generator. These activities were coordinated with the NCDENR. Land clearing and construction activities were completed in 2010.

No significant environmental impacts have been caused or identified by these activities.

### **3.5 Cooling Tower Blowdown Line Replacement**

An Erosion Control Plan for Land Clearing at the Harris Plant was submitted to support the construction of approximately 6000 feet of the Cooling Tower Blowdown Line used for NPDES Discharges. These activities were coordinated with the NCDENR. Land clearing and all construction activities were completed in 2010.

No significant environmental impacts have been caused or identified by these activities.

### **3.6 Roadway Security Project**

An Erosion Control Plan for Land Clearing at the Harris Plant was submitted to support roadway construction and security upgrades. These activities were coordinated with the NCDENR. Land clearing and construction activities were completed in 2010.

No significant environmental impacts have been caused or identified by these activities.

## **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 renewed the National Pollutant Discharge Elimination System (NPDES) permit (NC0039586) for the HNP on March 1, 2007. The permit includes the Harris Energy & Environmental Center (HE&EC) sewage treatment plant discharge as an outfall (007).

The permit requires that a state-certified laboratory perform the analyses on all non-field parameters analyzed for effluent samples. In accordance with this requirement, the HNP Environmental & Chemistry Laboratory was certified by the North Carolina Division of Water Quality (NCDWQ) as a Wastewater Laboratory, effective January 1, 2010, and valid through December 31, 2010. In addition, during 2010 Progress Energy contracted with two NCDWQ-certified private laboratories, Environmental Conservation Laboratories, Inc. (ENCO) 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.

#### **4.1.2 NPDES Inspections**

On March 25, 2010, the NCDWQ conducted an NPDES complaint investigation inspection at the Harris Energy & Environmental Center sewage treatment plant (Outfall 007). The NCDWQ subsequently issued an investigation report dated April 1, 2010. Progress Energy responded to the investigation report by letter dated June 2, 2010.

#### **4.1.3 Other Inspections**

On October 29, 2010, NCDENR personnel inspected the erosion control areas that were currently active. No deficiencies were identified as a result of these inspections.

#### **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.

##### **6.2 Changes in Station Design and Operation**

There were no changes in station design or operation and there were no tests or experiments performed which involved a potentially significant unreviewed environmental question during 2010.

### **6.3 Non-routine Reports**

There were no non-routine reports submitted in accordance with EPP Section 5.4.2 during 2010.

### **6.4 Other Reporting Requirements**

There were no other EPP reportable events during 2010.