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SUBJECT: "Annual Environ (Non-Radiological) Operating Rept." W/970428
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Carolina Power & Light Company
PO Box 165
New Hill NC 27562

William R. Robinson
Vice President
Harris Nuclear Plant

APR 28 1997

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

Serial: HNP-97-089

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

Dear Sir or Madam:

In accordance with Section 5.4.1 of the Environmental Protection Plan issued as Appendix B of the Operating License (NPF-63) for the Shearon Harris Nuclear Power Plant, Carolina Power & Light Company provides the enclosed Annual Environmental (Non-Radiological) Operating Report for 1996.

If you have questions or need additional information regarding this report, please contact Ms. D. B. Alexander at (919) 362-3190.

Sincerely,

MV

c: Mr. J. B. Brady (HNP Senior NRC Resident)
Mr. L. A. Reyes (NRC Regional Administrator, Region II)
Mr. N. B. Le (NRC - NRR Project Manager)

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SHEARON HARRIS NUCLEAR POWER PLANT

UNIT 1

**ANNUAL ENVIRONMENTAL
(NONRADIOLOGICAL)
OPERATING REPORT**

APPENDIX B

for

January 1- December 31, 1996

CAROLINA POWER & LIGHT COMPANY

Docket No. 50-400

Facility Operating License No. NPF-63

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 (SHNPP), 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, 1996.

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

All required NPDES monitoring data were submitted to the North Carolina Division of Water Quality (NCDWQ) *via* monthly discharge monitoring reports and separate correspondence as warranted.

3.0 UNUSUAL OR IMPORTANT ENVIRONMENTAL EVENTS [EPP Section 4.1]

3.1 Natural Disasters

A fish kill was observed by Harris Plant personnel during the morning of September 16, 1996. The fish kill was confined to an isolated area, approximately 25-30 acres, located in the headwaters of the Thomas Creek arm of Harris Lake and upstream of the Harris Nuclear Plant construction access road causeway. This headwater area of the lake was connected to a downstream area of the Thomas Creek arm by a submerged culvert. The culvert had previously collapsed, trapping fish and impounding additional water in the affected area.

CP&L biologists presumed several naturally occurring events, including introduction of partially decayed terrestrial vegetation and the resuspension of creek and lake sediments, were responsible for the depletion of dissolved oxygen in the affected area. The addition of vegetation and the resuspension of sediments were the result of flooding due to heavy precipitation associated with hurricane Fran (September 5 and 6, 1996). Low dissolved oxygen concentrations [0.2 to 0.4 parts per million (ppm)] are presumed to be the primary factor responsible for the fish mortality. The NCDWQ and the Nuclear Regulatory Commission (NRC)



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were informed of the fish kill.

Harris Plant personnel removed and buried the larger fish. Surface water dissolved oxygen concentrations recovered from 0.2 parts per million on September 17, 1996, to 6.2 ppm on February 14, 1997.

3.2 Power Plant Related Events

No occurrence of an unusual or important environmental event that would indicate or could result in a significant environmental impact causally related to plant operation occurred during the reporting period. No releases or exceedances of permit conditions caused any significant environmental impact.

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 SHNPP on September 1, 1996, that remains in effect until March 31, 2001. This permit included the CP&L Harris Energy & Environmental Center (HE&EC) sewage treatment plant discharge as an outfall (007). This permit requires that the laboratory analyses performed on all effluent samples be performed by a state-certified laboratory. In accordance with this requirement, the SHNPP Environmental & Chemistry Laboratory was certified by the NCDEM as a Wastewater Laboratory, effective January 1, 1995, and is valid through December 31, 1997. The Toxicity Testing Laboratory and the Chemistry Laboratory at the CP&L HE&EC were also certified by the NCDEM for toxicity testing and wastewater analyses, respectively, to support the SHNPP operations. The HE&EC Chemistry Laboratory certification was renewed on January 1, 1995, and is valid through December 31, 1997. The Toxicity Testing Laboratory was certified to perform testing under two consecutive Biological Toxicity Laboratory certifications from November 1, 1995, through November 1, 1996, and from November 1, 1996, through November 1, 1997. In addition, during 1996 the CP&L Chemistry Laboratory at the Harris Energy & Environmental Center and the Toxicity Testing Laboratory contracted with private laboratories, Industrial and Environmental Analysts and Hydrologic Laboratories, Inc., respectively, to perform some of the analyses.

4.1.1 Effluent Monitoring

Routine effluent monitoring was conducted and reported to the NCDWQ as required by the NPDES permit. No NPDES noncompliances occurred during 1996 while the reportable events were:

- A. December 16, 1996, fecal coliform sample (outfall 002) not



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analyzed

Industrial and Environmental Analysts, Inc., the commercial contract laboratory utilized by the Harris Nuclear Plant, did not analyze the December 16, 1996, fecal coliform sample (outfall 002) in accordance with the requirements as stated in 40 CFR Part 136. The required holding time elapsed prior to sample analysis. Consequently, the December 16, 1996, fecal coliform sample analysis was reported as an estimated value. Pursuant to a January 14, 1997, telephone conversation between Mr. Steve Mitchell of the Raleigh Regional Office of NCDWQ, and Ms. Joanie Cooke of CP&L, the facility indicated compliant conditions for the reporting period.

B. December 30 and 31, 1996, samples for biochemical oxygen demand suspect due to high blank and seed results.

Industrial and Environmental Analysts, Inc., also identified the December 30 and 31, 1996, effluent samples for biochemical oxygen demand for outfall 002 to be suspect due to high blank and seed results. The contract laboratory discovered that the 0.2-micron filter used during the analytical procedure contained activity which caused an elevated result on the blank sample and contaminated the dilution water. However, the dilution water was not utilized on the effluent samples. Consequently the effluent sample results should not have been impacted. The effluent sample results were identified as suspect due to the deviation on the blank sample.

4.1.2 Aquatic Biological Monitoring

Biological Assessment Unit personnel conducted the scheduled semiannual monitoring for Asiatic clams (*Corbicula*) in the HNP Emergency Service Water System (e.g., intake structures and the Fire Protection System) on April 29, 1996.

No Asiatic clams were collected from the Main Reservoir Intake Structure, Service Water System Bays, or Cooling Water Makeup Bays. However, the equivalent of 2 and 240 deceased clams, represented as shells, were collected from Cooling Water Makeup Bays B and C, respectively. The clam shells may indicate that clams are accumulating in these areas. Asiatic clams were collected from the Emergency Service Water System Bays 6 and 8. Actual numbers collected were three clams at Bay 6 and six clams at Bay 8. Estimated densities at these locations were 129 and 258 clams per square meter, respectively. All clams were estimated to be approximately 2 to 4 years in age. No clams were collected in the Service Building Fire Protection System.

Sampling during the fall for Asiatic clams was conducted on October 30,



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1996. Nine live clams were collected from the Main Reservoir Intake Structure (MRIS) Service Water System Bay 1A-SA (estimated density 388 clams per square meter) and one live clam (estimated density 43 clams per square meter) was collected from the MRIS Cooling Water Makeup Bay 1X. Dead clams, as represented by shells, were collected from MRIS Cooling Water Makeup Bay 1 & 2X and Bay 1X at estimated densities of 129 and 8318 clams per square meter, respectively. No live or dead clams were found in Bay 8. All clams were estimated to be approximately 1 to 4 years in age. No clams were collected in the Service Building Fire Protection System.

Asiatic clams caused no biofouling of plant water systems during 1996.

During 1996 monitoring for zebra mussels *Dreissena polymorpha* and quagga mussels *D. bugensis* was conducted in areas of likely infestation, i.e., at Hollemans Crossroads boat ramp and water quality station marker buoys at Transects E and P. No zebra or quagga mussels were found during 1996.

Since 1988 hydrilla *Hydrilla verticillata*, a nonnative aquatic weed, has been established in Harris Lake. A visual survey made during November 1996, reconfirmed that hydrilla was established in water less than 3-meters deep in all major arms of the reservoir. The total areal coverage was estimated to be approximately 475 hectare. Compared to previous years hydrilla did not appear to be as dense or to have reached the water surface in many areas of the lake. This slightly diminished growth may be attributable to below-normal temperatures during the winter of 1995-96.

A visual survey for hydrilla was also conducted in the auxiliary reservoir during December 1996. Although 800 grass carp *Ctenopharyngodon idella* were stocked in October 1994 and again in 1996 to control hydrilla, it continued to spread in the auxiliary reservoir. Most of the shoreline in the bay receiving discharges from the SHNPP is colonized by hydrilla to a depth of 3-meters. It appears that moderate hydrilla control has occurred in the bay nearest the auxiliary reservoir intake canal. This bay was stocked with 800 grass carp during 1994 and 400 during 1996. It is possible that the grass carp stocked during 1994 did not control hydrilla in the discharge receiving bay because they did not migrate into that area. Both bays are connected by a narrow channel.

Approximately 400 grass carp were stocked in the discharge receiving bay during 1996. Similar to observations made in the main lake, the growth of hydrilla appeared slightly diminished during the summer and fall of 1996, possibly due to below-normal temperatures during the winter of 1995-96. Monitoring of the effectiveness of the grass carp will determine necessity for future stocking.

No impacts to SHNPP operations from hydrilla have occurred nor are they expected because of the low velocity of water drawn from the main lake into the cooling tower makeup water intake structure. Another factor, which limits potential impacts from hydrilla, is limited available habitat in the intake canal for hydrilla colonization. Available habitat would include all shoreline areas contained in the littoral zone. These areas are relatively narrow due to the steep-sided banks of the intake canal and are presently colonized by various forms of emergent aquatic vegetation presumed to out-compete hydrilla.

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 that audit are summarized in the attached letter.

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

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.

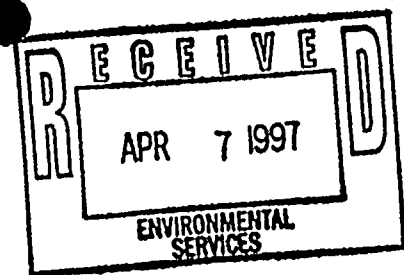
6.3 Nonroutine Reports

There were no nonroutine reports submitted in accordance with EPP Section 5.4.2. There were no NPDES noncompliances identified during the reporting period.



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CP&L



April 1, 1997

Mr. Benjamin C. White
Manager - Environmental Services
Operations and Environmental Support Department

Dear Mr. White:

A review of the Harris Nuclear Plant Unit 1 (HNP) Annual Environmental (Nonradiological) Operating Report was recently completed. The report is issued annually to comply with the reporting requirements of the U. S. Nuclear Regulatory Commission (NRC) established in Appendix B, Environmental Protection Plan (Nonradiological), of the HNP Facility Operating License No. NPF-63. The objective of the review was to assess the accuracy and completeness of the report for the period January 1, 1996, through December 31, 1996.

The scope of our work was limited to a review of the controls, procedures, and supporting documents related to the report and interviews with HNP and Environmental Services personnel. Based on the audit procedures performed, the Annual Environmental (Nonradiological) Operating Report appears to be complete, accurate, and in compliance with NRC reporting requirements.

We appreciate the excellent cooperation received from Environmental Services and HNP personnel. If you have any questions concerning this report, please do not hesitate to contact us.

Sincerely,

A handwritten signature in dark ink, appearing to read "John W. Griffith".

John W. Griffith
Manager - Financial and Environmental Audits

JWG/gtv

c: Mr. W. S. Orser
Mr. W. R. Robinson
Mr. C. W. Rose
Mr. T. D. Walt

Audit Team
Mr. Gil T. Vinzani

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