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APR 2 7 1998

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

Serial: HNP-98-059

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 1997.

If you have questions or need additional information regarding this report, please contact Mr. J. H. Eads at (919) 362-2646.

Sincerely,

W R Robinson

MV

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

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Cool

bc: Mr. B. H. Clark
Ms. W. C. Langston (PE&RAS File)
Mr. W. S. Orser
Mr. R. F. Saunders
Mr. W. G. Wendland (American Nuclear Insurers)
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SHEARON HARRIS NUCLEAR POWER PLANT

UNIT 1

ANNUAL ENVIRONMENTAL (NONRADIOLOGICAL) OPERATING REPORT

APPENDIX B

for

January 1- December 31, 1997

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, 1997.

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]

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 fluminae)*; the potential existence of zebra mussels (*Dreissena polymorpha*) and quagga mussels (*D. bugensis)*; the presence of troublesome aquatic vegetation (hydrilla, *Hydrilla verticillata*); the recovery following a fish kill in Thomas Creek; and an evaluation of angler success and harvest of the Harris Lake fishery were considered important events worthy of periodic aquatic biological monitoring.

3.1 Aquatic Biological Monitoring

A. Scheduled semiannual monitoring for Asiatic clams (*Corbicula flumina*) in the HNP Emergency Service Water System (e.g., intake structures and the Fire Protection System).

Biological Assessment Unit personnel conducted the scheduled semiannual monitoring for Asiatic clams (*Corbicula flumina*) in the HNP Emergency Service

Water (ESW) System (e.g., intake structures and the Fire Protection System) on April 16, 1997 (intake structure) and May 5, 1997 (fire protection system).

Two live clams were collected from the ESW Main Reservoir Intake Structure (MRIS), Makeup Bay 1X. The estimated densities are 86 clams/m^2. No other clams or biofouling organisms were collected from the MRIS. Asiatic clams were collected from the MRIS Bays 6 and 8. Actual numbers collected were 19 clams at Bay 6 and 37 clams at Bay 8. Estimated densities at these locations were 817 and 1591 clams/m^2, respectively. Dead clams in MRIS were estimated at 43 clams/m^2. All clams were estimated to be approximately 1 to 4 years in age. No clams were collected in the Service Building fire protection system. The number of dead clams was down significantly from the inspection conducted on October 30, 1996.

A further inspection of the MRIS and the cooling tower basin was conducted on April 23, 1997, during RF07. The pump areas of the 1 & 2X bay for the Cooling Water Makeup and the cooling tower basin were dewatered at this time. The visual inspection showed no Asiatic clams or any other biofouling organisms present in either area.

Sampling during the fall for Asiatic clams at the intake structures was conducted on October 20, 1997, and the fire protection system was sampled on November 5, 1997. Results from these samples indicate no live clams were collected from the ESW MRIS or Cooling Water Makeup Bays. No other biofouling organisms were collected from the ESW System Bays 1 and 6. Estimated densities at these locations were 258 and 43 clams/m^2, respectively. 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 1997 or in previous years.

B. Monitoring for zebra mussels *Dreissena polymorpha* and quagga mussels *D. bugensis* conducted in areas of likely infestation during 1997.

During 1997 visual inspections for zebra mussels, *Dreissena polymorpha*, and quagga mussels, *D. bugensis*, were made 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 1997 or in previous years.

C. Monitoring for hydrilla (*Hydrilla verticillata*), a nonnative aquatic we during 1997.

Since 1988, hydrilla (*Hydrilla verticillata*) a nonnative aquatic weed, has been established in Harris Lake. A visual survey of the Harris Plant main reservoir intake canal was conducted during November 1997. This survey reconfirmed that hydrilla was established in the arm of the lake adjacent the canal but not in the

Harris Plant main reservoir intake canal.

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 which may limit areas of colonization available to hydrilla.

Personnel of the Biological Assessment Unit conducted an annual aquatic vegetation survey of the Harris Auxiliary Reservoir on October 20, 1997. The survey involved a visual inspection of a majority of the shoreline areas of the reservoir and the shores of the Harris Nuclear Plant auxiliary reservoir intake canal. Unlike during 1996 when most shoreline areas of the discharge side of the reservoir had a ribbon of hydrilla extending to the water surface, no area of the auxiliary reservoir or intake canal shoreline had visible stands of Hydrilla reaching the surface. Shallow water areas in most of the auxiliary reservoir had either widely scattered patches of various submerged aquatic weeds or were barren of vegetation. These small isolated patches of vegetation do not represent any potential for biofouling Harris Nuclear Plant Emergency Service Water intake screens or pumps. The stocking of 800 grass carp, *Ctenopharyngodon idella*, during October 1994, 1996, and 1997 appears to have resulted in the effective control of hydrilla in the Harris Auxiliary Reservoir and intake canal. This control of aquatic vegetation is expected to last for the next several years.

D. Assessment of Thomas Creek fishery recovery following a fish kill resulting from the effects of Hurricane Fran.

Personnel of the Biological Assessment Unit conducted an assessment of the Thomas Creek fishery on October 20, 1997. This area had experienced a fish kill resulting from the effects of Hurricane Fran during September 1996. The assessment involved shallow water sampling using Smith-Root equipped Wisconsin-design boat-mounted electrofishing. During the 0.64-hour sampling effort 194 fish representing 8 fish species were collected. Bluegill were the numerically dominant fish species representing 55% of the total number of fish collected. Other game species collected included black crappie (24%), redear sunfish (7%), and largemouth bass (5%).

The total fish number and the number of bluegill collected compare favorably with the numbers of fish collected from a downstream area of Thomas Creek during 1995. The number of redear sunfish was less and the number of black

crappie was greater during 1997 compared to the corresponding numbers during 1995.

The results of our 1997 Thomas Creek survey indicate the fishery has nearly recovered from the results of the Hurricane Fran-induced fish kill.

E. Access-point creel survey of Harris Lake fishery.

Beginning July 1, 1997, through June 30, 1998, the North Carolina Wildlife Resources Commission (NCWRC) is conducting an access-point creel survey on Harris Lake. The purpose of this survey is to determine angler success and harvest of the Harris Lake fishery. A report summarizing the results of the survey is expected to be issued by NCWRC during the first quarter of 1999. A portion of the funds for the survey were contributed by the Harris Nuclear Plant.

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 includes 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 non-field parameters determined on 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 effective November 1, 1996, through November 1, 1997, and November 1, 1997, through November 1, 1998. In addition, during 1997 the CP&L Chemistry Laboratory at the Harris Energy & Environmental Center contracted with NC-certified private laboratories, Aqua Tech Environmental Laboratories and Industrial and Environmental Analysts to perform most of the analyses.

4.1.1 Effluent Monitoring

Routine effluent monitoring was conducted and reported to the NCDWQ as required by the NPDES permit. The reportable events were:

A. January 2, 1997, Biochemical Oxygen Demand results (outfall 002 and 007) suspect due to high blank and seed results.

Industrial and Environmental Analyst, Inc., the commercial laboratory utilized by the Harris Nuclear Plant, identified the Biochemical Oxygen Demand results on the January 2, 1997, samples for outfall 002 and 007 as suspect due to high blank and seed results. The contract lab discovered that the 0.2 micron filter used during the analytical procedure contained activity that caused an elevated result on the blank and contaminated the dilution water. However, the dilution water was not utilized on the effluent samples. Consequently the sample results should not have been impacted. The results were identified as suspect due to the deviation on the blank.

B. January 24, 1997, fecal coliform sample (outfall 007) not analyzed in accordance with the requirements as stated in 40 CFR Part 136.

Industrial and Environmental Analyst, Inc., the commercial laboratory utilized by the Harris Nuclear Plant, did not analyze the January 24, 1997, fecal coliform sample (outfall 007) in accordance with the requirements as stated in 40 CFR Part 136. The holding time elapsed prior to sample analysis. Consequently, the January 24, 1997, fecal coliform sample result was reported as an estimated value. Pursuant to the January 14, 1997, telephone conversation between Mr. Steve Mitchell, of the Raleigh Regional Office of NCDWQ and Ms. Joanie Cooke of CP&L, Harris Nuclear Plant indicated compliant conditions for the reporting period.

C. January 24, 1997, Total Suspended Solids (TSS) reported at 57 mg/L. at outfall 007.

Industrial and Environmental Analyst, Inc., the commercial laboratory utilized by the Harris Nuclear Plant, reported that the value for the January 24, 1997, total suspended solids (TSS) sample obtained at outfall 007 was 57 mg/L. However, all other parameters that were analyzed on the same sample resulted in extremely low values. Consequently, the contract lab re-ran TSS and obtained a lower value (44 mg/L). Based on the significant difference in the two values, the results were considered suspect. Pursuant to the February 13, 1997, telephone conversation between Mr. Steve Mitchell of the Raleigh Regional Office of NCDWQ and Ms. Joanie Cooke of CP&L, the facility omitted the suspect results and indicated compliant conditions for the reporting period.

D. February 6, 1997, Total Suspended Solids (TSS) not analyzed in accordance with the requirements as stated in 40 CFR Part 136.

Industrial and Environmental Analyst, Inc., the commercial laboratory

utilized by the Harris Nuclear Plant, did not analyze the February 6, 1997, total suspended solids (TSS sample, outfall 007) in accordance with the requirements as stated in 40CFR Part 136. The holding time elapsed prior to sample analysis. Consequently, the February 6, 1997, TSS sample result was reported as an estimated value.

E. <u>February 6, 1997, effluent toxicity sample for the Outfall 007 at the Harris Energy and Environmental Center did not meet the NPDES permit specified limit.</u>

The February 6, 1997, effluent toxicity sample for the Outfall 007 at the Harris Energy and Environmental Center did not meet the NPDES permit specified limit. Consequently, toxicity testing at Outfall 007 was increased to the permit-required monthly interval. The February 11, 1997, follow-up effluent toxicity sample for Outfall 007 produced compliant results. Therefore, in accordance with Part 1 A. 3. of the referenced NPDES permit, the facility resumed quarterly testing at Outfall 007. Operational problems with the declorination system at the treatment plant resulted in an elevated chlorine content that caused the initial test failure at Outfall 007. A self-assessment of the treatment facility and operating methodologies was conducted. Based on the assessment findings and recommendations, the following items were recommended and implemented; (1) the dechlorination dry chemical feeder was modified to ensure continuous feed operation, (2) a mobile aeration was added to the system to ensure proper chemical mixing, (3) a new sand filter will be obtained in 1998, and (4) the use of a declorination agent containing 80% sodium sulfite active ingredient replacing the previous dechlorination agent containing 35% sodium sulfite active ingredient.

F. <u>Harris Nuclear Plant personnel did not obtain a sample for Total Suspended Solids (TSS) and Oil & Grease at the time of release for Outfall 005.</u>

The sample results for Outfall 005 were from a representative sample taken subsequent to the actual release. Harris Nuclear Plant personnel did not obtain a sample for TSS and Oil & Grease at the time of release. The sampling oversight was discovered after a review of the tank releases. Subsequent to the discovery, plant personnel found that a small portion of the wastewater collected for the release remained in the holding tank; and that no additional wastewater had been added to the remaining portion in the tank. This remaining portion was sampled for TSS and Oil & Grease. Due to the fact that a portion of the wastewater from the release remained in the tank and no additions to the tank had occurred, the results of this sample were reported as representative of the release. Pursuant to the April 21, 1997, telephone conversation between Ms. Judy Garrett of the Raleigh Office of NCDWQ and Ms. Joanie Cooke of CP&L, the facility

indicated compliant conditions for the reporting period.

G. May 8, 1997, Fecal Coliform sample (Outfall 007) result invalid due to negative biological growth during the positive control process and improper control of water bath temperature.

Industrial and Environmental Analyst, Inc. (IEA), the commercial contract laboratory utilized by the Harris Nuclear Plant, identified that the Fecal Coliform result on the May 8, 1997, sample for Outfall 007 was invalid due to a QC method deviation. The invalid result was due to a negative biological growth during the positive control process and improper control of water bath temperature. The analyst at IEA utilized an incorrect culture for the positive control. In addition, the water bath thermometer was out of the specified range for Fecal Coliform analysis. Based on the compliant conditions before and after the subject sampling date the facility was believed to have been compliant on May 8, 1997. To help ensure that laboratory errors did not continue, CP&L implemented the use of a different commercial laboratory, Aqua Tech Environmental Laboratories, Inc.

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.

6.0 PLANT REPORTING REQUIREMENTS [EPP Section 5.4]

6.1 EPP Noncompliances

There was one EPP noncompliance identified during the reporting period. This noncompliance resulted when the February 6, 1997, effluent toxicity sample for the Outfall 007 at the Harris Energy and Environmental Center did not meet the NPDES permit specified limit. The February 11, 1997, follow-up effluent toxicity sample for Outfall 007 produced compliant results. A self-assessment of the treatment facility and operating methodologies resulted in the recommendation and implementation of the following items; (1) the dechlorination dry chemical feeder was modified to ensure continuous feed

dechlorination dry chemical feeder was modified to ensure continuous feed operation, (2) a mobile aeration was added to the system to ensure proper chemical mixing.

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. The February 6, 1997, effluent toxicity sample for the Outfall 007 at the Harris Energy and Environmental Center which did not meet the NPDES permit specified limit was one NPDES noncompliance identified during the reporting period.