

December 24, 1986

Docket No. 50-400

DISTRIBUTION

Mr. E. E. Utley, Senior Executive Vice President
Power Supply and Engineering and Construction
Carolina Power and Light Company
Post Office Box 1551
Raleigh, North Carolina 27602

Docket File B. Buckley
NRC PDR J. Guillen
Local PDR D. Miller
PAD#2 Rdg ACRS (10)
T. Novak E. Rossi
OGC-Bethesda Gray File
E. Jordan
B. Grimes
J. Partlow
N. Thompson, DHFT

Dear Mr. Utley:

Subject: Shearon Harris Nuclear Power Plant - Transmittal of a Preliminary
Draft of the Proposed Full Power License

Enclosed for your review and comment is a preliminary draft of the proposed full power license for the Shearon Harris Nuclear Power Plant (without Attachments 1 and 2). A principal objective of this transmittal is to provide for timely identification of any clarification needed regarding the conditions stated in this license.

Please provide your comments by January 2, 1987. If you require any clarification of this matter, please contact the Project Manager, Bart Buckley at (301) 492-9799.

The reporting and/or recordkeeping requirements of this letter affect fewer than 10 respondents; therefore OMB clearance is not required under P.L. 96-511.

Sincerely,

/s/

Lester S. Rubenstein, Director
PWR Project Directorate #2
Division of PWR Licensing-A
Office of Nuclear Reactor Regulation

Enclosure:
As stated

cc w/enclosure:
See next page

* Previous Concurrence

LA:PAD#2 ✱
DMiller
12/24/86

PE:PAD#2 ✱
JGuillen
12/24/86

PM:PAD#2 ✱
BBuckley:hc
12/24/86

PD:PAD#2 ✱
LRubenstein
12/24/86

8612310018 861224
PDR ADOCK 05000400
P PDR

Mr. E. E. Utley
Carolina Power & Light Company

Shearon Harris

cc:

Thomas A. Baxter, Esq.
Shaw, Pittman, Potts & Trowbridge
2300 N Street, NW
Washington, DC 20037

Mr. Travis Payne, Esq.
723 W. Johnson Street
Post Office Box 12643
Raleigh, North Carolina 27605

Mr. D. E. Hollar
Associate General Counsel
Carolina Power and Light Company
P.O. Box 1551
Raleigh, North Carolina 27602

Mr. Daniel F. Read
CHANGE
Post Office Box 2151
Raleigh, North Carolina 27602

Mr. H. A. Cole
Special Deputy Attorney General
State of North Carolina
Post Office Box 629
Raleigh, North Carolina 27602

Bradley W. Jones, Esq.
U.S. Nuclear Regulatory Comm.
Region II
101 Marietta Street
Atlanta, Georgia 30303

Resident Inspector/Harris NPS
c/o U.S. Nuclear Regulatory Commission
Route 1, Box 315B
New Hill, North Carolina 27562

Richard D. Wilson, M.D.
725 Hunter Street
Apex, North Carolina 27502

Mr. R. A. Watson
Vice President
Harris Nuclear Plant
P.O. Box 165
New Hill, North Carolina 27562

Regional Administrator, Region II
U.S. Nuclear Regulatory Commission
101 Marietta Street
Suite 2900
Atlanta, Georgia 30303

Mr. John Runkle, Executive Coordinator
Conservation Council of North Carolina
307 Granville Road
Chapel Hill, North Carolina 27514

Mr. Robert P. Gruber
Executive Director
Public Staff - NCUC
Post Office Box 29520
Raleigh, North Carolina 27626-0520

Mr. Wells Eddleman
812 Yancey Street
Durham, North Carolina 27701

Mr. J. L. Willis
Plant General Manager
Harris Nuclear Plant
P.O. Box 165
New Hill, North Carolina 27562

Dr. Linda Little
Governor's Waste Management Board
513 Albemarle Building
325 North Salisbury Street
Raleigh, North Carolina 27611

Mr. Dayne H. Brown, Chief
Radiation Protection Section
Division of Facility Services
N.C. Department of Human Resources
701 Barbour Drive
Raleigh, North Carolina 27603-2008



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

DRAFT

Docket No. 50-400

Mr. E. E. Utley, Senior Executive
Vice President
Power Supply and Engineering
and Construction
Carolina Power & Light Company
Post Office Box 1551
Raleigh, North Carolina 27602

Dear Mr. Utley:

Subject: Issuance of Facility Operating License No. NPF-63
Shearon Harris Nuclear Power Plant, Unit 1

The NRC has issued the enclosed Facility Operating License No. NPF-63 together with the Technical Specifications and Environmental Protection Plan for the Shearon Harris Nuclear Power Plant, Unit 1. The license authorizes operation of the Shearon Harris Nuclear Power Plant, Unit 1, at reactor power levels not in excess of 2775 megawatts thermal (100% of rated core power). Supplements 1 through 4 to the Safety Evaluation Report for Shearon Harris have also been previously issued. Please note that a Safety Evaluation is attached to the license as Attachment 2.

Also enclosed is a copy of a related notice, the original of which has been forwarded to the Office of the Federal Register for publication.

Three signed copies of Amendment No. 2 to Indemnity Agreement No. B-103, which covers the activities authorized under License No. NPF-63, are enclosed. Please sign all copies and return one copy to this office.

Sincerely,

Thomas M. Novak, Acting Director
Division of PWR Licensing-A
Office of Nuclear Reactor Regulation

Enclosures:

1. Facility Operating License No. NPF-63
2. Federal Register Notice
3. Amendment No. 2 to Indemnity Agreement No. B-103

cc w/enclosures:
See next page

DRAFT

Mr. E. E. Utley
Carolina Power & Light Company

Shearon Harris

cc:

Thomas A. Baxter, Esq.
Shaw, Pittman, Potts & Trowbridge
2300 N Street, NW
Washington, DC 20037

Mr. Travis Payne, Esq.
723 W. Johnson Street
Post Office Box 12643
Raleigh, North Carolina 27605

Mr. D. E. Hollar
Associate General Counsel
Carolina Power and Light Company
P.O. Box 1551
Raleigh, North Carolina 27602

Mr. Daniel F. Read
CHANGE
Post Office Box 2151
Raleigh, North Carolina 27602

Mr. H. A. Cole
Special Deputy Attorney General
State of North Carolina
Post Office Box 629
Raleigh, North Carolina 27602

Bradley W. Jones, Esq.
U.S. Nuclear Regulatory Comm.
Region II
101 Marietta Street
Atlanta, Georgia 30303

Resident Inspector/Harris NPS
c/o U.S. Nuclear Regulatory Commission
Route 1, Box 315B
New Hill, North Carolina 27562

Richard D. Wilson, M.D.
725 Hunter Street
Apex, North Carolina 27502

Mr. R. A. Watson
Vice President
Harris Nuclear Plant
P.O. Box 165
New Hill, North Carolina 27562

Regional Administrator, Region II
U.S. Nuclear Regulatory Commission
101 Marietta Street
Suite 2900
Atlanta, Georgia 30303

Mr. John Runkle, Executive Coordinator
Conservation Council of North Carolina
307 Granville Road
Chapel Hill, North Carolina 27514

Mr. Robert P. Gruber
Executive Director
Public Staff - NCIIC
Post Office Box 29520
Raleigh, North Carolina 27626-0520

Mr. Wells Eddleman
812 Yancey Street
Durham, North Carolina 27701

Mr. J. L. Willis
Plant General Manager
Harris Nuclear Plant
P.O. Box 165
New Hill, North Carolina 27562

Dr. Linda Little
Governor's Waste Management Board
513 Albemarle Building
325 North Salisbury Street
Raleigh, North Carolina 27611

Mr. Dayne H. Brown, Chief
Radiation Protection Section
Division of Facility Services
N.C. Department of Human Resources
701 Barbour Drive
Raleigh, North Carolina 27603-2008

DRAFT

Director
Eastern Environmental Radiation
Facility
U. S. Environmental Protection Agency
Post Office Box 3009
Montgomery, Alabama 36193

Director
Criteria and Standards (ANR-460)
Office of Radiation Programs
U.S. Environmental Protection Agency
Washington, D.C. 20460

Regional Radiation Representative
U.S. Environmental Protection Agency
Region IV
345 Courtland Street
Atlanta, Georgia 30308

Chairman
Board of County Commissioners
of Wake County
P.O. Box 550
Raleigh, North Carolina 27312

Chairman
Board of County Commissioners
of Chatham County
P.O. Box 111
Pittsboro, North Carolina 27312

Office of Intergovernmental Relations
116 West Jones Street
Raleigh, North Carolina 27603

Chairman
North Carolina Utilities Commission
430 North Salisbury Street
Dobbs Building
Raleigh, North Carolina 27602

Mr. Bruce Blanchard, Director
Office of Environmental Project Review
U.S. Department of the Interior, Rm. 4256
18th and C Streets, N.W.
Washington, D.C. 20240



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

DRAFT

CAROLINA POWER & LIGHT COMPANY

NORTH CAROLINA EASTERN MUNICIPAL POWER AGENCY

DOCKET NO. 50-400

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1

FACILITY OPERATING LICENSE

License No. NPF-63

1. The Nuclear Regulatory Commission (the Commission or the NRC) has found that:
 - A. The application for license filed by the Carolina Power & Light Company acting for itself, and the North Carolina Eastern Municipal Power Agency (the licensees), complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations set forth in 10 CFR Chapter I, and all required notifications to other agencies or bodies have been duly made;
 - B. Construction of the Shearon Harris Nuclear Power Plant, Unit 1, (the facility) has been substantially completed in conformity with Construction Permit No. CPPR-158 and the application, as amended, the provisions of the Act, and the regulations of the Commission;
 - C. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the regulations of the Commission (except as exempted from compliance in Section 2.D. below);
 - D. There is reasonable assurance: (i) that the activities authorized by this operating license can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I (except as exempted from compliance in Section 2.D. below);
 - E. Carolina Power & Light Company* is technically qualified to engage in the activities authorized by this license in accordance with the Commission's regulations set forth in 10 CFR Chapter I;

*Carolina Power & Light Company is authorized to act as agent for the North Carolina Eastern Municipal Power Agency, and has exclusive responsibility and control over the physical construction, operation, and maintenance of the facility.

- F. The licensees have satisfied the applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements," of the Commission's regulations;
 - G. The issuance of this license will not be inimical to the common defense and security or to the health and safety of the public;
 - H. After weighing the environmental, economic, technical, and other benefits of the facility against environmental and other costs and considering available alternatives, the issuance of this Facility Operating License No. NPF-63, subject to the conditions for protection of the environment set forth in the Environmental Protection Plan attached as Appendix B, is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied;
 - I. The receipt, possession and use of source, byproduct and special nuclear material as authorized by this license will be in accordance with the Commission's regulations in 10 CFR Parts 30, 40, and 70.
2. Based on the foregoing findings and the Partial Initial Decisions issued by the Atomic Safety and Licensing Board dated February 20, 1985, August 20, 1985, December 11, 1985, and April 28, 1986, regarding this facility and pursuant to approval by the Nuclear Regulatory Commission at a meeting on January 8, 1987, Facility Operating License No. NPF-63, which supersedes the license for fuel loading and low power testing, License No. NPF-53 issued on October 24, 1986, is hereby issued to the Carolina Power & Light Company and the North Carolina Eastern Municipal Power Agency (the licensees) as follows:
- A. This license applies to the Shearon Harris Nuclear Power Plant, Unit 1, a pressurized water reactor and associated equipment (the facility) owned by the North Carolina Eastern Municipal Power Agency and the Carolina Power & Light Company, and operated by the Carolina Power & Light Company. The facility is located on the licensees' site in Wake and Chatham Counties, North Carolina, approximately 16 miles southwest of the nearest boundary of Raleigh, and is described in Carolina Power & Light Company's Final Safety Analysis Report, as supplemented and amended, and in its Environmental Report, as supplemented and amended;
 - B. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses:
 - (1) Pursuant to Section 103 of the Act and 10 CFR Part 50, Carolina Power & Light Company to possess, use, and operate the facility at the designated location in Wake and Chatham Counties, North Carolina, in accordance with the procedures and limitations set forth in this license;

- (2) Pursuant to the Act and 10 CFR Part 50, North Carolina Eastern Municipal Power Agency to possess the facility at the designated location in Wake and Chatham Counties, North Carolina, in accordance with the procedures and limitations set forth in the license;
 - (3) Pursuant to the Act and 10 CFR Part 70, Carolina Power & Light Company to receive, possess, and use at any time special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Final Safety Analysis Report, as supplemented and amended;
 - (4) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, Carolina Power & Light Company to receive, possess, and use at any time any byproduct, source and special nuclear material such as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;
 - (5) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, Carolina Power & Light Company to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components;
 - (6) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, Carolina Power & Light Company to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility authorized herein;
 - (7) Pursuant to the Act and 10 CFR Parts 30 and 40, Carolina Power & Light Company to receive, possess and process for release or transfer to the Shearon Harris site such byproduct material as may be produced by the Shearon Harris Energy and Environmental Center.
 - (8) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, Carolina Power & Light Company to receive, possess but not separate, such byproduct and special nuclear materials as may be produced by the operation of the Brunswick Steam Electric Plant, Units 1 and 2, and H. B. Robinson Steam Electric Plant, Unit 2, provided that the authority granted herein may not be used until the indemnity agreement is amended as necessary to cover the fuel from the above reactors.
- C. This license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect, and is subject to the additional conditions specified or incorporated below.

DRAFT

(1) Maximum Power Level

Carolina Power & Light Company is authorized to operate the facility at reactor core power levels not in excess of 2775 megawatts thermal (100 percent rated core power) in accordance with the conditions specified herein and Attachment 1 to this license. Attachment 1 is hereby incorporated into this license.

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated into this license. Carolina Power & Light Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

(3) Antitrust Conditions

Carolina Power & Light Company shall comply with the antitrust conditions delineated in Appendix C to this license.

(4) Initial Startup Test Program (Section 14)*

Any changes to the Initial Test Program described in Section 14 of the FSAR made in accordance with the provisions of 10 CFR 50.59 shall be reported in accordance with 50.59(b) within one month of such change.

(5) Steam Generator Tube Rupture (Section 15.6.3)

Prior to startup following the first refueling outage, Carolina Power & Light Company shall submit for NRC review and receive approval of a steam generator tube rupture analysis, including the assumed operator actions, which demonstrates that the consequences of the design basis steam generator tube rupture event for the Shearon Harris Nuclear Power Plant are less than the acceptance criteria specified in the Standard Review Plan, NUREG-0800, at §15.6.3 Subparts II(1) and (2) for calculated doses from radiological releases. In preparing their analysis Carolina Power & Light Company will not assume that operators will complete corrective actions within the first thirty minutes after a steam generator tube rupture.

*The parenthetical notation following the title of many license conditions denotes the section of the Safety Evaluation Report and/or its supplements wherein the license condition is discussed.

DRAFT

(6) Detailed Control Room Design Review (Item I.D.1, Section 18)

Carolina Power & Light shall submit the final results of the control room surveys prior to startup following the first refueling outage.

(7) Safety Parameter Display System (Section 18.2.1)

Carolina Power & Light Company shall submit to the NRC for review prior to startup following the first refueling:

- (a) The final Validation Test Report,
- (b) The resolution of additional HED's identified on the SPDS.

(8) Transamerica Delaval, Inc. (TDI) Diesel Generators

Carolina Power & Light Company shall implement the TDI diesel requirements as specified in Attachment 3. Attachment 3 is hereby incorporated into this license.

(9) Formal Federal Emergency Management Agency Finding

In the event that the NRC finds that the lack of progress in completion of the procedures in the Federal Emergency Management Agency's final rule, 44 CFR Part 350, is an indication that a major substantive problem exists in achieving or maintaining an adequate state of emergency preparedness, the provisions of 10 CFR Section 50.54(s)(2) will apply.

(10) Fresh Fuel Storage

The following criteria apply to the storage and handling of new fuel assemblies in the Fuel Handling Building:

- (a) The minimum edge-to-edge distance between a new fuel assembly outside its shipping container or storage rack and all other new fuel assemblies shall be at least 12 inches,
- (b) New fuel assemblies shall be stored in such a manner that water would drain freely from the assemblies in the event of flooding and subsequent draining of the fuel storage area.

DRAFT

D. Exemptions

The facility requires a schedular exemption from Appendix E, Section IV.F.1, which requires that a full participation exercise be conducted one year before the issuance of a license for full power operation. This exemption is authorized by law and will not endanger life or property or the common defense and security, and certain special circumstances are present. This exemption is, therefore, hereby granted pursuant to 10 CFR 50.12 as follows:

Shearon Harris Nuclear Power Plant, Unit 1, is exempt from the requirements of 10 CFR Part 50, Appendix E, Section IV.F.1 for the conduct of an offsite full participation exercise, provided that such an exercise is conducted before or during March 1987.

The facility was previously granted an exemption from Paragraph III.D.2(b)(ii) of Appendix J to 10 CFR Part 50 (see SER Section 6.2.6) with the issuance of License No. NPF-53 on October 24, 1986. In addition, the facility was previously granted an exemption from the criticality alarm requirements of paragraph 70.24 of 10 CFR Part 70 insofar as this section applies to this license. (See License Number SNM-1939 dated October 28, 1985, which granted this exemption).

For the schedular exemption for Appendix E cited above, Carolina Power & Light Company shall certify that all actions have been completed to meet the requirements of the regulations for which the exemption has been granted and shall provide a summary description of actions taken to assure the regulations have been met. This certification and the summary shall be provided 30 days prior to the expiration of the exemption period as described above.

E. Physical Security (Section 13.6.2.10)

Carolina Power & Light Company shall fully implement and maintain in effect all provisions of the physical security, guard training and qualification, and safeguards contingency plans previously approved by the Commission and all amendments and revisions to such plans made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The plans, which contain Safeguards Information protected under 10 CFR 73.21, are entitled: "Shearon Harris Nuclear Power Plant Security Plan," with revisions submitted through September 26, 1986; "Shearon Harris Nuclear Power Plant Guard Training and Qualification Plan," with revisions submitted through October 2, 1985, and "Shearon Harris Nuclear Power Plant Safeguards Contingency Plan," with revisions submitted through October 2, 1985.

F. Fire Protection Program (Section 9.5.1)

Carolina Power & Light Company shall implement and maintain in effect all provisions of the approved fire protection program as described in the Final Safety Analysis Report for the facility as amended and as approved in the Safety Evaluation Report (SER) dated November 1983 (and Supplements 1 through 4, and the Safety Evaluation to this license as Attachment 2), subject to the following provision below.

The licensees may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.

G. Reporting to the Commission

Except as otherwise provided in the Technical Specifications or Environmental Protection Plan, Carolina Power & Light Company shall report any violations of the requirements contained in Section 2.C of this license in the following manner: initial notification shall be made within twenty-four (24) hours to the NRC Operations Center via the Emergency Notification System with written follow-up with 30 days in accordance with the procedures described in 10 CFR 50.73 (b), (c) and (e).

H. The licensees shall have and maintain financial protection of such type and in such amounts as the Commission shall require in accordance with Section 170 of the Atomic Energy Act of 1954, as amended, to cover public liability claims.

I. This license is effective as of the date of issuance and shall expire at midnight on October 24, 2026.

FOR THE NUCLEAR REGULATORY COMMISSION

Harold R. Denton, Director
Office of Nuclear Reactor Regulation

Enclosures:

1. Attachment 1
2. Attachment 2 -
Safety Evaluation
3. Attachment 3 -
TDI Diesel Generators
4. Appendix A - Technical
Specifications
5. Appendix B - Environmental
Protection Plan
6. Appendix C - Antitrust Conditions

Date of Issuance:

UNITED STATES NUCLEAR REGULATORY COMMISSIONSHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1DOCKET NO. 50-400NOTICE OF ISSUANCE OF FACILITY OPERATING LICENSE

Notice is hereby given that the U.S. Nuclear Regulatory Commission (the Commission) has issued Facility Operating License No. NPF-63 to Carolina Power & Light Company, and North Carolina Eastern Municipal Power Agency (the licensees) which authorizes operation of the Shearon Harris Nuclear Power Plant, Unit 1, at reactor core power levels not in excess of 2775 megawatts thermal (100 percent of rated core power) in accordance with the provisions of the license, the Technical Specifications, and the Environmental Protection Plan. The issuance of the license was approved by the Nuclear Regulatory Commission at a meeting on January 8, 1987, and supersedes the license for fuel loading and low power testing, License NPF-53, issued on October 24, 1986.

Shearon Harris Nuclear Power Plant, Unit 1, is a pressurized water reactor located in Wake and Chatham Counties, North Carolina, approximately 16 miles southwest of Raleigh, North Carolina.

The license is effective as of the date of issuance. The application for the license complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations. The Commission has made appropriate findings as required by the Act and the Commission's regulations in 10 CFR Chapter 1, which are set forth in the license. Prior public notice of the overall action involving the proposed issuance of an operating license was published in the FEDERAL REGISTER on January 27, 1982 (47 FR 3898).

The Commission has determined that the issuance of this license will not result in any environmental impacts other than those evaluated in the Final Environmental Statement since the activity authorized by the license is encompassed by the overall action evaluated in the Final Environmental Statement.

Pursuant to 10 CFR 51.32, the Commission has determined that the granting of relief and the issuance of the exemption included in the license will have no significant impact on the environment (51 FR , dated).

For further details with respect to this action, see (1) Facility Operating License No. NPF-63; (2) the Commission's Safety Evaluation Report, dated November 1983 (NUREG-1038), and Supplements 1 through 4; (3) the Final Safety Analysis Report and Amendments thereto; (4) the Environmental Report and supplements thereto; and (5) the Final Environmental Statement (NUREG-0972) dated October 1983.

These items are available at the Commission's Public Document Room, 1717 H Street, N.W., Washington, D.C. 20555, and at the Richard B. Harrison Library, 1313 New Bern Avenue, Raleigh, North Carolina 27610. A copy of the Facility Operating License NPF-63 may be obtained upon request addressed to the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Director, Division of PWR Licensing-A. Copies of the Safety Evaluation Report and its supplements (NUREG-1038) and the Final Environmental Statement (NUREG-0972) may be purchased at the current rates from the National Technical Information Service, Department of Commerce, 5285 Port Royal Road, Springfield, Virginia 22161, or may be ordered by calling (202) 275-2060 or (202) 275-2171, or by writing to the U.S. Government Printing Office, P.O. Box 37082, Washington, D.C.

DRAFT

20013-7082. All orders should clearly identify the NRC publication number and the requester's GPO deposit account, or VISA or Mastercard number and expiration date.

Dated at Bethesda, Maryland this

FOR THE NUCLEAR REGULATORY COMMISSION

Lester S. Rubenstein, Director
PWR Project Directorate #2
Division of PWR Licensing-A
Office of Nuclear Reactor Regulation

DRAFT

ATTACHMENT 3 TO LICENSE NPF-63

TDI DIESEL ENGINE REQUIREMENTS

1. Changes to the maintenance and surveillance programs for the TDI diesel engines, as identified in Shearon Harris SSER No. 4, shall be subject to the provisions of 10 CFR 50.59.

The frequency of the major engine overhauls referred to in the license conditions below shall be consistent with Section IV.1. "Overhaul Frequency" in Revision 2 of Appendix II of the Design Review/Quality Revalidation report which was transmitted by letter dated May 1, 1986, from J. George, Owners Group, to H. Denton, NRC.

2. Connecting rod assemblies shall be subjected to the following inspections at each major engine overhaul:
 - a. The surfaces of the rack teeth should be inspected for signs of fretting. If fretting has occurred, it should be subject to an engineering evaluation for appropriate corrective action.
 - b. All connecting-rod bolts should be lubricated in accordance with the engine manufacturer's instructions and torqued to the specifications of the manufacturer. The lengths of the two pairs of bolts above the crankpin should be measured ultrasonically pre- and post-tensioning.
 - c. The lengths of the two pairs of bolts above the crankpin should be measured ultrasonically prior to detensioning and disassembly of the bolts. If bolt tension is less than 93% of the value at installation, the cause should be determined, appropriate corrective action should be taken, and the interval between checks of bolt tension should be re-evaluated.
 - d. All connecting-rod bolts should be visually inspected for thread damage (e.g., galling), and the two pairs of connecting rod bolts above the crankpin should be inspected by magnetic particle testing (MT) to verify the continued absence of cracking. All washers used with the bolts should be examined visually for signs of galling or cracking, and replaced if damaged.
 - e. Visual inspection should be performed of all external surfaces of the link rod box to verify the absence of any signs of service induced distress.
 - f. All of the bolt holes in the link rod box should be inspected for thread damage (e.g., galling) or other signs of abnormalities. In addition, the bolt holes subject to the highest stresses (i.e.,

the pair immediately above the crankpin) should be examined with an appropriate nondestructive method to verify the continued absence of cracking. Any indications should be recorded for engineering evaluation and appropriate corrective action.

3. The cylinder blocks shall be subjected to the following inspections at the interval specified in the inspections:
 - a. Cylinder blocks shall be inspected for "ligament" cracks, "stud-to-stud" cracks and "stud-to-end" cracks as defined in a report* by Failure Analysis Associates, Inc. (FaAA) entitled, "Design Review of TDI R-4 and RV-4 Series Emergency Diesel Generator Cylinder Blocks" (FaAA report no. FaAA-84-9-11.1), dated December 1984. (Note that the FaAA report specifies additional inspections to be performed for blocks with "known" or "assumed" ligament cracks). The inspection intervals (i.e., frequency) shall not exceed the intervals calculated using the cumulative damage index model in the subject FaAA report. In addition, inspection method shall be consistent with or equivalent to those identified in the subject FaAA report.
 - b. In addition to inspections specified in the aforementioned FaAA report, blocks with "known" or "assumed ligament cracks" (as defined in the FaAA report) should be inspected at each refueling outage to determine whether or not cracks have initiated on the top surface exposed by the removal of two or more cylinder heads. This process should be repeated over several refueling outages until the entire block top has been inspected. Liquid-penetrant testing or a similarly sensitive nondestructive testing technique should be used to detect cracking, and eddy current should be used as appropriate to determine the depth of any cracks discovered.
 - c. If inspection reveals cracks in the cylinder blocks between stud holes of adjacent cylinders ("stud-to-stud" cracks) or "stud-to-end" cracks, this condition shall be reported promptly to the NRC staff and the affected engine shall be considered inoperable. The engine shall not be restored to "operable" status until the proposed disposition and/or corrective actions have been approved by the NRC staff.
4. The following air roll test shall be performed as specified below, except when the plant is already in an Action Statement of Technical Specification 3/4.8.1, "Electric Power Systems, A.C. Sources":

*This report was transmitted to H. Denton, NRC, from C. L. Ray, Jr., TDI Owners Group, by letter dated December 11, 1984.

The engines shall be rolled over with the airstart system and with the cylinder stopcocks open prior to each planned start, unless that start occurs within 4 hours of a shutdown. The engines shall also be rolled over with the airstart system and with the cylinder stopcocks open after 4 hours, but no more than 8 hours after engine shutdown and then rolled over once again approximately 24 hours after each shutdown. (In the event an engine is removed from service for any reason other than the rolling over procedure prior to expiration of the 8-hour or 24-hour periods noted above, that engine need not be rolled over while it is out of service. The licensees shall air roll the engine over with the stopcocks open at the time it is returned to service). The origin of any water detected in the cylinder must be determined and any cylinder head which leaks due to a crack shall be replaced. The above air roll test may be discontinued following the first refueling outage subject to the following conditions:

- a. All cylinder heads are Group III heads (i.e., cast after September 1980).
 - b. Quality revalidation inspections, as identified in the Design Review/Quality Revalidation report, have been completed for all cylinder heads.
 - c. Group III heads continue to demonstrate leak-free performance. This should be confirmed with TDI prior to deleting air roll tests.
5. Periodic inspections of the turbochargers shall include the following:
- a. The turbocharger thrust bearings should be visually inspected for excessive wear after 40 non-prelubed starts since the previous visual inspection.
 - b. Turbocharger rotor axial clearance should be measured at each refueling outage to verify compliance with TDI/Elliott specifications. In addition, thrust bearing measurements should be compared with measurements taken previously to determine a need for further inspection or corrective action.
 - c. Spectrographic and ferrographic engine oil analysis shall be performed quarterly to provide early evidence of bearing degradation. Particular attention should be paid to copper level and particulate size which could signify thrust bearing degradation.
6. Prior to restart following the first refueling:
- a. The engine base shall be inspected for degenerate microstructure (Widmanstaetten graphite) and the results submitted to the NRC for evaluation.
 - b. The exhaust manifold capscrew torques (without lubricant) will be checked/corrected for both engines.

- c. A visual inspection, liquid penetrant test, and dimensional check of diesel generator 1A governor shaft shall be performed.
- d. A liquid penetrant test of diesel generator 1A governor drive gear and shaft shall be performed to check for fatigue checks.
- e. Install an acceptable jacket water standpipe level transmitter on both diesel generators.
- f. A Dresser coupling shall be added on to the engine driven lube oil pump suction line to mitigate the thermal expansion loading and stresses on the pump inlet nozzle.
- g. Replace the 2½ inch Dresser coupling located between the turbocharger and lube oil sump tank for both drain lines with a 2½ inch 150 lb. S.O. flange with A307 bolts.
- h. The four starting air manifold (large bore) support modifications specified in the DR/QR shall be implemented.
- i. The jacket water pipe and fitting (large bore) support members shall be reinforced as specified in the DR/QR.
- j. The two-directional restraints on each fuel oil drip header (2 per engine) shall be modified to a three-directional restraint in order to provide axial restraint of the header and to minimize the effects on all associated tubing.
- k. An anchor (six-way restraint) shall be added on the fuel-oil-to-day-tank return piping (two lines per engine) in order to reduce the unsupported span length and to minimize the effects of the off engine piping.
 - 1. On the generator controls:
 - 1) Coat one side of the adjustment screw for each of the five adjustment potentiometers on the printed circuit board of the voltage regulator with glyptol laquer. If adjustments to the potentiometer are needed, procedures should specify that the glyptol laquer should be removed and then reapplied after the adjustments have been performed.
 - 2) The lug arrangement for the heatsink connections and the power circuit reactor shall be modified so that there are no more than two lugs on each bolt.
 - 3) For the bridge rectifier assembly, the diodes should be mounted on the heatsinks with drilled holes, nuts, and lockwashers and tightened to the proper torque.

L.AFT

APPENDIX B

TO FACILITY OPERATING LICENSE NO. NPF-63
SHEARON HARRIS NUCLEAR POWER PLANT

UNIT 1

CAROLINA POWER AND LIGHT COMPANY

DOCKET NO. 50-400

ENVIRONMENTAL PROTECTION PLAN
(NONRADIOLOGICAL)

DRAFT

SHEARON HARRIS NUCLEAR POWER PLANT
UNIT NO. 1

ENVIRONMENTAL PROTECTION PLAN
(NONRADIOLOGICAL)

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
1.0 Objectives of the Environmental Protection Plan.....	1-1
2.0 Environmental Protection Issues.....	2-1
3.0 Consistency Requirements.....	3-1
3.1 Plant Design and Operation.....	3-1
3.2 Reporting Related to the NPDES Permit and State Certifications.....	3-2
3.3 Changes Required for Compliance with Other Environmental Regulations.....	3-3
4.0 Environmental Conditions.....	4-1
4.1 Unusual or Important Environmental Events.....	4-1
4.2 Environmental Monitoring.....	4-1
5.0 Administrative Procedures.....	5-1
5.1 Review and Audit.....	5-1
5.2 Records Retention.....	5-1
5.3 Changes in Environmental Protection Plan.....	5-2
5.4 Plant Reporting Requirements.....	5-2

1.0 Objectives of the Environmental Protection Plan

The Environmental Protection Plan (EPP) is to provide for protection of nonradiological environmental values during operation of the nuclear facility. The principal objectives of the EPP are as follows:

- (1) Verify that the facility is operated in an environmentally acceptable manner, as established by the Final Environmental Statement - Operating Licensing Stage (FES-OL) and other NRC environmental impact assessments.
- (2) Coordinate NRC requirements and maintain consistency with other Federal, State and local requirements for environmental protection.
- (3) Keep NRC informed of the environmental effects of facility construction and operation and of actions taken to control those effects.

Environmental concerns identified in the FES-OL which relate to water quality matters are regulated by way of the licensee's NPDES permit.

DRAFT

2.0 Environmental Protection Issues

In the FES-OL (NUREG-0972) dated October 1983, the staff considered the environmental impacts associated with the operation of the Shearon Harris Nuclear Power Plant, Unit 1. No aquatic/water quality, terrestrial, or noise issues were identified.

- 3.0 Consistency Requirements
- 3.1 Plant Design and Operation

The licensee may make changes in station design or operation or perform tests or experiments affecting the environment provided such activities do not involve an unreviewed environmental question and do not involve a change in the EPP*. Changes in station design or operation or performance of tests or experiments which do not affect the environment are not subject to the requirements of this EPP. Activities governed by Section 3.3 are not subject to the requirements of this Section.

Before engaging in additional construction or operational activities which may significantly affect the environment, the licensee shall prepare and record an environmental evaluation of such activity. Activities are excluded from this requirement if all measurable nonradiological environmental effects are confined to the on-site areas previously disturbed during site preparation and plant construction. When the evaluation indicates that such activity involves an unreviewed environmental question, the licensee shall provide a written evaluation of such activity and obtain prior NRC approval. When such activity involves a change in the EPP, such activity and change to the EPP may be implemented only in accordance with an appropriate license amendment as set forth in Section 5.3 of this EPP.

* This provision does not relieve the licensee of the requirements of 10 CFR 50.59.

A proposed change, test or experiment shall be deemed to involve an unreviewed environmental question if it concerns: (1) a matter which may result in a significant increase in any adverse environmental impact previously evaluated in the FES-OL, environmental impact appraisals, or in any decisions of the Atomic Safety and Licensing Board; or (2) a significant change in effluents or power level; or (3) a matter, not previously reviewed and evaluated in the documents specified in (1) of this Subsection, which may have a significant adverse environmental impact.

The licensee shall maintain records of changes in facility design or operation and of tests and experiments carried out pursuant to this Subsection. These records shall include written evaluations which provide bases for the determination that the change, test, or experiment does not involve an unreviewed environmental question or constitute a decrease in the effectiveness of this EPP to meet the objectives specified in Section 1.0. The licensee shall include as part of the Annual Environmental Operating Report (per Subsection 5.4.1) brief descriptions, analyses, interpretations, and evaluations of such changes, tests and experiments.

3.2 Reporting Related to the NPDES Permit and State Certification

Changes to, or renewals of, the NPDES Permit or the State certification shall be reported to the NPC within 30 days following the date the change or renewal is approved. If a permit or certification, in part or in its entirety, is appealed and stayed, the NRC shall be notified within 30 days following the date the stay is granted.

DRAFT

The licensee shall notify the NRC of changes to the effective NPDES Permit proposed by the licensee by providing NRC with a copy of the proposed change at the same time it is submitted to the permitting agency. The licensee shall provide the NRC a copy of the application for renewal of the NPDES Permit at the same time the application is submitted to the permitting agency.

3.3 Changes Required for Compliance with Other Environmental Regulations

Changes in plant design or operation and performance of tests or experiments which are required to achieve compliance with other Federal, State, and local environmental regulations are not subject to the requirements of Section 3.1.

4.0 Environmental Conditions

4.1 Unusual or Important Environmental Events

Any occurrence of an unusual or important event that indicates or could result in significant environmental impact causally related to plant operation shall be recorded and reported to the NRC within 24 hours followed by a written report per Subsection 5.4.2. The following are examples: excessive bird impaction events; onsite plant or animal disease outbreaks; mortality or unusual occurrence of any species protected by the Endangered Species Act of 1973; fish kills; increase in nuisance organisms or conditions (including Corbicula; unanticipated or emergency discharge of waste water or chemical substances; damage to vegetation resulting from cooling tower drift deposition; and station outage or failure of any cooling water intake or service water system components due to biofouling by Corbicula).

No routine monitoring programs are required to implement this condition.

4.2 Environmental Monitoring

4.2.1 Aquatic Monitoring

The certifications and permits required under the Clean Water Act provide mechanisms for protecting water quality and, indirectly, aquatic biota. The NRC will rely on the decisions made by the State of North Carolina under the authority of the Clean Water Act for any requirements for aquatic monitoring.

4.2.2 Terrestrial Monitoring

Terrestrial monitoring is not required.

4.2.3 Noise Monitoring

Noise monitoring is not required.

5.0 Administrative Procedures

5.1 Review and Audit

The licensee shall provide for review and audit of compliance with the EPP. The audits shall be conducted independently of the individual or groups responsible for performing the specific activity. A description of the organization structure utilized to achieve the independent review and audit function and results of the audit activities shall be maintained and made available for inspection.

5.2 Records Retention

Records and logs relative to the environmental aspects of station operation shall be made and retained in a manner convenient for review and inspection. These records and logs shall be made available to NRC on request.

Records of modifications to station structures, systems and components determined to potentially affect the continued protection of the environment shall be retained for the life of the station. All other records, data and logs relating to this EPP shall be retained for five years or, where applicable, in accordance with the requirements of other agencies.

5.3 Changes in Environmental Protection Plan

Requests for changes in the EPP shall include an assessment of the environmental impact of the proposed change and a supporting justification. Implementation of such changes in the EPP shall not commence prior to NRC approval of the proposed changes in the form of a license amendment incorporating the appropriate revision to the EPP.

5.4 Plant Reporting Requirements

5.4.1 Routine Reports

An Annual Environmental Operating Report describing implementation of this EPP for the previous year shall be submitted to the NRC prior to May 1 of each year. The period of the first report shall begin with the date of issuance of the operating license, and the initial report shall be submitted prior to May 1 of the year following issuance of the operating license.

The report shall include summaries and analyses of the results of the environmental protection activities required by Subsection 4.2 (if any) of this EPP for the report period, including a comparison with related preoperational studies, operational controls (as appropriate), and previous nonradiological environmental monitoring reports, and an assessment of the observed impacts of the plant operation on the environment. If harmful

DRAFT

effects or evidence of trends toward irreversible damage to the environment are observed, the licensee shall provide a detailed analysis of the data and a proposed course of mitigating action.

The Annual Environmental Operating Report shall also include:

- (1) A list of EPP noncompliances and the corrective actions taken to remedy them.
- (2) A list of all changes in station design or operation, tests, and experiments made in accordance with Subsection 3.1 which involved a potentially significant unreviewed environmental question.
- (3) A list of nonroutine reports submitted in accordance with Subsection 5.4.2.

In the event that some results are not available by the report due date, the report shall be submitted noting and explaining the missing results. The missing results shall be submitted as soon as possible in a supplementary report.

5.4.2 Nonroutine Reports

A written report shall be submitted to the NRC within 30 days of occurrence of a nonroutine event. The report shall: (a) describe, analyze, and evaluate

DRAFT

the event, including extent and magnitude of the impact, and plant operating characteristics; (b) describe the probable cause of the event; (c) indicate the action taken to correct the reported event; (d) indicate the corrective action taken to preclude repetition of the event and to prevent similar occurrences involving similar components or systems; and (e) indicate the agencies notified and their preliminary responses.

Events reportable under this subsection which also require reports to other Federal, State or local agencies shall be reported in accordance with those reporting requirements in lieu of the requirements of this subsection. The NRC shall be provided with a copy of such report at the same time it is submitted to the other agency.

15T

APPENDIX C

ANTITRUST CONDITIONS

The licensee, Carolina Power & Light Company, is subject to the following antitrust conditions:

Commitment No. 1

Licensee recognizes that it is generally in the public interest for electric utilities to interconnect, coordinate reserves, and engage in bulk power supply transactions, in order to increase electric system reliability and reduce the costs of electric power. Bulk power supply arrangements should be such as to provide benefits, on balance, each to licensee and to other participant(s), respectively. The benefits to participants in such arrangements need not be equal and the benefits realized by a small system may be proportionately greater than those realized by a larger system. In implementing the commitments which it makes in the succeeding paragraphs, licensee will act in accordance with the foregoing principles.

Explanatory Note*

(a) Neither licensee nor any other participant shall be obligated to enter into such arrangements (1) if to do so would violate, incapacitate, or limit its ability to perform any other existing contractual arrangement, or (2) to do so would adversely affect its system operations or the reliability of power supply to its customers, or (3) if to do so would jeopardize the licensee's ability to finance or construct on reasonable terms facilities needed to meet its own anticipated system requirements.

Commitment No. 2

Licensee will interconnect with and coordinate reserves by means of the sale and exchange of emergency bulk power with any entity or entities in its service area** engaging in or proposing to engage in electric bulk power supply on terms that will provide for licensee's costs (including a reasonable return) in connection therewith; and allow the other participant(s), as well as licensee, full access on a proportionate basis to the benefits of reserve coordination. ("Proportionate basis" refers to the equalized percentage of reserves concept rather than the largest single-unit concept, unless all participants otherwise agree).

*In order to clarify the commitments, certain explanatory notes have been added.

**The use of the term "service area" as found in this commitment or in any other section of the commitments is intended to describe those areas in North Carolina and South Carolina where licensee provides some class of electric service, but in no way indicates an assignment or allocation of wholesale market areas.

Explanatory Notes

- (a) Interconnections will not be limited to low voltages when higher voltages are available from licensee's installed facilities in the area where interconnection is desired, when the proposed arrangement is found to be technically and economically feasible.
- (b) Emergency service agreements will not be limited to a fixed amount, but emergency service provided under such agreements will be furnished if and when available and desired where such supply does not impair or threaten to impair service to the supplier's customers due to capacity availability, fuel supply, system reliability or other good cause. Licensee, however, shall not be obligated to provide emergency service to another entity in lieu of such entity's maintaining its own adequate system reserves or fuel supply.
- (c) An example of the type of reserve sharing arrangement available to any participant and which would provide "full access on a proportional basis to the benefits of reserve coordination" would be one in which the following conditions would obtain:
 - (i) The licensee and each participant(s) shall provide to the other emergency power if and when available from its own generation, or through its transmission from the generation of others to the extent it can do so without disrupting or threatening to impair service to its own customers due to capacity availability, fuel supply, system reliability or other good cause.
 - (ii) The participants to the reserve sharing agreement, including licensee, shall, consistent with licensee's reserve policy as established from time to time by licensee, determine a minimum percentage reserve to be installed and/or purchased by the participants, including licensee, as necessary to maintain in total an adequate and reliable power supply on the interconnected system of licensee and participant(s).

Commitment No. 3

Licensee will purchase from or sell "bulk power" to any other entity in its service area engaging in or proposing to engage in the generation of electric power in bulk at the seller's cost (including a reasonable return) whenever such transactions would serve to reduce the overall costs of new bulk power supply, each, for itself and other participant(s) to the transaction, respectively. ("Costs" refers to costs of bulk power supply determined in accordance with the seller's normal practices, without regard to the purchaser's intended use of the power or the status of the purchaser). This paragraph refers specifically to the opportunity to coordinate in the planning of new generation, transmission and associated facilities. If licensee questions the desirability of a proposed transaction on the ground that it would not reduce its overall bulk power costs, it will make available upon request to the entity proposing the transaction such information as is relevant and reasonably necessary to establish its bulk power costs.

DRAFT

Explanatory Notes

- (a) It is not to be considered that this condition requires licensee to purchase or sell bulk power if such purchase or sale is technically infeasible or that the benefits therefrom do not exceed the costs in connection with such purchase or sale.

Commitment No. 4

Licensee will facilitate the exchange of bulk power by transmission over its system between or among two or more entities with which it is interconnected on terms which will fully compensate it for the service performed, to the extent that such arrangements reasonably can be accommodated from a functional and technical standpoint.

Explanatory Notes

- (a) This condition applies to entities with which licensee is interconnected in the future as well as to which it is now interconnected.

Commitment No. 5

Licensee will sell power in bulk to any entity in the aforesaid area now engaging in or proposing to engage in the retail distribution of electric power.

Explanatory Notes

- (a) This is provided that licensee has such power available for sale after making adequate provision for the capacity, fuel and other requirements of its service area customers.

Commitment No. 6

The implementation of these numbered paragraphs shall be in all respects on reasonable terms and conditions as consistent with the Federal Power Act and all other lawful regulation and authority, and shall be subject to engineering and technical feasibility for licensee's system. Licensee will negotiate (including the execution of a contingent statement of intent) with respect to the foregoing commitments with any entity in its service area engaging in or proposing to engage in bulk power supply transactions, but licensee shall not be required to enter into any final arrangements prior to resolution of any substantial questions as to the lawful authority of an entity to engage in the transactions.

Commitment No. 7

In contracts between licensee and its wholesale customers, licensee will not attempt to restrict such customers from electrically connecting with other sources of power if reasonable written notice to licensee has been made and agreement reached by the parties on such measures or conditions, if any, as may be required for the protection and reliability of both systems.