

January 12, 1987

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

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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). Also enclosed is a Safety Evaluation which resolves several new issues or issues that remained to be resolved from the previous issuance of the Shearon Harris Safety Evaluation Report (NUREG-1038) and Supplements 1 through 4.

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

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. License condition 2.B.8 provides that 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 may be received and possessed at the Shearon Harris plant. It is our understanding that such byproduct and special nuclear materials will not be received on the Shearon Harris site until the appropriate indemnity agreement amendment has been resolved.

Sincerely,

/s/

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

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Enclosures:

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

cc w/enclosures: See next page

\*PREVIOUS CONCURRENCE SEE DATE

LA:PAD#2*	PM:PAD#2*	FOB*	EB*	RSB*	PSB*	EISCB*
DMiller	BBuckley:hc	VBenaroya	RBallard	CBerlinger	JMilhoan	FRosa
1/2/87	1/2/87	1/6/87	1/7/87	1/6/87	1/6/87	1/6/87

AD/PWR-A*	OGC*	P&RABS*	SP*	URB:PAD#2	AD:DPLA	DD/NRR	D/NRR
ERossi	CBarth	WLambe	DNash	LRubenstein	TNovak	RVollmer	HDenton
1/12/87	1/7/87	1/7/87	1/7/87	1/11/87	1/12/87	1/87	1/12/87

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

Shearon Harris

cc:

Thomas A. Raxter, 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

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

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 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 and 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. R. Robinson Steam Electric Plant, Unit 2.
- 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 1 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.

(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.

(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.

(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 human engineering deficiencies identified on the safety parameter display system.

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

Carolina Power & Light Company shall implement the TDI diesel requirements as specified in Attachment 1. Attachment 1 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.

D. Exemptions

The facility requires an exemption from Appendix E, Section IV.F.1, which requires that a full participation exercise be conducted within 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 requirement of 10 CFR Part 50, Appendix E, Section IV.F.1 for the conduct of an offsite full participation exercise within one year before the issuance of the first operating license for full power and prior to operation above 5 percent of rated power, provided that a full participation exercise is conducted before or during March 1987.

The facility is granted an exemption from Paragraph III.D.2(b)(ii) of Appendix J to 10 CFR Part 50 (see SER Section 6.2.6). 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. 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).

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 dated January 12, 1987, 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 within 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 -  
TDI Diesel Engine Requirements
2. Appendix A - Technical  
Specifications
3. Appendix B - Environmental  
Protection Plan
4. Appendix C - Antitrust Conditions

Date of Issuance: January 12, 1987

ATTACHMENT 1 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, NPC.

2. Connecting rod assemblies shall be subjected to the following inspections at each major engine overhaul:
  - a. The surfaces of the rack teeth shall be inspected for signs of fretting. If fretting has occurred, it shall be subject to an engineering evaluation for appropriate corrective action.
  - b. All connecting-rod bolts shall 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 shall be measured ultrasonically pre- and post-tensioning.
  - c. The lengths of the two pairs of bolts above the crankpin shall 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 shall be determined, appropriate corrective action shall be taken, and the interval between checks of bolt tension shall be re-evaluated.
  - d. All connecting-rod bolts shall be visually inspected for thread damage (e.g., galling), and the two pairs of connecting rod bolts above the crankpin shall be inspected by magnetic particle testing (MT) to verify the continued absence of cracking. All washers used with the bolts shall be examined visually for signs of galling or cracking, and replaced if damaged.
  - e. Visual inspection shall 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 shall 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 shall be examined with an appropriate nondestructive method to verify the continued absence of cracking. Any indications shall 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) shall 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 shall be repeated over several refueling outages until the entire block top has been inspected. Liquid-penetrant testing or a similarly sensitive nondestructive testing technique shall be used to detect cracking, and eddy current shall 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 licensee 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 shall 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 shall be visually inspected for excessive wear after 40 non-prelubed starts since the previous visual inspection.
  - b. Turbocharger rotor axial clearance shall be measured at each refueling outage to verify compliance with TDI/Elliott specifications. In addition, thrust bearing measurements shall 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 shall 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) shall 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/OR shall be implemented.
- i. The jacket water pipe and fitting (large bore) support members shall be reinforced as specified in the DR/OR.
- 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.
- l. 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 lacquer. If adjustments to the potentiometer are needed, procedures shall specify that the glyptol lacquer shall 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 shall be mounted on the heatsinks with drilled holes, nuts, and lockwashers and tightened to the proper torque.

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.

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.

## SAFETY EVALUATION

### SHEARON HARRIS UNIT 1

#### 1. INTRODUCTION AND GENERAL DESCRIPTION OF PLANT

##### Background

In November 1983, the U.S. Nuclear Regulatory Commission staff (NPC staff or staff) issued a Safety Evaluation Report (SER), NUREG-1038, regarding the application by Carolina Power & Light Company and North Carolina Eastern Municipal Power Agency (the licensees, hereinafter referred to as the "licensee") for a license to operate the Shearon Harris Nuclear Power Plant, Unit 1. Supplement Nos. 1, 2, 3 and 4 were issued in June 1984, June 1985, May 1986 and October 1986, respectively. This Safety Evaluation closes out the only issues remaining to be resolved. These are:

- (1) Emergency Diesel Generator Reliability (Section 8.3.1)
- (2) Physical Independence of Redundant Safety-Related Systems (Section 8.3.1)
- (3) Emergency Planning (Section 13.3)
- (4) Operating and Maintenance Procedures (Section 13.5.2)
- (5) Preoperational Test Program (Section 14)
- (6) II.K.3.5, Automatic Trip of RCPs during LOCA (Section 15.9.9)
- (7) Technical Specifications (Section 16)

Each of the following sections or appendices of this supplement is numbered the same as the section or appendix of the SER that is being updated, and the discussions are supplementary to and not in lieu of the discussion in the SER unless otherwise noted. Accordingly, Appendix A is a continuation of the chronology of NRC's principal actions related to the safety (or radiological) review of the application.

#### 8.3 Onsite Power Systems

##### 8.3.1 AC Power Systems

##### Emergency Diesel Generator Reliability

As a result of the Transamerica Delaval (TDI) Diesel Generator Reliability Review, Attachment 2 Paragraph 7 that was issued with the Shearon Harris Nuclear Power Plant Operating License (NPF-53) stated that:

- "7. Prior to full power operation of Shearon Harris, the licensee shall provide the NRC with the following:

- a. The status of the Phase II component inspections. Any Phase II inspection that has not been completed by full power operation shall be completed by restart following the first refueling.
- b. The inspection frequencies in the maintenance matrix that are to be determined by the licensee."

In a letter dated November 25, 1986 the licensee addressed License Condition 7b. above. The staff has reviewed the frequencies provided in the letter and finds them commensurate with common industry inspection frequencies and practices and are, therefore, acceptable. Thus, License Condition 7b. of Attachment 2 that was issued with the low power license (NPF-53) has been satisfied as part of the Shearon Harris full power operating license.

In a letter dated December 2, 1986 the licensee provided the status of the Phase II component inspections. The status of the inspections fall into four categories:

1. Phase II components for which all DR/OR inspections have been completed. This encompasses the majority of the components.
2. Phase II components for which the DR/OR inspections have not been completed but will be done prior to startup following first refueling (five components).
3. Phase II components for which deviations have been taken from DR/OR and the deviations have been reviewed and approved by the Owner's Group (7 components).
4. Phase II components for which deviations have been taken from the DR/OR and the Owners Group has not reviewed and approved them or has reviewed them but disapproved the deviation. (6 components).

The staff has reviewed the material and finds the DR/OR inspections that have been performed or will be performed on the Phase II components in Categories 1 and 2 above acceptable. The license will be conditioned as described below for those inspections in Category 2 that need to be performed prior to restart following the first refueling.

The seven (7) components which fall into Category 3 above are:

- a. Component 02-310B - Main Bearings
- b. Component 02-341C - Piston Pin Assembly
- c. Component 02-345C - Tappets and Guides: Fuel Pump Base Assembly
- d. Component 02-360B - Cylinder Head Valves: Intake and Exhaust Valves
- e. Component 02-380A - Exhaust Manifold
- f. Component 02-455B - Fuel Oil Filters and Strainers: Strainers
- g. Component 02-630D - Pyrometer Conduit Assembly Thermocouples

The justifications for the DR/OR deviations provided for the above components in the status report of December 2, 1986 states that the component design is adequate to perform its intended design function and that the deviation was approved by the Owners Group. The deviation is an Owners Group sanctioned revision to the DR/OR which the staff has reviewed and finds acceptable.

The six (6) components which fall into Category 4 above are:

- a. Component 02-420 - Engine Driven Lube Oil Pump
- b. Component 02-435A - Jacket Water Fittings - Pipe and Fittings (Large Bore)
- c. Component 02-441C - Starting Air Manifold Supports (Large Bore)
- d. Component 02-450B - Fuel Oil Header: Fuel Oil Supports (Small Bore)
- e. Component 02-467A - Turbocharger - Lube Oil Fitting: Piping (Large Bore)
- f. Component 02-650B - Generator Controls

Based on the information provided for the components specified in items a through e above, the licensee performed his own site specific analysis to justify the adequacy of the components' design. It appears that the licensee performed these analyses without using the services of the TDI Owners Group or their consultants or having the Owners Group evaluate and approve the results of the analyses. For item f (component 02-650B) as stated in the December 2, 1986 letter the Owners Group disapproved the licensee's deviations. The staff, in approving the Owners Group Program for requalifying the TDI diesel generators, did so with the understanding that the Owners Group Program would be followed with no deviations except those made by the Owners Group prior to final staff review of the program. Since the final generic staff evaluation has been completed and published (NUREG-1216), the staff cannot approve any deviations from the original DR/OR recommendation. The staff believes that the reliability and operability of the diesel generator will not be seriously impaired over the short term if the modifications/inspections are not implemented, and therefore the staff does not require that the modifications/inspections be implemented prior to full power operation. However, the staff does require that the modifications/inspections be implemented prior to restart following the first refueling of Shearon Harris. These will become conditions of the license as stated below.

The licensee has met the first part of License Condition 7a. of Attachment 2 - "Provide the status of the Phase II component inspections" in his December 2, 1986 letter, and met the second part of the license condition except for the deviation in item 4 above which will be incorporated into the full power license as stated below. Therefore, the license condition has been removed from the license. However, License Condition 6 of Attachment 1 to the full power license has been modified to incorporate the various Phase II component inspections/modifications that need to be completed prior to startup following the first refueling outage. License Condition 6 of Attachment 1 to the full power license has been modified as follows:

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) shall 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 cracks.
- 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/OR shall be implemented.
- i. The jacket water pipe and fitting (large bore) support members shall be reinforced as specified in the DR/OR.
- 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 from the off engine piping.
- l. 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 lacquer. If adjustments to the potentiometer are needed, procedures shall specify that the glyptol lacquer shall 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 shall be mounted on the heatsinks with drilled holes, nuts, and lockwashers and tightened to the proper torque.

#### Physical Independence of Redundant Safety-Related Systems

Carolina Power and Light (CP&L), by letter dated November 21, 1986, submitted additional information on fire wraps and fire blankets. The staff had provided their evaluation on fire wraps and fire blankets in Supplement 4 to the Safety

Evaluation Report, based on the information provided in the licensee's submittal of September 16, 1986. The staff had concluded that both fire wraps and fire blankets were tested in accordance with American Society for Testing and Materials Standards ASTM E-119 for ratings of 1 and 3 hours. The new information provided by the licensee indicates that one of the fire wraps is not tested in accordance with ASTM E-119 and the licensee has requested that the Supplement Safety Evaluation Report Supplement 4 (SSER-4) be clarified concerning fire wraps which are used as barriers.

### EVALUATION AND ANALYSIS

The Shearon Harris FSAR guideline criteria for minimum separation distance between barriers and raceway/cables is one inch. The licensee, in their September 16, 1986 submittal, described steel tray covers, fire wraps, and fire blankets as suitable barriers which meet the intent of IEEE 384-1974. During the review of the licensee's submittal, the staff was assured that the fire wrap and fire blanket used for raceway installation at Shearon Harris had been tested and qualified in accordance with standard ASTM E-119. The new information provided by the licensee on the Shearon Harris Physical Separation describes three types of wrap systems which are used at Shearon Harris for barriers. The licensee has indicated that this information will be incorporated in a future FSAR amendment. The three wrap systems meet the intent of IEEE 384-1974 and are described below.

One-hour wrap system - The one-hour wrap system is installed to meet the requirement of the FSAR Section 9.5.1. This wrap system has been tested and qualified in accordance with ASTM E-119 standard. The one-hour wrap system is typically applied to a tray or a conduit for fire protection reasons. For electrical separation, this wrap is considered an acceptable barrier with no separation required between the wrap and the protected raceway.

Three-hour wrap system - The three-hour wrap system is installed to meet the requirements of the FSAR Section 9.5.1. This wrap system has been tested and qualified in accordance with ASTM E-119 standard. The three-hour wrap system is typically applied to a conduit for fire protection reasons. For electrical separation, this wrap is considered an acceptable barrier with no separation required between the wrap and the protected raceway.

### Thermal Barrier Wrap

The thermal barrier wrap system is a Siltemp wrap applied with 100 percent overlap and covered with 3M No. 69 glass tape with 50 percent overlap. The thermal barrier wrap is used on free air drop-out cable to provide an equivalent cover similar to steel covers for an open tray. This particular wrap technique is used for containment of the fault circuit energy since it does not melt until temperatures exceed 3000 degrees, similar to steel. This wrap technique has been proof tested by the Beaver Valley Nuclear Plant and was proven to function similar to steel conduit to prevent damage to cables of a redundant division. In the Beaver Valley proof testing, Duquesne Light Co. Test Report, No. 17666-02, Revision A, May 24, 1986, the thermal barrier wrap was designated as PW-F wrap technique. From the Beaver Valley testing of the thermal barrier wrap, it is concluded that this system meets the intent of IEEE 384-1974 for a suitable barrier.

## CONCLUSION

The staff has assessed the thermal capability of the one-hour and three-hour fire wrap system and the thermal barrier wrap system for protection of raceways from cable fault induced fires. The one-hour and three-hour fire wrap systems have been tested for one-hour and three-hour rating in accordance with ASTM-E-119 standard. The thermal barrier wrap system has been proof tested for use at Beaver Valley Nuclear Plant. The staff also concludes that one inch of fire wrap (i.e. one-hour/or three-hour fire wrap) provides a thermal barrier capability to at least one inch of air. Since the one-hour and three-hour fire wrap systems are of greater than one inch thickness, additional air separation is not required between these wraps and protected raceway. Based upon the staff's evaluation of the licensee's submittal of additional information, the one-hour and three-hour wrap systems and the thermal barrier wrap system meet the intent of IEEE-384-1974 in regard to protection of redundant cable systems from faults in either system and are therefore, acceptable.

### 13.3 Emergency Planning

#### Request for an Exemption from Section IV.F.1 of Appendix E to 10 CFR 50

##### Background

In Supplement No. 3 of the NRC staff's Safety Evaluation Report (NUREG-1038, SSER 3), the staff concluded that the state of onsite and offsite preparedness provides reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency at the Shearon Harris Nuclear Power Plant (SHNPP or Harris). This conclusion was based on a review of the Federal Emergency Management Agency (FEMA) findings and determinations on the adequacy of state and local emergency plans and preparedness, and on the NRC assessment of the adequacy of the applicant's onsite emergency plan and preparedness. Subsequently, in a letter dated March 4, 1986, Carolina Power and Light Company (CP&L) submitted a request for an exemption pursuant to 10 CFR 50.12(a) from the provisions of 10 CFR 50, Appendix E, Section IV.F.1, regarding the conduct of a full participation exercise within one year before the issuance of a full power operating license for Harris. The NRC staff has received many letters concerning the applicant's exemption request which, as appropriate, have been responded to separately.

##### EVALUATION

The applicable provision of Section IV.F.1 provides that:

A full participation exercise which tests as much of the licensee, state and local emergency plans as is reasonably achievable without mandatory public participation shall be conducted for each site at which a power reactor is located for which the first operating license for that site is issued after July 13, 1982. This exercise shall be conducted within 1 year before the issuance of the first operating license for full power and prior to operation above 5% of rated power of the first reactor, and shall include participation by each state and local government within the plume exposure pathway EPZ and each state within the ingestion exposure pathway EP7.

The NRC may grant exemptions from Part 50 requirements which, pursuant to 10 CFR §50.12(a) are (1) authorized by law, will not present an undue risk to the public health and safety, and are consistent with the common defense and security, and (2) present special circumstances. Section 50.12(a)(2)(ii) of 10 CFR describes the special circumstances in that the application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule. The "underlying purpose" of the Appendix E, Section IV.F.1 requirement is to ensure that adequate emergency response capability exists at the time of licensing.

A full participation exercise involving the testing of applicant, state and local emergency plans for Harris was conducted on May 17, 1985, in expectation that a full power operating license would be issued within one year. The onsite portion of the May 17, 1985 exercise was observed and evaluated by the NRC and documented in Inspection Report No. 50-400/85-20. There were no significant deficiencies in onsite preparedness identified as a result of the exercise. The offsite portion of the exercise was observed and evaluated by FEMA and representatives of the member agencies of the FEMA Region II Regional Assistance Committee. FEMA provided its report of the exercise on August 7, 1985. In this report there were no "Category A" deficiencies identified as a result of the exercise (Category A deficiencies were defined as deficiencies of the type that would cause a finding that offsite emergency preparedness was not adequate to provide reasonable assurance that appropriate protective measures can be taken to protect the health and safety of the public in the vicinity of the plant in the event of a radiological emergency). FEMA found that ". . . the state and local emergency plans are adequate and capable of being implemented and the exercise demonstrated that offsite preparedness is adequate. . . ."

Since the initial exercise, CP&L has conducted emergency plan retraining in accordance with the SHNPP Emergency Plan. This retraining involves managers of emergency response facilities; personnel responsible for accident assessment, radiological analysis and dose projection, first aid, medical support and rescue; and staff assigned to radiological monitoring teams, fire brigades, and security. In November 1985, the plant began conducting quarterly fire drills for each shift to test communications, notification, and management of systems and equipment using simulated fire conditions. In December 1985, the plant began semiannual health physics drills to test the response of plant radiological teams to simulated plant radiological conditions.

The capability of State and local response organizations was satisfactorily demonstrated through participation in the May 17, 1985 Shearon Harris exercise. In addition, the State successfully participated in the February 1986 exercise with the Catawba Nuclear Power Plant. The State has conducted approximately 15 training courses to help maintain emergency preparedness for State and county personnel. Local counties are also conducting training programs in radiation for local hospitals, and in damage assessment and shelter management. In September 1985, the plant, State, and counties began participating in monthly communication drills to test the notification system and the reading of messages by plant personnel to State and local warning point personnel. In November 1985, Harnett County conducted a hazardous materials release drill with local hospitals and a hazardous materials incident exercise is planned in Lee County.

In a letter to the NRC dated May 2, 1986, CP&L committed to an exercise with participation by Lee, Harnett, Chatham, and Wake counties. CP&L stated that the offsite portion of this exercise would include the following local activities:

- Mobilize appropriate local county staffs;
- Activate local county emergency facilities;
- Confirm adequacy of local county facilities;
- Exercise command and control functions during emergency response;
- Confirm adequacy of communications between facilities and organizations;
- Exercise the alert notification procedures;
- Exercise the capability for ambulance support for contaminated injured persons; and
- Exercise the capability for hospital support for contaminated injured persons.

In addition, CP&L indicated that the State would participate in the exercise by activating their communications capabilities. 1/ CP&L plans to conduct the next full participation exercise with the State of North Carolina and the four local counties in February 1987. (See letter to H. Denton, NRC, from J. Dean, N.C. Department of Crime Control and Public Safety, dated 9/29/86.) This exercise will be evaluated by NRC and FEMA.

#### CONCLUSION

Based on a review of the applicant's exemption request, the NRC staff finds that the following factors support the granting of the requested exemption:

1. The conduct of a full participation emergency preparedness exercise in May 1985 where the staff identified no significant deficiencies in onsite preparedness and leading to a favorable FEMA finding on offsite preparedness on August 7, 1985.
2. Full participation by the State of North Carolina in the exercise at Catawba in February 1986 and the planned full participation by the State in the scheduled exercise at SHNPP in February 1987.
3. The participation of local response organizations in a partial participation exercise at SHNPP in October 1986 and the involvement of these organizations, with the assistance of the licensee, in an ongoing training and development program.

Based on the foregoing, and in accordance with 10 CFR 50.12(a), the staff concludes that the exemption from the requirements of 10 CFR 50, Appendix E, Section IV.F.1, as discussed above, is authorized by law, will not present an undue risk to the public health and safety, and is consistent with the

<sup>1/</sup>This partial participation exercise was conducted on October 28, 1986. (Letter from CP&L to NRC dated 12/23/86.)

common defense and security. These factors also demonstrate that there exists adequate emergency response capability and thus, the underlying purpose of the rule is served. Accordingly, pursuant to 10 CFR §50.12(a)(2)(ii), the exemption request satisfies the requirement for "special circumstances."

Accordingly, the staff hereby approves the following exemption:

"Shearon Harris Nuclear Power Plant, Unit 1, is exempt from the requirement of 10 CFR Part 50, Appendix E, Section IV.F.1 for the conduct of an offsite full participation exercise within one year before the issuance of the first operating license for full power and prior to operation above 5 percent of rated power, provided that a full participation exercise is conducted before or during March 1987."

### 13.5 Station Administration Procedures

#### 13.5.2 Operating and Maintenance Procedures

##### Procedures Generation Package

In our Safety Evaluation Report, we concluded that the PGP was acceptable for the low power license. The licensee had committed to address a list of items, discussed in the SER, to make them acceptable for the full power license. The licensee submitted additional information on October 1 and December 23, 1986. In addition, during the month of December 1986, we audited a sample of emergency procedures for confirm the adequacy of the PGP implementation.

##### Discussion

Based upon our review of the additional information submitted by the licensee and our audit of a sample of the emergency procedures, we have identified one additional concern with the plant-specific technical guidelines and two concerns with the writers guide, as discussed below.

#### A. Plant-Specific Technical Guidelines

The licensee committed to add plant-specific information to the EOPs, as required by the Westinghouse Guidelines. This commitment was addressed by the development and implementation of a Users' Guide. Our audit of the Users' Guide leads us to conclude that the following item is not consistent with the level of detail required by the Westinghouse Guidelines.

Although the licensee has developed a Users' Guide to supplement the information presented in the Path Procedures (flow charts), there is no cross-reference system for these documents that would allow operators to easily access the detailed information in the Users' Guide. Because the Path Procedures do not contain all the detailed information necessary to execute emergency actions, and because the Users' Guide was designed to provide this detailed information, a cross-referencing system should be instituted to allow quick and easy access to the detailed steps of the User's Guide. By letter dated December 23, 1986, the licensee committed to complete this action prior to commercial operation.

Based on our review and the commitment to resolve this item, we find that the licensee has committed to a program for implementing plant-specific technical guidelines that contain adequate technical basis.

## B. Writers' Guide

The licensee committed to revise the Writers' Guide and EOPs and to implement corrective actions in a phased program, significant items being corrected by December 12, 1986 and all other items by the end of the first refueling outage.

On October 1, 1986, the licensee submitted a revised Writers' Guide addressing our concerns. The licensee subsequently applied the revised Writers' Guide to the EOPs to identify and correct significant deficiencies. Our audit of the revised EOPs indicates that the following need to be corrected.

1. Because of the interaction of the hierarchical numbering scheme used in the applicant's procedures and other rules of usage and format, there occur certain constructions which could be misleading under the stressful conditions of an emergency.

Example:

- ° In EPP-002 the following construction exists in the Response Not Obtained (RNO) column for steps 1.a and 1.b.

### 1. Check RCP Seal Isolation Status:

- a. All RCP seal injection outside CNMT isolation valves - SHUT:

ICS-341  
ICS-382  
ICS-423

- b. RCP thermal barrier CCW return outside CNMT isolation valve ICC-251 - SHUT

- a. Check CSIP status:

- 1) IF CSIP running, THEN GO TO Step 2.
- 2) Shut all isolation valves. Do NOT start a CSIP unless all valves are shut.

- b. Check CCW pump status:

- 1) IF CCW pump running, THEN GO TO Step 2.
- 2) Shut ICC-251 OR ICC-249.

It is possible that this construction could lead an operator to believe that he is being directed to continue with step 2) below step 1) in the RNO column. The actual intent is that the operator turn the page and go to step 2 in the left column.

By letter dated December 23, 1986, the licensee agreed to correct this error prior to exceeding 5% power and to review for potentially misleading constructions and revise them as necessary to clarify the intended actions prior to startup of the second fuel cycle.

2. In the Path 1 Procedure we noticed an instance where a conditional statement followed an action statement. This is poor practice because a hurried operator may take the action, e.g., "reset containment spray and stop pumps" without fully reading the conditional statement, "when containment pressure decreases below 10 PSIG". The emergency procedures should be reviewed for other instances where conditional statements follow action statements and all such instances should be corrected. By letter dated December 23, 1986, the licensee committed to correct this identified item prior to exceeding 5% power, and to complete this action prior to startup of the second fuel cycle.

Based on our review and the commitment to correct the two items discussed above, we conclude that the Writer's Guide provides information for developing EOPs from the P-STGs, which are usable, accurate, complete, readable, convenient to use, and acceptable to control room personnel for full power operation.

#### C. Verification and Validation (V+V) Program

As stated in our SER, we conclude that the licensee has committed to conduct activities which meet the objectives of a V+V program. The licensee has committed to document its V+V process in a revision to the PGP by April 15, 1987. We find this commitment acceptable.

#### D. EOP Training Program

The licensee, by letter dated September 19, 1986, committed to provide information regarding the EOP training program consistent with the training information to be provided for the Writers' Guide. On October 1, 1986 the licensee provided additional information regarding the EOP training program. On the basis of our review, we conclude that the licensee has developed a training program that provides reasonable assurance that the operators have been trained prior to EOP implementation and that they will be capable of using the EOPs.

#### Conclusion

Based on our review and the licensee's commitments, we conclude that the PGP is acceptable for full power licensing.

Full implementation of the licensee's commitments regarding the requirements of Generic Letter 82-33 concerning Item I.C.1 of the TMI Task Action Plan and Item 7 of Supplement 1 to NUREG-0737 will be confirmed before the startup of the second fuel cycle.

#### 14. INITIAL TEST PROGRAM

##### Preoperational Test Program

By letter dated September 29, 1986, Carolina Power and Light (CP&L) listed preoperational tests that they proposed to be deferred until after fuel load. The NRC found it acceptable to defer these tests and documented test completion dates as a condition to the low-power license. On December 19, 1986, CP&L submitted a letter proposing that preoperational tests for three systems, the

Secondary Waste Treatment System, the Solid Waste Processing System, and the Radiation Monitor Computer, be deferred until after full power licensing. CP&L, in this same letter, specified the alternatives proposed to compensate for the unavailability of these systems. In a supplemental letter dated December 29, 1986, CP&L provided an update on the status of alternative measures and stated that the proposed license conditions were satisfied.

CP&L noted that all components of the Secondary Waste Treatment System had been functionally tested, but that the secondary waste evaporator package had exhibited greater-than-normal motion and vibration during testing. CP&L has not yet determined an appropriate solution to the vibration and has therefore proposed an alternative to operation of this system.

CP&L proposed that low-conductivity wastes, such as backflush from the electromagnetic filters from the steam generator blowdown system, the backwash water from the condensate polishing system and industrial waste sumps be filtered, passed through a demineralizer and collected in secondary waste sample tanks. Based on the results of the analyses of the water in the sample tanks, the water would be recycled to the condensate storage tank, discharged to the cooling tower blowdown, or the neutralization basin, or recycled to the low conductivity storage tanks.

CP&L proposed that high conductivity wastes, such as regenerant solutions from the condensate polishing system and turbine building acid and caustic sumps, be collected in the high conductivity holding tank and processed by an evaporator if radioactivity is detected. The evaporator distillate would be discharged to the low-conductivity system upstream of the demineralizer. CP&L noted that radioactivity will only be present in the high conductivity process stream if there is a primary to secondary leak. CP&L also noted that this fluid stream could be diverted to the floor drain system, which has excess capacity, including four 25,000-gallon storage tanks, since it was designed for two units. CP&L proposed that the floor drain system would provide an equivalent means of processing and reducing liquid radioactive effluents to levels that are as-low-as-reasonably achievable in accordance with Appendix I to 10 CFR Part 50.

Our evaluation shows that CP&L's proposal provides a reasonable alternative to the full operation of the Secondary Waste Treatment system as described in the FSAR and will provide suitable methods of processing of liquids and controlling and monitoring releases of liquid effluents and therefore is acceptable and no license condition is necessary.

By letter dated December 19, 1986, CP&L noted that all components of the Solid Waste Processing system, which consists of a subsystem designed to process wet solid wastes and a subsystem that consists of volume reduction and polymer binding systems, have required significant time to complete and preoperationally test. CP&L proposed as an alternative to the operation of these systems, the solidification of wastes by an outside vendor service, which is a program widely used in the industry. CP&L noted that use of such a system was noted in the Harris Plant Process Control Program submitted previously to the NRC and evaluated in SSER #3. In a supplemental letter dated December 29, 1986, CP&L provided an update on the status of alternative measures and stated that the proposed license conditions were satisfied.

Our evaluation shows that CP&L's proposal provides a reasonable alternative to the Solid Waste Processing System as described in the FSAR and is therefore acceptable and that no license condition is necessary.

By letter dated December 19, 1986, CP&L noted that preoperational testing of the Radiation Monitor Computer showed a software problem that did not allow the data processors to transfer at times a specific piece of data. CP&L proposed, as an alternative to the operation of the four system processors, to route all monitors requiring surveillance by Technical Specifications to a data processor located either in the Control Room or in the liquid waste process control room. CP&L proposed to establish a readout in the Control Room for the monitors located in the waste process control room. In a supplemental letter dated December 29, 1986, CP&L provided an update on the status of alternative measures and stated that the proposed license conditions were satisfied.

Our evaluation shows that CP&L's proposal provides a reasonable alternative to full operation of the Radiation Monitor Computer in that it provides readout of all Technical Specification monitors in the Control Room and therefore is acceptable and that no license condition is necessary.

#### 15.9 TMI Action Plan Requirements

##### 15.9.9 II.K.3.5, Automatic Trip of RCPs During LOCA

#### SUMMARY

In Generic Letter 85-12 dated June 28, 1985, the NRC stated that the information provided by the Westinghouse Owners Group (WOG) in support of alternative Reactor Coolant Pump (RCP) trip was acceptable on a generic basis. The review noted that a number of considerations were assigned plant-specific status. Accordingly, we requested that operating reactor licensees select and implement an appropriate RCP trip criterion based upon the WOG methodology. This Safety Evaluation Report (SER) contains the staff's findings concerning this issue for Carolina Power & Light Company's Shearon Harris, Unit 1, and supplements the previous discussion contained in SSER 4.

Generic Letter 85-12 required owners of Westinghouse Nuclear Steam Generating Systems to evaluate their plants with respect to RCP trip. The objective was to demonstrate that their proposed RCP trip setpoints assure pump trip for small break LOCAs, and in addition provide reasonable assurance that RCPs are not tripped unnecessarily during non-LOCA events. A number of plant specific items were identified which were to be considered by applicants and licensees including the selected RCP trip parameter, instrumentation quality and redundancy, instrumentation uncertainty, possible adverse environments, calculational uncertainty, potential RCP and RCP associated problems, operator training, and operating procedures.

By letter dated December 5, 1986, the licensee addressed Generic Letter 85-12 criteria and we have evaluated this information. We find the material submitted by the licensee to be acceptable and find that the licensee has satisfied the requirements in regard to TMI Action Item II.K.3.5.

## 16. TECHNICAL SPECIFICATIONS

By letters dated December 9, and December 19, 1986, the licensee submitted proposed changes to improve the Technical Specifications. These improvements included the transfer of several issues, traditionally included in Technical Specifications, to other documents. The staff has reviewed the proposed changes and has accepted most of them as detailed in the following evaluations. The other proposed changes that have not been included in the Shearon Harris Technical Specifications may be resubmitted with additional technical bases for further staff review.

### Index

Page XV - Corrects two page numbers on Page XV of the Index.

The staff finds this Technical Specification (TS) improvement to be administrative and acceptable.

### Figure 2.1-1, "REACTOR CORE SAFETY LIMITS - THREE LOOPS IN-OPERATION"

Figure 2.1-1 would be changed to slightly increase the area of acceptable operation.

The original calculations contained a temperature assumption for setpoint calculations that was not sufficiently conservative. To account for this, the area of acceptable operation was slightly increased instead of recalculating setpoints and potentially affected analyses. The increase in acceptable operation was achieved by utilizing 1.8% of the generic DNRR margin. The generic DNBR margin is 9.1% of which 2.3% is used for rod bow penalty. The licensee will put in the FSAR this and any use of the generic DNBR margin.

The staff finds that utilizing 1.8% of the generic DNBR margin to increase the area of acceptable operation to account for the temperature assumption problem is acceptable. Documentation in the FSAR of the use of the generic DNBR margin is also acceptable.

### Table 2.2-1 NOTE 1 Reactor Trip System Instrumentation Setpoints

Adds a subscript "3" to the last "k" in the equation.

The staff finds this TS improvement to be administrative and acceptable.

### Table 2.2-1, "REACTOR TRIP SYSTEM INSTRUMENTATION TRIP SETPOINTS"

For the overtemperature delta T trip setpoint, the allowable difference between the computed trip setpoint and a channel's maximum trip setpoint is being increased from 1.0% to 1.9% delta T span.

The licensee has found that instrument drift is of a magnitude such that the 1.0% allowable difference is difficult to maintain between surveillance intervals. To address this, the nominal setpoint,  $K_1$ , in the overtemperature delta T trip setpoint equation has been decreased from 1.1 to 1.09 and the total allowance has been increased from 7.8 to 9.0. A few other changes for consistency were also made.

The staff finds that increasing the allowable difference by decreasing  $K_1$ , and increasing the total allowance is acceptable.

#### 3/4.3.1 Reactor Trip System Instrumentation

Removes response times from the LCO of TS 3.3.1. This includes the removal of TS Table 3.3-2, "Reactor Trip System Instrumentation Response Times," which will be placed in the Final Safety Analysis Report (FSAR) and plant procedure PLP-106, "Technical Specification Equipment List Program."

The staff position is that elimination of response times from the LCO of 3.3.1 is acceptable as a TS simplification. Because the definition of OPERABLE includes response time, there is no relaxation of requirements by this change. The FSAR and PLP-106 are appropriate documents for the response time table. Therefore, the staff finds this TS improvement to be acceptable.

#### 3/4.3.2 Engineered Safety Feature Actuation System Instrumentation

Removes response times from the LCO of TS 3.3.2. This includes the removal of TS Table 3.3-5, "Engineered Safety Features Response Times," which will be placed in the FSAR and PLP-106.

The staff position is that elimination of response times from the LCO of 3.3.2 is acceptable as a TS simplification. Again, the definition of OPERABLE includes response time so there is no relaxation of requirements by this change. The FSAR and PLP-106 are appropriate documents for the response time table. Therefore, the staff finds this TS improvement to be acceptable.

#### Table 3.3-4 Item 9.b ESFAS Instrumentation Setpoints

Corrects a "less than" sign to a "less than or equal to" sign.

The staff finds this TS improvement to be administrative and acceptable.

#### 3/4.4.9.2 Reactor Coolant System

Modifies the TS Action Statement to avoid ambiguity. The statement, "With any of the pressure limits on Figure 3.4-2 and 3.4-3 exceeded, for the cooldown and heatup rates shown on Table 4.4-6," should read "With any of the above limits exceeded." The staff finds that this TS improvement clarifies the Action Statement and is acceptable.

#### 3/4.4.9.2 Reactor Coolant System

Removal of surveillance requirement (SR) 4.4.9.2.2 regarding reactor vessel material irradiation surveillance specimens from TS. This includes the removal of TS Table 4.4-5, "Reactor Vessel Material Surveillance Program - Withdrawal Schedule."

SR 4.4.9.2.2 does not include any requirements not already incorporated into 10 CFR 50, Appendix H. Also, this requirement, including the withdrawal schedule, will be reflected in the FSAR and PLP-106. The results of these examinations will be used to update TS figures 3.4-2 and 3.4-3 when required. Therefore, the staff finds this TS improvement to be acceptable.

#### 3/4.6.2.1 Containment Spray System

The licensee proposed to modify this surveillance requirement (SR) 4.6.2.1 from 1832 gpm at 195 psi differential pressure to 1832 gpm at 186 psi differential to allow additional operating margin in the event of pump degradation. The licensee obtained this additional margin by revising the assumptions for the most limiting case of the containment analysis. The staff reviewed the licensee's assumptions and methodology and found them acceptable. The licensee has verbally committed to incorporate the results of the revised analysis into FSAR Appendix 6.2.B. This will provide an opportunity for future staff reference and review of the analysis. Therefore, the staff finds this TS improvement acceptable.

#### 3/4.6.3 Containment Isolation Valves

Removes TS Table 3.6-1, "Containment Isolation Valves" and places it in the FSAR and PLP-106. This change includes administrative changes to TS 3/4.6.3 to reflect the Table removal.

The TS LCO and SR are not changed by removal of this Table and the provisions of 10 CFR 50.59 will provide adequate opportunity for review of changes to the information contained in the Table by the staff. Therefore, the staff finds this TS improvement to be acceptable.

#### 3/4.7.1.5 Main Steam Line Isolation Valves

Changes the Modes 2 and 3 action statement applicability to Modes 2, 3, and 4 in TS 3.7.1.5.

The staff finds this TS improvement to be clarifying in nature and is acceptable.

#### 3/4.7.8 Snubbers

Removal of the augmented inservice inspection program for snubbers from SR 4.7.8, including removal of TS Figure 4.7-1, "Sample Plan 2 for Snubber Functional Test," and placing them into the FSAR and PLP-106.

The TS requirement to perform the augmented inservice inspection program for snubbers is not changed nor is the program itself changed by this action. Therefore, the staff finds this TS improvement to be acceptable.

#### 3/4.8.4.1 Containment Penetration Conductor Overcurrent Protective Devices

Removes TS Table 3.8-1, "Containment Penetration Conductor Overcurrent Protective Devices" and places it in the FSAR and PLP-106. This change includes administrative changes to TS 3/4.8.4.1 to reflect the Table removal.

The TS LCO and SR are not changed by removal of this Table and the provisions of 10 CFR 50.59 will provide adequate opportunity for review of changes to the information contained in the Table by the Staff. Therefore, the staff finds this TS improvement to be acceptable.

#### 3/4.8.4.2 Motor-Operated Valves Thermal Overload Protection

Removes TS Table 3.8-2, "Motor-Operated Valves Thermal Overload Protection" and places it in the FSAR, and PLP-106. This change includes administrative changes to TS 3/4.8.4.2 to reflect the Table removal.

The TS LCO and SR are not changed by removal of this Table and the provisions of 10 CFR 50.59 will provide adequate opportunity for review of changes to the information contained in the Table by the Staff. Therefore, the staff finds this TS improvement to be acceptable.

#### Bases 3/4.5.1 Accumulators

Corrects the maximum indicated level for accumulators to 96% from 97%.

The staff finds this TS improvement is consistent with TS Limiting Condition for Operation (LCO) 3.5.1 and is acceptable.

#### 6.0 ADMINISTRATIVE CONTROLS

Add the "Technical Specification Equipment List Program" (PLP-106) to the Administrative Controls Section of TS.

These changes provide the appropriate and necessary administrative controls for PLP-106. Therefore, the staff finds this TS improvement to be acceptable.

#### Figure 6.2-1 OFFSITE ORGANIZATION

Changes the title of "General Manager Milestone Completion" to "General Manager Projects" and deletes the position "General Manager Engineering" which was located onsite during construction.

The title of "General Manager Projects" is better suited to an operating organization and is acceptable to the staff. The engineering function that was under the "General Manager Engineering" is being split with the majority going offsite to the "Vice President Nuclear Engineering and Licensing." The remaining engineering function will remain onsite as a technical staff reporting to the "General Manager Projects." The staff finds this change to be appropriate for an operating organization and therefore, this TS improvement is acceptable.

#### 6.3 UNIT STAFF QUALIFICATIONS

Delete TS 6.3 in its entirety.

The FSAR and the staff's Safety Evaluation Report (SER) provide acceptable criteria to be used by the licensee. The provisions of 10 CFR 50.59 will provide adequate opportunity for review by the staff of changes to the criteria. Therefore, the staff finds this TS improvement to be acceptable.

6.8.4 PROCEDURES AND PROGRAMS

Adds an item to the list of primary coolant sources outside containment. The added item is the portion of the filter backwash system that services the "A" and "B" reactor coolant pump seal injection filters.

This TS improvement reflects an addition to the leak reduction program made in FSAR Amendment No. 36. The staff finds that it is both correct and conservative to make this TS improvement; therefore, it is acceptable.

Dated: January 12, 1987

Table 1.2 Outstanding issues

Item	Status	Section(s)
(1) Design of retaining wall	Resolved	2.5.5
(2) Missiles outside containment	Resolved	3.5.1.1
(3) Functional capability of Class 1 auxiliary piping systems	Resolved	3.9.3
(4) Control of minimum wall thickness in ASME Class 1, 2, and 3 piping systems	Resolved	3.9.3
(5) Equipment qualification	Resolved	3.10 3.11
(6) Preservice/Inservice Inspection Program	Changed to Confirmatory Issue 34	5.2.4, 6.6
(7) Periodic testing of instrument air quality	Resolved	9.3.1
(8) Fire protection	Resolved	9.5.1
(9) Unmonitored release of condenser discharge during hogging operations	Resolved	10.4.2, 11.5
(10) Method of estimating noble gas activity from atmospheric steam dump valves	Resolved	10.4.2, 11.5
(11) Monitoring of all inputs to the service water system	Resolved	11.5
(12) Emergency preparedness	Resolved	13.3
(13) Steam generator tube rupture isolation time	Changed to Confirmatory Issue 36	15.6.3
(14) TMI Action Plan Items (NUREG-0737 and Supplement No. 1 to NUREG-0737)		
I.A.1.2	Shift supervisor administrative duties	Resolved 13.5.1
I.C.2	Shift and relief turnover procedures	Resolved 13.5.1
I.C.3	Shift supervisor responsibilities	Resolved 13.5.1

Table 1.2 (Continued)

Item		Status	Section(s)
I.C.4	Control room access	Resolved	13.5.1
I.C.5	Feedback of operating experience	Resolved	13.5.1
I.C.6	Verification of correct performance of operator activities	Resolved	13.5.1
I.D.1	Control room design review	Resolved	18
II.E.1.1	Auxiliary feedwater system reliability evaluation	Resolved	10.4.9
II.F.2	ICC instrumentation	Resolved	4.4.6
III.A.1.2	Emergency support facilities	Resolved	13.3.4
III.D.1.1	Leak reduction program	Resolved	9.3.5

Table 1.3 Confirmatory issues

Issue	Status	Section(s)
(1) Emergency plan meteorological program	Resolved	2.3.3
(2) Revision of FSAR Table 3.2.1-1	Resolved	3.2.2
(3) Turbine missiles (see License Condition 1)	Resolved	3.5.1.3
(4) Design documentation of ASME components	Resolved	3.9.3.1
(5) Piping supports	Resolved	3.9.2
(6) Plant-specific submittal concerning testing of safety and relief valves	Resolved	3.9.3.2
(7) Leak rate test program for pressure isolation valves	Resolved	3.9.6
(8) Calculation of ultimate strength capacity of containment building under uniform internal pressure	Resolved	3.8
(9) Additional information on excore detectors	Resolved	4.3
(10) PORV setpoint values	Resolved	5.2.2
(11) Revised pressure-temperature curves	Resolved	5.3.2
(12) Examination of steam generators and NUREG-1014 revisions	Resolved	5.4.2.2
(13) Revision of FSAR on containment penetrations	Resolved	6.2.4
(14) Additional information on adequacy of the ECCS during shutdown and startup	Resolved	6.3.5.1
(15) Design modifications for automatic reactor trip using shunt coil trip attachment	Resolved	7.2.2.4
(16) Solid-state logic protection system test circuit	Resolved	7.3.3.11
(17) Testing for remote shutdown operation	Resolved	7.4.2.2
(18) RCS overpressure protection during low temperature operation	Resolved	7.6.2.2

Table 1.3 (Continued)

Issue	Status	Section(s)
(19) Adequacy of station electrical distribution	Resolved	8.4.2.3
(20) Use of load sequencer with offsite power	Resolved	8.4.7
(21) Compliance with Phase I and Phase II of NUREG-0612	Resolved	9.1.5
(22) Pressure differential alarms	Resolved	9.4.5.2
(23) Emergency lighting	Resolved	9.5.3
(24) Radiation monitors for turbine building vent stack	Resolved	10.4
(25) Ability to continuously sample radiiodine and particulates (condenser vacuum pump effluent)	Resolved	10.4.2
(26) Location of high range noble gas monitors (turbine building vent)	Resolved	10.4.2, 10.4.3, 11.5
(27) Drawings for the filters handling sludge	Resolved	11.4.1
(28) Process Control Program	Resolved	11.4.1
(29) Polymer binder system	Resolved	11.4.1
(30) Radiation protection manager	Resolved	12.5
(31) Corporate management and technical support organization	Resolved	13.1.1.6
(32) Initial test program	Resolved	14
<ul style="list-style-type: none"> <li>• Additional testing to verify the capacity of the steam generator safety and relief valves</li> <li>• Amend FSAR to incorporate additional information on AWP endurance tests</li> <li>• Expansion of natural circulation tests to fully comply with NUREG-0737, Item I.G.1</li> </ul>		

Table 1.3 (Continued)

Issue	Status	Section(s)
(33) TMI Action Plan Items (NUREG-0737)		
I.C.7 NSSS vendor review process	Resolved	13.5.2.3
II.K.3.5 Automatic trip of RCPs during LOCA	Resolved	15.9.9
(34) Preservice/Inservice Inspection Program	Resolved	5.2.4, 6.6
(35) Emergency preparedness	Resolved	13.3
(36) Steam generator tube rupture isolation time	Resolved*	15.6.3

\*See License Condition 10.

Table 1.4 License conditions

License condition	Status	Section(s)
(1) Turbine system maintenance program	Deleted	3.5.1.3
(2) Turbine steam valve maintenance	Deleted	3.5.1.3
(3) II.B.3, Postaccident sampling system	Deleted	9.3.2
(4) Processing of filter sludge in VR system	Deleted	
(5) Operating experience		13.1.2.4
(6) Security plan adherence to regulations	Deleted	
(7) Restriction above 90% power	Deleted	15.4.3, 4.3
(8) II.F.2, Instrumentation for inadequate core cooling detection	Deleted	4.4.6
(9) Physical security		13.6.3
(10) Steam generator tube rupture		15.6.3
(11) Safety parameter display system		18.2
(12) Control room survey		18.1
(13) Diesel generator		8.3.1
(14) Fire protection		9.5.1

APPENDIX A

CONTINUATION OF CHRONOLOGY OF NRC STAFF RADIOLOGICAL REVIEW  
OF SHEARON HARRIS

March 4, 1986	Letter from licensee on 10 CFR 50 Appendix E exemption request.
May 2, 1986	Letter from licensee on 10 CFR 50 Appendix E exemption request.
June 10, 1986	Letter from licensee on 10 CFR 50 Appendix E exemption request.
July 10, 1986	Letter from licensee on 10 CFR 50 Appendix E exemption request.
September 16, 1986	Letter from licensee on fire protection.
September 29, 1986	Letter from licensee on preoperational test program.
October 1, 1986	Letter from licensee on procedures generation package.
October 28, 1986	Letter from licensee on 10 CFR 50 Appendix E exemption request.
November 21, 1986	Letter from licensee on fire protection.
November 25, 1986	Letter from licensee on Transamerica Delaval (TDI) diesel generators.
December 2, 1986	Letter from licensee on Transamerica Delaval (TDI) diesel generators.
December 5, 1986	Letter from licensee on reactor coolant pump trip criteria.
December 9, 1986	Letter from licensee on full power Technical Specifications.
December 19, 1986	Letter from licensee on full power Technical Specifications.
December 19, 1986	Letter from licensee on preoperational test program.
December 23, 1986	Letter from licensee on procedures generation package.
December 29, 1986	Letter from licensee on preoperational test program.

APPENDIX N

ERRATA

SSER 3  
Page

LINE

CHANGE

9-6

10, 11, 12, 13

Change "At least one safety bus will be available in the event of a fire in any one of the areas described above. In that case, at least one channel of instrumentation shown above will be available for use in safety shutting the plant down after a fire." to "In that case, at least one channel of instrumentation shown above or an acceptable alternative, for example, steam generator pressure, will be available for use in safely shutting the plant down in the event of a fire and loss of T-cold instrumentation."

UNITED STATES NUCLEAR REGULATORY COMMISSION  
SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1  
DOCKET NO. 50-400  
NOTICE 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).

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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 (52 FR 713, dated January 8, 1987).

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.

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 12th day of January, 1987.

FOR THE NUCLEAR REGULATORY COMMISSION

  
Daniel G. McDonald, Acting Director  
PWR Project Directorate #2  
Division of PWR Licensing-A  
Office of Nuclear Reactor Regulation



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

Docket No. 50-400

AMENDMENT TO INDEMNITY AGREEMENT NO. B-103  
AMENDMENT NO. 2

Effective Jan. 12, 1987, Indemnity Agreement No. B-103, between Carolina Power and Light Company and North Carolina Eastern Municipal Power Agency and the Nuclear Regulatory Commission, dated October 28, 1985, as amended, is hereby further amended as follows:

Item 3 of the Attachment to the indemnity agreement is deleted in its entirety and the following substituted therefor:

Item 3 - License number or numbers

SNM-1939	(From 12:01 a.m., October 28, 1985 to 12 midnight, October 23, 1986 inclusive)
NPF-53	(From 12:01 a.m., October 24, 1986 to 12 midnight, January 11, 1987 inclusive)
NPF-63	(From 12:01 a.m., January 12, 1987 )

FOR THE U. S. NUCLEAR REGULATORY COMMISSION

A handwritten signature in cursive script that reads "Darrel A. Nash".

Darrel A. Nash, Acting Assistant Director  
State and Licensee Relations  
Office of State Programs

Accepted \_\_\_\_\_, 1986

Accepted \_\_\_\_\_, 1986

By \_\_\_\_\_  
CAROLINA POWER AND LIGHT COMPANY

By \_\_\_\_\_  
NORTH CAROLINA EASTERN  
MUNICIPAL POWER AGENCY



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

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FOR THE U. S. NUCLEAR REGULATORY COMMISSION

A handwritten signature in cursive script, appearing to read "Darrel A. Nash", written over a horizontal line.

Darrel A. Nash, Acting Assistant Director  
State and Licensee Relations  
Office of State Programs

Accepted \_\_\_\_\_, 1986

Accepted \_\_\_\_\_, 1986

By \_\_\_\_\_  
CAROLINA POWER AND LIGHT COMPANY

By \_\_\_\_\_  
NORTH CAROLINA EASTERN  
MUNICIPAL POWER AGENCY



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
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FOR THE U. S. NUCLEAR REGULATORY COMMISSION

  
\_\_\_\_\_  
Darrel A. Nash, Acting Assistant Director  
State and Licensee Relations  
Office of State Programs

Accepted \_\_\_\_\_, 1986

Accepted \_\_\_\_\_, 1986

By \_\_\_\_\_  
CAROLINA POWER AND LIGHT COMPANY

By \_\_\_\_\_  
NORTH CAROLINA EASTERN  
MUNICIPAL POWER AGENCY