

March 28, 2003

Mr. James Scarola, Vice President  
Shearon Harris Nuclear Power Plant  
Carolina Power & Light Company  
Post Office Box 165, Mail Code: Zone 1  
New Hill, North Carolina 27562-0165

SUBJECT: SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1 - ISSUANCE OF  
AMENDMENT RE: ADDITION OF METHODOLOGY REFERENCES TO CORE  
OPERATING LIMITS REPORT (TAC NO. MB6226)

Dear Mr. Scarola:

The Nuclear Regulatory Commission (NRC) has issued Amendment No. 114 to Facility Operating License No. NPF-63 for the Shearon Harris Nuclear Power Plant, Unit 1 (HNP). This amendment changes the Technical Specifications (TS) in response to your application dated August 28, 2002, as supplemented by letter dated November 21, 2002.

The amendment approves topical report EMF-2328 (P)(A), "PWR Small Break LOCA Evaluation Model, S-RELAP5 Based" as reference in the TS to allow the licensee to update the methodologies that are used for safety analyses for the HNP. Also, the amendment relocates referenced methodologies within TS 6.9.1.6.2 to group mechanical design methodologies together. The relocated methodologies are: XN-NF-81-58 (P)(A), ANF-81-58 (P)(A), XN-NF-82-06 (P)(A), ANF-88-133 (P)(A), XN-NF-85-92 (P)(A), and EMF-92-116 (P)(A).

Our review of topical report EMF-2310 (P)(A), "SFP Chapter 15 Non-LOCA Methodology for Pressurized Water Reactors," will be addressed at a later date under separate correspondence.

A copy of the related Safety Evaluation is enclosed. Notice of Issuance will be included in the Commission's regular bi-weekly Federal Register notice.

Sincerely,

*/RA/*

Chandu P. Patel, Project Manager, Section 2  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-400

Enclosures:

1. Amendment No. 114 to NPF-63
2. Safety Evaluation

cc w/enclosures: See next page

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Distribution: See attached list

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\*See previous concurrence

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OFFICIAL RECORD COPY

AMENDMENT NO. 114 TO FACILITY OPERATING LICENSE NO. NPF-63 - HARRIS, UNIT 1

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CAROLINA POWER & LIGHT COMPANY, et al.

DOCKET NO. 50-400

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 114  
License No. NPF-63

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Carolina Power & Light Company, (the licensee), dated August 28, 2002, as supplemented on November 21, 2002, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment 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;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications, as indicated in the attachment to this license amendment; and paragraph 2.C.(2) of Facility Operating License No. NPF-63 is hereby amended to read as follows:

(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, as revised through Amendment No. 114, 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. This license amendment is effective as of the date of its issuance and shall be implemented within 60 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

*/RA/*

Allen G. Howe, Chief, Section 2  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: March 28, 2003

ATTACHMENT TO LICENSE AMENDMENT NO. 114

FACILITY OPERATING LICENSE NO. NPF-63

DOCKET NO. 50-400

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove Pages

6-24a  
6-24b  
6-24c

Insert Pages

6-24a  
6-24b  
6-24c

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 114 TO FACILITY OPERATING LICENSE NO. NPF-63  
CAROLINA POWER & LIGHT COMPANY  
SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1  
DOCKET NO. 50-400

## 1.0 INTRODUCTION

By letter dated August 28, 2002, as supplemented by letter dated November 21, 2002, the Carolina Power & Light Company (CP&L, the licensee) submitted a request for changes to the Shearon Harris Nuclear Power Plant, Unit 1 (HNP) Technical Specifications (TS). The requested changes would add topical reports EMF-2310 (P)(A), "SRP Chapter 15 Non-LOCA [Loss-of-Coolant Accident] Methodology for Pressurized Water Reactors" (Reference 2), and EMF-2328 (P)(A), "PWR [Pressurized-Water Reactor] Small Break LOCA Evaluation Model, S-RELAP5 Based" (Reference 3), as references in the TS to allow the licensee to update the methodologies that are used for safety analyses for HNP. The U.S. Nuclear Regulatory Commission (NRC) previously approved both topical reports for Framatome ANP, Inc. Also, the licensee proposed to relocate referenced methodologies within TS 6.9.1.6.2 to group mechanical design methodologies together. The relocated methodologies are: XN-NF-81-58 (P)(A), ANF-81-58 (P)(A), XN-NF-82-06 (P)(A), ANF-88-133 (P)(A), XNF-NF-85-92 (P)(A), and EMF-92-116 (P)(A).

The NRC staff's safety evaluation that approved use of Topical Report EMF-2310 (P)(A) states that the individual applicant must provide justification for the specific application of the code. However, from recent correspondence with FRA-ANP, the NRC staff has concluded that additional guidance may be necessary for the licensee to implement the topical report for HNP. Therefore, the request for use of this topical report will be reviewed at a later date under separate correspondence. This safety evaluation addresses Topical Report EMF-2328(P)(A) and the relocation of the above mentioned methodologies.

The November 21, 2002, letter provided clarifying information only and did not change the initial proposed no significant hazards consideration determination or expand the scope of the initial application.

## 2.0 REGULATORY EVALUATION

TS 6.9.1.6 provides information regarding the Core Operating Limits Report (COLR). HNP Plant Procedure PLP-106, "Technical Specification Equipment List Program and Core Operating Limits Report," implements the cycle-specific core parameter limits. TS 6.9.1.6.2 requires that the analytical methods used to determine the PLP-106 core operating limits shall

be those previously reviewed and approved by the NRC at the time the licensee performs the reload analyses, and that the approved revision number shall be identified in the COLR.

#### Topical Report EMF-2328 (P)(A)

In a letter dated January 10, 2000 (Reference 6), FRA-ANP also submitted topical report EMF-2328 (P)(A), "PWR Small Break LOCA Evaluation Model, S-RELAP5 Based" (Reference 3), to the NRC for review and approval. FRA-ANP requested approval of the application of S-RELAP5 to the small-break LOCA in Westinghouse and Combustion Engineering PWRs. The NRC staff concluded that the S-RELAP5 code is capable of performing an integrated calculation of a small-break LOCA for the mentioned PWRs. In the approval letter to FRA-ANP dated March 15, 2001 (Reference 7), the NRC permitted the use of EMF-2328 (P) for Westinghouse and Combustion Engineering PWRs.

The NRC staff's safety evaluation for EMF-2328 (P) (Reference 7) noted that there was a condition imposed on the use of the ANF-RELAP code that still applies to the use of S-RELAP5. Specifically, if the licensee uses the code for break sizes larger than 10 percent of the cold leg flow area, additional assessments must be performed to ensure that the code predicts the important phenomena that may occur. The licensee's application of the code in regard to break sizes is discussed in Section 3.0 below.

### 3.0 TECHNICAL EVALUATION

Shearon Harris is a three loop Westinghouse PWR. To use EMF-2328 (P)(A), the licensee stated in Reference 8 that it intends to use the EMF-2328(P)(A) methodology strictly within the limitations imposed on the use of that methodology by the NRC, including the limitation to use it for break sizes only up to 10 percent of the cold leg flow area. Therefore, additional assessments would not be necessary. The NRC staff finds the licensee's request acceptable because it meets the conditional requirements for the use of EMF-2328 (P)(A) methodology for HNP.

The relocation of the six methodologies is also found to be acceptable since their location within TS 6.9.1.6.2 does not change their applicability to HNP.

Based on the above information, the NRC staff approves CP&L's inclusion of topical report EMF-2328 (P)(A), along with the relocation of XN-NF-81-58 (P)(A), ANF-81-58 (P)(A), XN-NF-82-06 (P)(A), ANF-88-133 (P)(A), XN-NF-85-92 (P)(A), and EMF-92-116 (P)(A) in the TS.

### 4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the State of North Carolina official was notified of the proposed issuance of the amendment. The State official had no comments.

### 5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no

significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (67 FR 63691). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

## 6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

## 7.0 REFERENCES

1. Letter from J. Scarola, Carolina Power & Light Company, to U.S. Nuclear Regulatory Commission, "Shearon Harris Nuclear Power Plant, Docket No. 50-400/License No. NPF-63, Request for License Amendment, Addition of Methodology References to Core Operating Limits Report," August 28, 2002.
2. EMF-2310 (P)(A), "SRP Chapter 15 Non-LOCA Methodology for Pressurized Water Reactors," Framatome ANP, Inc. (formerly Siemens Power Corporation (SPC)), November 1999.
3. EMF-2328 (P)(A), "PWR Small Break LOCA Evaluation Model, S-RELAP5 Based," Framatome ANP, Inc. (formerly SPC), January 2000.
4. Letter from J.F. Mallay, Framatome ANP, Inc. (formerly SPC), to U.S. Nuclear Regulatory Commission, "Request for Review of EMF-2310(P) Revision 0, 'SRP Chapter 15 Non-LOCA Methodology for Pressurized Water Reactors'," November 22, 1999.
5. Letter from S.A. Richards, U.S. Nuclear Regulatory Commission, to J.F. Mallay, Framatome ANP, Inc. (formerly SPC), "Acceptance for Referencing of Licensing Topical Report EMF-2310(P), Revision 0, 'SRP Chapter 15 Non-LOCA Methodology for Pressurized Water Reactors'," May 11, 2001.
6. Letter from J.F. Mallay, Framatome ANP, Inc. (formerly SPC), to U. S. Nuclear Regulatory Commission, "Request for Review of EMF-2328(P) Revision 0, 'PWR Small Break LOCA Evaluation Model, S-RELAP5 Based'," January 10, 2000.
7. Letter from S.A. Richards, U.S. Nuclear Regulatory Commission, to J.F. Mallay, Framatome ANP, Inc. (formerly SPC), "Acceptance for Referencing Topical Report EMF-2328(P), Revision 0, 'PWR Small Break LOCA Evaluation Model, S-RELAP5 Based'," March 15, 2001.

8. Letter from J. Scarola, Carolina Power & Light Company, to U.S. Nuclear Regulatory Commission, "Shearon Harris Nuclear Power Plant, Docket No. 50-400/License No. NPF-63, Request for Additional Information (RAI) on Amendment Application Regarding Addition of Methodology References to the Core Operating Limits Report," November 21, 2002.

Principal Contributor: V. Klein, SRXB

Date: March 28, 2003

Mr. James Scarola  
Carolina Power & Light Company

Shearon Harris Nuclear Power Plant  
Unit 1

cc:

Mr. William D. Johnson  
Vice President and Corporate Secretary  
Carolina Power & Light Company  
Post Office Box 1551  
Raleigh, North Carolina 27602

Mr. Robert J. Duncan II  
Director - Site Operations  
Carolina Power & Light Company  
Shearon Harris Nuclear Power Plant  
Post Office Box 165, Mail Zone 1  
New Hill, North Carolina 27562-0165

Resident Inspector/ Harris NPS  
c/o U. S. Nuclear Regulatory Commission  
5421 Shearon Harris Road  
New Hill, North Carolina 27562-9998

Mr. Robert P. Gruber  
Executive Director  
Public Staff NCUC  
4326 Mail Service Center  
Raleigh, North Carolina 27699-4326

Ms. Karen E. Long  
Assistant Attorney General  
State of North Carolina  
Post Office Box 629  
Raleigh, North Carolina 27602

Chairman of the North Carolina  
Utilities Commission  
Post Office Box 29510  
Raleigh, North Carolina 27626-0510

Public Service Commission  
State of South Carolina  
Post Office Drawer 11649  
Columbia, South Carolina 29211

Ms. Linda Coleman, Chairperson  
Board of County Commissioners  
of Wake County  
P. O. Box 550  
Raleigh, North Carolina 27602

Ms. Beverly Hall, Acting Director  
Division of Radiation Protection  
N.C. Department of Environment  
and Natural Resources  
3825 Barrett Drive  
Raleigh, North Carolina 27609-7721

Mr. Gary Phillips, Chairman  
Board of County Commissioners  
of Chatham County  
P. O. Box 87  
Pittsboro, North Carolina 27312

Mr. Terry C. Morton  
Manager  
Performance Evaluation and  
Regulatory Affairs CPB 7  
Carolina Power & Light Company  
Post Office Box 1551  
Raleigh, North Carolina 27602-1551

Mr. James W. Holt, Manager  
Support Services  
Carolina Power & Light Company  
Shearon Harris Nuclear Power Plant  
P. O. Box 165, Mail Zone 1  
New Hill, North Carolina 27562-0165

Mr. Benjamin C. Waldrep  
Plant General Manager - Harris Plant  
Carolina Power & Light Company  
Shearon Harris Nuclear Power Plant  
P. O. Box 165, Mail Zone 3  
New Hill, North Carolina 27562-0165

Mr. John R. Caves, Supervisor  
Licensing/Regulatory Programs  
Carolina Power & Light Company  
Shearon Harris Nuclear Power Plant  
P. O. Box 165, Mail Zone 1  
New Hill, NC 2756

Mr. John H. O'Neill, Jr.  
Shaw, Pittman, Potts & Trowbridge  
2300 N Street, NW.  
Washington, DC 20037-1128