



Carolina Power & Light Company
PO Box 165
New Hill NC 27562

James Scarola
Vice President
Harris Nuclear Plant

JAN 11 2000

SERIAL: HNP-00-003
10 CFR 50.90

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

SHEARON HARRIS NUCLEAR POWER PLANT
DOCKET NO. 50-400/LICENSE NO. NPF-63
REVISED TECHNICAL SPECIFICATION PAGES FOR LICENSE AMENDMENT
REQUEST - ADDITION OF METHODOLOGY REFERENCES TO CORE OPERATING
LIMITS REPORT

Dear Sir or Madam:

By letter dated August 4, 1999, Carolina Power & Light Company (CP&L) requested a revision to the Technical Specifications (TS) for the Harris Nuclear Plant (HNP) to incorporate analytical methodology references in TS 6.9.1.6.2 which are used to determine core operating limits. These analytical methodologies are documented in topical reports which have been accepted by the Nuclear Regulatory Commission (NRC) for referencing in licensing applications. By letter dated December 3, 1999, CP&L submitted a re-typed TS page.

CP&L has revised the affected TS pages for the subject license amendment request to incorporate the format for referencing approved Siemens Power Corporation topical reports in the TS. The specific revision number and date of the referenced topical reports are specified in the Core Operating Limits Report (COLR).

These changes do not affect the conclusions of either the 10CFR50.92 or the Environmental Considerations evaluations previously submitted.

Enclosure 1 provides page change instructions for incorporating the proposed revisions.

Enclosure 2 provides the proposed TS pages.

Please refer any questions regarding this submittal to Mr. J. H. Eads at (919) 362-2646.

Sincerely,

James Scarola

AEC

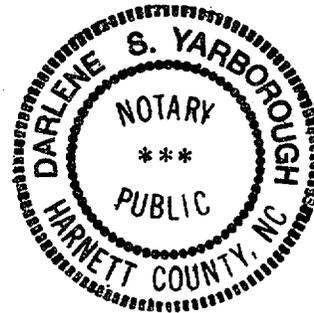
Enclosures:

1. Page Change Instructions
2. Technical Specification Pages

James Scarola, having been first duly sworn, did depose and say that the information contained herein is true and correct to the best of his information, knowledge and belief; and the sources of his information are employees, contractors, and agents of Carolina Power & Light Company.

Darlene S. Yaborough
Notary (Seal)

My commission expires: *2-6-2000*



c: Mr. J. B. Brady, NRC Sr. Resident Inspector
Mr. Mel Fry, Director, N.C. DEHNR
Mr. R. J. Laufer, NRC Project Manager
Mr. L. A. Reyes, NRC Regional Administrator

SHEARON HARRIS NUCLEAR POWER PLANT
NRC DOCKET NO. 50-400/LICENSE NO. NPF-63
REVISED TECHNICAL SPECIFICATION PAGES FOR LICENSE AMENDMENT
REQUEST - ADDITION OF METHODOLOGY REFERENCES TO
CORE OPERATING LIMITS REPORT

PAGE CHANGE INSTRUCTIONS

<u>Removed Page</u>	<u>Inserted Page</u>
6-24	6-24
6-24a	6-24a
6-24b	6-24b
6-24c	6-24c

Enclosure 2 to SERIAL HNP-00-002

SHEARON HARRIS NUCLEAR POWER PLANT
NRC DOCKET NO. 50-400/LICENSE NO. NPF-63
REVISED TECHNICAL SPECIFICATION PAGES FOR LICENSE AMENDMENT
REQUEST - ADDITION OF METHODOLOGY REFERENCES TO
CORE OPERATING LIMITS REPORT

TECHNICAL SPECIFICATION PAGES

6.9.1.6 CORE OPERATING LIMITS REPORT

6.9.1.6.1 Core operating limits shall be established and documented in the CORE OPERATING LIMITS REPORT (COLR), plant procedure PLP-106, prior to each reload cycle, or prior to any remaining portion of a reload cycle, for the following:

- a. SHUTDOWN MARGIN limits for Specification 3/4.1.1.2,
- b. Moderator Temperature Coefficient Positive and Negative Limits and 300 ppm surveillance limit for Specification 3/4.1.1.3,
- c. Shutdown Bank Insertion Limits for Specification 3/4.1.3.5,
- d. Control Bank Insertion Limits for Specification 3/4.1.3.6,
- e. Axial Flux Difference Limits for Specification 3/4.2.1,
- f. Heat Flux Hot Channel Factor, F_q^{RTP} , $K(Z)$, and $V(Z)$ for Specification 3/4.2.2,
- g. Enthalpy Rise Hot Channel Factor, $F_{\Delta H}^{RTP}$, and Power Factor Multiplier, $PF_{\Delta H}$ for Specification 3/4.2.3.
- h. Boron Concentration for Specification 3/4.9.1.

6.9.1.6.2 The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC at the time the reload analyses are performed, and the approved revision number shall be identified in the COLR.

- a. XN-75-27(P)(A), "Exxon Nuclear Neutronics Design Methods for Pressurized Water Reactors," approved version as specified in the COLR.
(Methodology for Specification 3.1.1.2 - SHUTDOWN MARGIN - MODES 3, 4 and 5, 3.1.1.3 - Moderator Temperature Coefficient, 3.1.3.5 - Shutdown Bank Insertion Limits, 3.1.3.6 - Control Bank Insertion Limits, 3.2.1 - Axial Flux Difference, 3.2.2 - Heat Flux Hot Channel Factor, 3.2.3 - Nuclear Enthalpy Rise Hot Channel Factor, and 3.9.1 - Boron Concentration).
- b. ANF-89-151(P)(A), "ANF-RELAP Methodology for Pressurized Water Reactors: Analysis of Non-LOCA Chapter 15 Events," approved version as specified in the COLR.
(Methodology for Specification 3.1.1.3 - Moderator Temperature Coefficient, 3.1.3.5 - Shutdown Bank Insertion Limits, 3.1.3.6 - Control Bank Insertion Limits, 3.2.1 - Axial Flux Difference, 3.2.2 - Heat Flux Hot Channel Factor, and 3.2.3 - Nuclear Enthalpy Rise Hot Channel Factor).
- c. XN-NF-82-21(P)(A), "Application of Exxon Nuclear Company PWR Thermal Margin Methodology to Mixed Core Configurations," approved version as specified in the COLR.
(Methodology for Specification 3.2.3 - Nuclear Enthalpy Rise Hot Channel Factor).

6.9.1.6 CORE OPERATING LIMITS REPORT (Continued)

- d. XN-75-32(P)(A), "Computational Procedure for Evaluating Fuel Rod Bowing," approved version as specified in the COLR.

(Methodology for Specification 3.2.2 - Heat Flux Hot Channel Factor, and 3.2.3 - Nuclear Enthalpy Rise Hot Channel Factor).
- e. Steam Line Break Methodology as defined by:

EMF-84-093(P)(A), "Steam Line Break Methodology for PWRs," approved version as specified in the COLR.

ANF-84-093(P)(A), "Steam Line Break Methodology for PWRs," approved version as specified in the COLR.

(Methodology for Specification 3.1.1.3 - Moderator Temperature Coefficient, 3.1.3.5 - Shutdown Bank Insertion Limits, 3.1.3.6 - Control Bank Insertion Limits, and 3.2.3 - Nuclear Enthalpy Rise Hot Channel Factor).
- f. SEM/PWR Large Break LOCA Evaluation Model as defined by:

EMF-2087(P)(A), "SEM/PWR-98: ECCS Evaluation Model for PWR LBLOCA Applications," approved version as specified in the COLR.

XN-NF-81-58(P)(A), "RODEX2 Fuel Rod Thermal-Mechanical Response Evaluation Model," approved version as specified in the COLR.

ANF-81-58(P)(A), "RODEX2 Fuel Rod Thermal Mechanical Response Evaluation Model," approved version as specified in the COLR.

XN-NF-82-06(P)(A), "Qualification of Exxon Nuclear Fuel for Extended Burnup," approved version as specified in the COLR.

ANF-88-133(P)(A), "Qualification of Advanced Nuclear Fuels' PWR Design Methodology for Rod Burnups of 62 Gwd/MTU," approved version as specified in the COLR.

XN-NF-85-92(P)(A), "Exxon Nuclear Uranium Dioxide/Gadolinia Irradiation Examination and Thermal Conductivity Results," approved version as specified in the COLR.

EMF-92-116(P)(A), "Generic Mechanical Design Criteria for PWR Fuel Designs," approved version as specified in the COLR.

(Methodology for Specification 3.2.1 - Axial Flux Difference, 3.2.2 - Heat Flux Hot Channel Factor, and 3.2.3 - Nuclear Enthalpy Rise Hot Channel Factor).
- g. XN-NF-78-44(P)(A), "A Generic Analysis of the Control Rod Ejection Transient for Pressurized Water Reactors," approved version as specified in the COLR.

(Methodology for Specification 3.1.3.5 - Shutdown Bank Insertion Limits, 3.1.3.6 - Control Bank Insertion Limits, and 3.2.2 - Heat Flux Hot Channel Factor).

ADMINISTRATIVE CONTROLS

6.9.1.6 CORE OPERATING LIMITS REPORT (Continued)

- h. ANF-88-054(P)(A), "PDC-3: Advanced Nuclear Fuels Corporation Power Distribution Control for Pressurized Water Reactors and Application of PDC-3 to H. B. Robinson Unit 2," approved version as specified in the COLR.
- (Methodology for Specification 3.2.1 - Axial Flux Difference, and 3.2.2 - Heat Flux Hot Channel Factor).
- i. WCAP-9272-P-A, "WESTINGHOUSE RELOAD SAFETY EVALUATION METHODOLOGY", July 1985 (W Proprietary).
- (Methodology for Specification 3.1.1.2 - SHUTDOWN MARGIN - MODES 3, 4 AND 5, 3.2.2 - Heat Flux Hot Channel Factor and 3.2.3 - Nuclear Enthalpy Rise Hot Channel Factor).
- j. WCAP-10266-P-A, Rev. 2, "The 1981 Version of the WESTINGHOUSE ECCS EVALUATION MODEL USING THE BASH CODE", March 1987 (W Proprietary).
- (Methodology for Specification 3.2.2 - Heat Flux Hot Channel Factor).
- k. WCAP-11837-P-A, "EXTENSION OF METHODOLOGY FOR CALCULATING TRANSITION CORE DNBR PENALTIES", January 1990 (W Proprietary).
- (Methodology for Specification 3.2.3 - Nuclear Enthalpy Rise Hot Channel Factor).
- l. EMF-92-081(P)(A), "Statistical Setpoint/Transient Methodology for Westinghouse Type Reactors," approved version as specified in the COLR.
- (Methodology for Specification 3.1.1.3 - Moderator Temperature Coefficient, 3.1.3.5 - Shutdown Bank Insertion Limits, 3.1.3.6 - Control Bank Insertion Limits, 3.2.1 - Axial Flux Difference, 3.2.2 - Heat Flux Hot Channel Factor, and 3.2.3 - Nuclear Enthalpy Rise Hot Channel Factor).
- m. EMF-92-153(P)(A), "HTP: Departure from Nucleate Boiling Correlation for High Thermal Performance Fuel," approved version as specified in the COLR.
- (Methodology for Specification 3.2.3 - Nuclear Enthalpy Rise Hot Channel Factor).
- n. XN-NF-82-49(P)(A), "Exxon Nuclear Company Evaluation Model EXEM PWR Small Break Model," approved version as specified in the COLR.
- (Methodology for Specification 3.2.1 - Axial Flux Difference, 3.2.2 - Heat Flux Hot Channel Factor, and 3.2.3 - Nuclear Enthalpy Rise Hot Channel Factor).

ADMINISTRATIVE CONTROLS

6.9.1.6 CORE OPERATING LIMITS REPORT (Continued)

- o. EMF-96-029(P)(A), "Reactor Analysis Systems for PWRs," approved version as specified in the COLR.

(Methodology for Specification 3.1.1.2 - SHUTDOWN MARGIN - MODES 3, 4 and 5, 3.1.1.3 - Moderator Temperature Coefficient, 3.1.3.5 - Shutdown Bank Insertion Limits, 3.1.3.6 - Control Bank Insertion Limits, 3.2.1 - Axial Flux Difference, 3.2.2 - Heat Flux Hot Channel Factor, 3.2.3 - Nuclear Enthalpy Rise Hot Channel Factor, and 3.9.1 - Boron Concentration).

6.9.1.6.3 The core operating limits shall be determined so that all applicable limits (e.g., fuel thermal-mechanical limits, core thermal-hydraulic limits, nuclear limits such as shutdown margin, and transient and accident analysis limits) of the safety analysis are met.

6.9.1.6.4 The CORE OPERATING LIMITS REPORT, including any mid-cycle revisions or supplements, shall be provided, upon issuance for each reload cycle, to the NRC Document Control Desk, with copies to the Regional Administrator and Resident Inspector.

SPECIAL REPORTS

6.9.2 Special reports shall be submitted to the NRC in accordance with 10CFR50.4 within the time period specified for each report.

6.10 DELETED

(PAGE 6-25 DELETED)