



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

August 3, 2000

Mr. D. E. Young, Vice President  
Carolina Power & Light Company  
H. B. Robinson Steam Electric Plant, Unit No. 2  
3581 West Entrance Road  
Hartsville, South Carolina 29550

SUBJECT: H. B. ROBINSON STEAM ELECTRIC PLANT UNIT 2 - ISSUANCE OF  
AMENDMENT - TECHNICAL SPECIFICATION CHANGE TO INCORPORATE  
ANALYTICAL METHODOLOGIES FOR CORE OPERATING LIMITS REPORT  
(COLR) THAT HAVE BEEN ACCEPTED BY NRC FOR REFERENCING IN  
LICENSING APPLICATIONS (TAC NO. MA9180)

Dear Mr. Young:

The Commission has issued the enclosed Amendment No. 188 to Facility Operating License No. DPR-23 for the H. B. Robinson Steam Electric Plant, Unit No. 2 (HBR). This amendment consists of changes to the Technical Specifications (TS) in response to your application dated June 14, 2000, as supplemented by your eMail of July 14, 2000.

This amendment revises TS 5.6.5 to incorporate analytical methodologies that are used for the Core Operating Limits Report that have been accepted by the Nuclear Regulatory Commission for referencing in licensing in cycle-specific applications.

In your eMail of July 14, 2000, you have committed to implement specification of the approved version of the referenced topical reports, including the date of the report, as a part of implementation of this amendment. This will be duly tracked under the provisions of the Agency Commitment Tracking Procedure.

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

Sincerely,

Ram Subbaratnam, Project Manager, Section 2  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-261

Enclosures:

1. Amendment No. 188 to License No. DPR-23
2. Safety Evaluation

cc w/encls: See next page

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/RA/

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cc w/encls: See next page \*\* Staff SE Date

\*See previous concurrence

FILENAME - G:\PDII-2\Robinson\RMA9180.amd.wpd

PM:PDII-S2	LA:PDII-S2	SRXB/DSSA	OGC	SC:PD II-S2
RSubbaratnam	EDunnington	YHSII**	C. Marco	R. Corleto
7/14/2000	7/25/2000	7/11/2000	7/26/2000	8/1/2000
Yes/No	Yes/No	Yes/No	Yes/No	Yes/No

OFFICIAL RECORD COPY

AMENDMENT NO. 188 TO FACILITY OPERATING LICENSE NO. DPR-23 - H. B. Robinson,  
UNIT 2

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

CAROLINA POWER & LIGHT COMPANY

DOCKET NO. 50-261

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 188  
License No. DPR-23

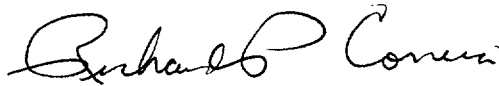
1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment filed by Carolina Power & Light Company (CP&L, the licensee), dated June 14, 2000, as supplemented by eMail of July 14, 2000, complies with the standards and requirements of the Atomic Energy Act 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. DPR-23 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 188, are hereby incorporated in the license. Carolina Power & Light Company shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented prior to unit restart after Refueling Outage No. 20.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink, appearing to read "Richard P. Correia".

Richard P. Correia, 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: August 3, 2000

ATTACHMENT TO LICENSE AMENDMENT NO. 188

FACILITY OPERATING LICENSE NO. DPR-23

DOCKET NO. 50-261

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

5.0-28  
5.0-29  
5.0-30  
5.0-31

Insert Pages

5.0-28  
5.0-29  
5.0-30  
5.0-31

## 5.6 Reporting Requirements

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### 5.6.5 CORE OPERATING LIMITS REPORT (COLR) (continued)

4. Control Bank Insertion Limits for Specification 3.1.6;
  5. Heat Flux Hot Channel Factor ( $F_Q(Z)$ ) limit for Specification 3.2.1;
  6. Nuclear Enthalpy Rise Hot Channel Factor ( $F_{\Delta H}^N$ ) limit for Specification 3.2.2;
  7. Axial Flux Difference (AFD) limits for Specification 3.2.3; and
  8. Boron Concentration limit for Specification 3.9.1.
- b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC. The approved version shall be identified in the COLR. These methods are those specifically described in the following documents:
1. XN-75-27(A), "Exxon Nuclear Neutronics Design Methods for Pressurized Water Reactors," approved version as specified in the COLR.
  2. XN-NF-84-73(P), "Exxon Nuclear Methodology for Pressurized Water Reactors: Analysis of Chapter 15 Events," approved version as specified in the COLR.
  3. XN-NF-82-21(A), "Application of Exxon Nuclear Company PWR Thermal Margin Methodology to Mixed Core Configurations," approved version as specified in the COLR.
  4. Steam Line Break Methodology as defined by:  
  
ANF-84-093(P)(A), "Steamline Break Methodology for PWRs," approved version as specified in the COLR.  
  
EMF-84-093(P)(A), "Steam Line Break Methodology for PWRs," approved version as specified in the COLR.

(continued)

## 5.6 Reporting Requirements

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### 5.6.5 CORE OPERATING LIMITS REPORT (COLR) (continued)

5. XN-75-32(A), "Computational Procedure for Evaluating Rod Bow," approved version as specified in the COLR.
6. XN-NF-82-49(A), "Exxon Nuclear Corporation Evaluation Model EXEM PWR Small Break Model," approved version as specified in the COLR.
7. EMF-2087 (P)(A), "SEM/PWR-98: ECCS Evaluation Model for PWR LBLOCA Applications," approved version as specified in the COLR.
8. XN-NF-78-44(A), "Generic Control Rod Ejection Analysis," approved version as specified in the COLR.
9. XN-NF-621(A), "XNB Critical Heat Flux Correlation," approved version as specified in the COLR.
10. ANF-1224(A), "Departure from Nucleate Boiling Correlation for High Thermal Performance Fuel," approved version as specified in the COLR.
11. XN-NF-82-06(A), "Qualification of Exxon Nuclear Fuel for Extended Burnup," approved version as specified in the COLR.
12. WCAP-10080-A, "NOTRUMP, A Nodal Transient Small Break and General Network Code," approved version as specified in the COLR.
13. WCAP-10081-A, "Westinghouse Small Break ECCS Evaluation Model Using the NOTRUMP code," approved version as specified in the COLR.
14. WCAP-8301 (Proprietary) and WCAP-8305 (Nonproprietary), "LOCTA-IV Program: Loss of Coolant Transient Analysis," approved version as specified in the COLR.

(continued)



## 5.6 Reporting Requirements

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### 5.6.5 CORE OPERATING LIMITS REPORT (COLR) (continued)

15. "Safety Evaluation by the Office of Nuclear Reactor Regulation Related to Amendment No. 87 to Facility Operating License No. DPR-23, Carolina Power & Light Co., H. B. Robinson Steam Electric Plant, Unit No. 2, Docket No. 50-261," USNRC, Washington, DC 20555, 7 Nov. 84.
16. ANF-88-054(P), "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.
17. 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.
18. ANF-89-151(A), "ANF-RELAP Methodology for Pressurized Water Reactors: Analysis of Non-LOCA Chapter 15 Events," approved version as specified in the COLR.
19. EMF-92-081(A), "Statistical Setpoint/Transient Methodology for Westinghouse Type Reactors," approved version as specified in the COLR.
20. EMF-92-153(P)(A), "HTP: Departure from Nucleate Boiling Correlation for High Thermal Performance Fuel," approved version as specified in the COLR.
21. XN-NF-85-92(P)(A), "Exxon Nuclear Uranium Dioxide/Gadolinia Irradiation Examination and Thermal Conductivity Results," approved version as specified in the COLR.
22. EMF-96-029(P)(A), "Reactor Analysis System for PWRs," approved version as specified in the COLR.
23. EMF-92-116, "Generic Mechanical Design Criteria for PWR Fuel Designs," approved version as specified in the COLR.

(continued)

## 5.6 Reporting Requirements

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### 5.6.5 CORE OPERATING LIMITS REPORT (COLR) (continued)

- c. The core operating limits shall be determined such that all applicable limits (e.g., fuel thermal mechanical limits, core thermal hydraulic limits, Emergency Core Cooling Systems (ECCS) limits, nuclear limits such as SDM, transient analysis limits, and accident analysis limits) of the safety analysis are met.
- d. The COLR, including any midcycle revisions or supplements, shall be provided upon issuance for each reload cycle to the NRC.

### 5.6.6 Post Accident Monitoring (PAM) Instrumentation Report

When a report is required by Condition B or H of LCO 3.3.3, "Post Accident Monitoring (PAM) Instrumentation," a report shall be submitted within the following 14 days. The report shall outline the preplanned alternate method of monitoring, the cause of the inoperability, and the plans and schedule for restoring the instrumentation channels of the Function to OPERABLE status.

(continued)



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION

BY THE OFFICE OF NUCLEAR REACTOR REGULATION

REFERENCING ANALYTICAL METHODOLOGIES FOR

CORE OPERATING LIMITS REPORT

H. B. ROBINSON, UNIT 2

DOCKET NO. 50-261

1.0 INTRODUCTION

By letter dated June 14, 2000, as supplemented by eMail of July 14, 2000, Carolina Power & Light Company, the licensee for H. B. Robinson Steam Electric Plant Unit 2 (HBRSEP2), requested changes to the HBRSEP2 Technical Specifications (TS). The requested changes revise TS 5.6.5 with regard to referencing of the analytical methodologies used in the determination of the Core Operating Limits Report (COLR). Specifically, the licensee requested TS changes to: (1) reference the version of a topical report used in the core operating limits determination in the COLR; and (2) replace the topical reports of the methodologies used for the steamline break and large break loss-of-coolant accident analyses.

The July 14, 2000, supplemental submittal contained clarifying information only, and did not change the initial no significant hazards consideration determination.

2.0 BACKGROUND

In an effort to avoid TS changes for every fuel reload cycle that results in the changes of the cycle-specific parameter limits, licensees have moved the cycle-specific core operating parameters from the TS to the COLR. This is done with the guidelines of NRC Generic Letter 88-16 (Ref. 2), which also requires the licensees to identify in the TS "Reporting Requirements" the previously approved analytical methods used to determine the core operating limits by identifying the topical report number, title, and date (or identify the staff's safety evaluation for a plant-specific methodology by NRC letter and date).

In December 1999 (Ref. 3), the NRC accepted a method proposed by Siemens Power Corporation of referencing approved topical reports, which would allow licensees to use current topical reports to support limits in the COLR without having to submit an amendment to the facility operating license each time a revision to the topical report is approved by the NRC. This method would allow the references to approved topical reports in the TS to be cited using the report number and title, and a note that the COLR provides the complete citation for the reports used. The citation in the COLR would include the complete identification for each of the TS references to topical reports used to prepare the COLR (i.e., report number, title, revision, date, and any supplements). This method of referencing was subsequently accepted generically by NRC for the Improved Standard Technical Specifications (Ref. 4).

### 3.0 EVALUATION

The licensee proposed the following four changes to TS Reporting Requirements 5.6.5, "Core Operating Limits Report (COLR)":

- Revise references of all topical reports in TS 5.6.5.b to identify the latest version by listing the topical report number first, following by the title, then "approved version as specified in the COLR."
- Revise TS 5.6.5.b Item 4 to reference new steamline break methodology. The original topical report XN-NF-84-93(A) is replaced by topical reports ANF-84-093(P)(A), "Steamline Break Methodology for PWRs," and EMF-84-093(P)(A), "Steamline Break Methodology for PWRs."
- Revise TS 5.6.5.b Item 7 by replacing all topical reports of the large break loss-of-coolant accident methodology with a single topical report, EMF-2087(P)(A), "SEM/PWR-98: ECCS Evaluation Model for PWR LBLOCA Applications."
- Revise TS 5.6.5.b by adding Item 23 to reference a generic mechanical design methodology topical report, EMF-92-116, "Generic Mechanical Design Criteria for PWR Fuel Designs."

Since every topical report identified in TS 5.6.5 includes the phrase "approved version as specified in COLR," there is an assurance that only the approved versions of the referenced topical reports will be used for the determination of the core operating limits. The staff also reviewed Section 3, "Methodology References," of the current HBRSEP2, Cycle 20 COLR (Ref. 5) as an example, and found that the approved topical reports for use in the core operating limits determination are listed with the proper identifications, including report numbers, titles, revision numbers, supplements, and dates, except for a few reports which do not include dates. The licensee has, in an eMail dated July 14, 2000, committed to implement specification of the approved version of the referenced topical reports, including the date of the report as a part of implementation of this amendment. This will be duly tracked under the provisions of the Agency Commitment Tracking Procedure (Ref.6).

### 4.0 STATE CONSULTATION

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

### 5.0 ENVIRONMENTAL CONSIDERATION

This amendment involves a change in the 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 (65 FR 39957). 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 this amendment.

## 6.0 CONCLUSION

As a result of its evaluation as described above, the staff concludes that the proposed changes to TS 5.6.5 are consistent with the NRC-approved method of referencing topical reports and are, therefore, acceptable.

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 R. L. Warden (CP&L) to US Nuclear Regulatory Commission, "H. B. Robinson Steam electric Plant, Unit No. 2, Docket No. 50-261/License No. DPR-23, Request for Technical Specification Change, Revision to Core Operating Limits Report (COLR) References," June 14, 2000.
2. US Nuclear Regulatory Commission Generic Communication, "Removal of Cycle-Specific Parameter Limits From Technical Specifications (Generic Letter 88-16)," October 4, 1988.
3. Letter from S. A. Richards (USNRC) to J. F. Mallay, Siemens Power Corporation, "Acceptance for Siemens References to Approved Topical Reports in Technical Specifications (TAC No. MA6492)," December 15, 1999.
4. Industry/TSTF Standard Technical Specification Change Traveler TSTF-363, "Revise Topical Report References in ITS 5.6.5, COLR," April 2000.
5. Carolina Power & Light Company, H.B. Robinson Steam Electric Plant, Unit No. 2, Plant Operating manual, Volume 6, Part 5, Fuel Management Procedure, FMP-001, "Core Operating Limit Report (COLR)," Revision 12.
6. NRR Office Letter No. 900, "Managing Commitments Made By Licensees to the NRC," March 24, 2000.

Principal Contributor: Y. Hsui, NRC

Date: August 3, 2000

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