



Serial: RNP-RA/06-0027

APR 11 2006

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

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2  
DOCKET NO. 50-261/LICENSE NO. DPR-23

REQUEST FOR TECHNICAL SPECIFICATIONS CHANGE  
TO CORE OPERATING LIMITS REPORT (COLR) REFERENCES

Ladies and Gentlemen:

In accordance with the provisions of the Code of Federal Regulations, Title 10, Part 50.90, Carolina Power and Light Company, also known as Progress Energy Carolinas (PEC), Inc., is submitting a request for an amendment to the Technical Specifications (TS) contained in Appendix A of the Operating License for H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2. The proposed amendment would modify TS 5.6.5 to add two NRC-approved topical reports to the Core Operating Limits Report (COLR) methodologies list.

Specifically, the proposed change would add topical report EMF-2310(P)(A), "SRP Chapter 15 Non-LOCA Methodology for Pressurized Water Reactors," and topical report EMF-2328(P)(A), "PWR Small Break LOCA Evaluation Model, S-RELAP5 Based." This change will allow for the use of the S-RELAP5 thermal-hydraulic analysis code for Chapter 15 non-LOCA accidents and the small break LOCA accident in HBRSEP, Unit No. 2, safety analyses. EMF-2310(P)(A) was approved by the NRC in a letter dated May 11, 2001, with Revision 1 approved in a letter dated May 19, 2004, and EMF-2328(P)(A) was approved by the NRC in a letter dated March 15, 2001.

With the approval of EMF-2310(P)(A), the NRC specified limitations and conditions that must be met in order to use the subject topical report. One condition requires the submittal of a plant-specific analysis. The plant-specific analysis for HBRSEP, Unit No. 2, is provided in Attachments V and VI. Attachment V provides a non-proprietary version of the analysis ANP-2512, "Loss of Forced Reactor Coolant Flow Analysis for Robinson," that can be released for public disclosure. Attachment VI provides a proprietary version of the analysis that should be withheld from public disclosure. Attachment VII provides an Affidavit from Framatome ANP regarding the proprietary nature of Attachment VI, as required by 10 CFR 2.390.

Progress Energy Carolinas, Inc.  
Robinson Nuclear Plant  
3501 West Entrance Road  
Hartsville, SC 29550

AP01

Attachment I provides an Affirmation pursuant to 10 CFR 50.30(b).

Attachment II provides a description of the proposed change, a technical justification for the proposed change, a No Significant Hazards Determination, and an Environmental Impact Consideration.

Attachment III provides a markup of the current TS page and Attachment IV provides a retyped page for the proposed TS.

In accordance with 10 CFR 50.91(b), PEC is providing the State of South Carolina with a copy of the proposed license amendment.

PEC requests approval of the proposed license amendment by November 30, 2006, to allow for the use of topical report EMF-2310(P)(A) in the evaluation of end-of-cycle Moderator Temperature Coefficient surveillance limits for the current operating cycle.

If you have any questions concerning this matter, please contact Mr. C. T. Baucom at (843) 857-1253.

Sincerely,



J. F. Lucas  
Manager - Support Services - Nuclear

RAC/rac

Attachments:

- I. Affirmation
- II. Request for Technical Specifications Change Regarding Revision to Core Operating Limits Report (COLR) References
- III. Markup of Technical Specifications Page
- IV. Retyped Technical Specifications Page
- V. ANP-2512(NP) – “Loss of Forced Reactor Coolant Flow Analysis for Robinson,” March 2006, Non-Proprietary Version
- VI. ANP-2512(P) – “Loss of Forced Reactor Coolant Flow Analysis for Robinson,” March 2006, Proprietary Version
- VII. Framatome ANP Affidavit Regarding Proprietary Attachment VI

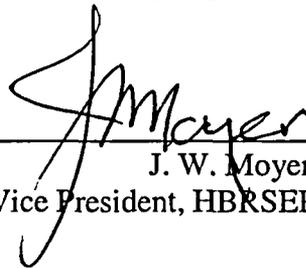
c: Mr. T. P. O’Kelley, Director, Bureau of Radiological Health (SC)  
Mr. H. J. Porter, Director, Division of Radioactive Waste Management (SC)  
Dr. W. D. Travers, NRC, Region II  
Mr. C. P. Patel, NRC, NRR  
NRC Resident Inspectors, HBRSEP  
Attorney General (SC)

**AFFIRMATION**

The information contained in letter RNP-RA/06-0027 is true and correct to the best of my information, knowledge, and belief; and the sources of my information are officers, employees, contractors, and agents of Carolina Power and Light Company, also known as Progress Energy Carolinas, Inc. I declare under penalty of perjury that the foregoing is true and correct.

Executed On:

11 April 2006



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J. W. Moyer  
Vice President, HBRSEP, Unit No. 2

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

### **REQUEST FOR TECHNICAL SPECIFICATIONS CHANGE REGARDING REVISION TO CORE OPERATING LIMITS REPORT (COLR) REFERENCES**

#### **Description of the Proposed Change**

H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2, Technical Specifications 5.6.5.b specifies that 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 Core Operating Limits Report (COLR). A list of the documents that include these approved methods is provided in Technical Specifications 5.6.5.b.

Carolina Power and Light Company, also known as Progress Energy Carolinas (PEC), Inc., is proposing a change to the Appendix A, Technical Specifications (TS), of Facility Operating License No. DPR-23, for H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2. This change will revise TS 5.6.5, "Core Operating Limits Report (COLR)," to add two NRC-approved topical reports to the listing of analytical methods in TS 5.6.5.b. The two topical reports are EMF-2310(P)(A), "SRP Chapter 15 Non-LOCA Methodology for Pressurized Water Reactors," and EMF-2328(P)(A), "PWR Small Break LOCA Evaluation Model, S-RELAP5 Based." This change will allow for the use of the S-RELAP5 thermal-hydraulic analysis code for Chapter 15 non-LOCA accidents and the small break LOCA accident in HBRSEP, Unit No. 2, safety analyses. EMF-2328(P)(A) will only be used for small break LOCAs with a break size less than or equal to 10% of the cold leg flow area.

#### **Technical Justification for the Proposed Change**

The two topical reports have been reviewed and approved by the NRC for use in determining core operating limits. The core operating limits to be developed using the new methodologies for HBRSEP, Unit No. 2, will be established in accordance with the applicable limitations as documented in the NRC Safety Evaluation Reports. In a May 11, 2001, NRC Safety Evaluation Report, the NRC concluded that the S-RELAP5 code is capable of addressing the thermal-hydraulic response of the target non-LOCA events in a conservative manner and is, therefore, an acceptable replacement for the ANF-RELAP code. In the May 19, 2004, Safety Evaluation Report for Revision 1 to EMF-2310(P)(A), the NRC concluded that the code remained acceptable for use for the non-LOCA events. In a March 15, 2001, Safety Evaluation Report, the NRC concluded that the code was acceptable for use for small break LOCA analyses at Westinghouse pressurized water reactors.

Based on the NRC Safety Evaluation Report restrictions for the EMF-2310(P)(A) topical report, each licensee must submit the results of a plant-specific analysis with the license amendment application. Therefore, non-proprietary and proprietary versions of ANP-2512, "Loss of Forced Reactor Coolant Flow Analysis for Robinson," are included as Attachments V and VI, as required.

### **No Significant Hazards Consideration Determination**

Carolina Power and Light Company, also known as Progress Energy Carolinas, Inc., is proposing a change to the Appendix A, Technical Specifications (TS), of Facility Operating License No. DPR-23, for H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2. This change will revise TS 5.6.5, "Core Operating Limits Report (COLR)," to add two NRC-approved topical reports to the listing of analytical methods in TS 5.6.5.b. The two topical reports are EMF-2310(P)(A), "SRP Chapter 15 Non-LOCA Methodology for Pressurized Water Reactors," and EMF-2328(P)(A), "PWR Small Break LOCA Evaluation Model, S-RELAP5 Based." This change will allow for the use of the S-RELAP5 thermal-hydraulic analysis code for Chapter 15 non-LOCA accidents and the small break LOCA accident in HBRSEP, Unit No. 2, safety analyses.

An evaluation of the proposed change has been performed in accordance with 10 CFR 50.91(a)(1) regarding no significant hazards considerations using the standards in 10 CFR 50.92(c). A discussion of these standards as they relate to this amendment request follows:

1. The Proposed Change Does Not Involve a Significant Increase in the Probability or Consequences of an Accident Previously Evaluated.

The two topical reports have been reviewed and approved by the NRC for use in determining core operating limits. The core operating limits to be developed using the new methodologies for HBRSEP, Unit No. 2, will be established in accordance with the applicable limitations as documented in the NRC Safety Evaluation Reports. In a May 11, 2001, NRC Safety Evaluation Report, the NRC concluded that the S-RELAP5 code is capable of addressing the thermal-hydraulic response of the target non-LOCA events in a conservative manner and is, therefore, an acceptable replacement for the ANF-RELAP code. In the May 19, 2004, Safety Evaluation Report for Revision 1 to EMF-2310(P)(A), the NRC concluded that the code remained acceptable for use for the non-LOCA events. In a March 15, 2001, Safety Evaluation Report, the NRC concluded that the code was acceptable for use for small break LOCA analyses at Westinghouse pressurized water reactors.

The proposed change, by itself, does not impact the current design bases. The proposed change enables the use of new methodologies to re-analyze certain events. Revised analyses may either result in continued conformance with design bases, or may change the design bases. If design basis changes result from a revised analysis, then the specific design changes will be evaluated in accordance with HBRSEP, Unit No. 2, design change procedures and 10 CFR 50.59.

The proposed change does not involve physical changes to any plant structure, system, or component. Therefore, the probability of occurrence for a previously analyzed accident is not significantly increased.

The consequences of a previously analyzed accident are dependent on the initial conditions assumed for the analysis, the behavior of the fission product barriers during the analyzed accident, the availability and successful functioning of the equipment assumed to operate in response to the analyzed event, and the setpoints at which these actions are initiated. The proposed methodologies will ensure that the plant continues to meet applicable design and safety analyses acceptance criteria. The proposed change does not affect the performance of any equipment used to mitigate the consequences of an analyzed accident. As a result, no analysis assumptions are impacted and there are no adverse effects on the factors that contribute to offsite or onsite dose as a result of an accident. The proposed change does not affect setpoints that initiate protective or mitigative actions. The proposed change ensures that plant structures, systems, and components are maintained consistent with the safety analysis and licensing bases. Based on this evaluation, there is no significant increase in the consequences of a previously analyzed accident.

Therefore, this change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. The Proposed Change Does Not Create the Possibility of a New or Different Kind of Accident From Any Previously Evaluated.

The proposed change does not involve any physical alteration of plant systems, structures, or components, other than allowing for fuel design in accordance with NRC-approved methodologies. No new or different equipment is being installed. No installed equipment is being operated in a different manner. There is no change to the parameters within which the plant is normally operated or in the setpoints that initiate protective or mitigative actions. As a result, no new failure modes are being introduced. Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. The Proposed Change Does Not Involve a Significant Reduction in the Margin of Safety.

There is no impact on any margin of safety resulting from the incorporation of these new topical reports into the Technical Specifications. If design basis changes result from a revised analysis that uses these new methodologies, the specific design changes will be evaluated in accordance with HBRSEP, Unit No. 2, design change procedures and 10 CFR 50.59. Any potential reduction in the margin of safety would be evaluated for that specific design change.

Therefore, this change does not involve a significant reduction in the margin of safety.

Based on the above discussion, Carolina Power and Light Company, also known as Progress Energy Carolinas, Inc., has determined that the requested change does not involve a significant hazards consideration.

### **Environmental Impact Consideration**

10 CFR 51.22(c)(9) provides criteria for identification of licensing and regulatory actions for categorical exclusion for performing an environmental assessment. A proposed change for an operating license for a facility requires no environmental assessment if operation of the facility in accordance with the proposed change would not (1) involve a significant hazards consideration; (2) result in a significant change in the types or significant increases in the amounts of any effluents that may be released offsite; (3) result in an increase in individual or cumulative occupational radiation exposure. Carolina Power and Light Company, also known as Progress Energy Carolinas, Inc., has reviewed this request and determined that the proposed change 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 needs to be prepared in connection with the issuance of the amendment. The basis for this determination follows.

### **Proposed Change**

Carolina Power and Light Company, also known as Progress Energy Carolinas, Inc., is proposing a change to the Appendix A, Technical Specifications (TS), of Facility Operating License No. DPR-23, for H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2. This change will revise TS 5.6.5, "Core Operating Limits Report (COLR)," to add two NRC-approved topical reports to the listing of analytical methods in TS 5.6.5.b. The two topical reports are EMF-2310(P)(A), "SRP Chapter 15 Non-LOCA Methodology for Pressurized Water Reactors," and EMF-2328(P)(A), "PWR Small Break LOCA Evaluation Model, S-RELAP5 Based." This change will allow for the use of the S-RELAP5 thermal-hydraulic analysis code for Chapter 15 non-LOCA accidents and the small break LOCA accident in HBRSEP, Unit No. 2, safety analyses.

### **Basis**

The proposed change meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) for the following reasons.

1. As demonstrated in the No Significant Hazards Consideration Determination, the proposed change does not involve a significant hazards consideration.
2. The addition of core operating limit analytical methodologies has no negative impact on effluent releases. Therefore, the proposed change does not result in a significant change in the types or significant increases in the amounts of any effluents that may be released offsite.
3. The proposed change does not involve physical plant changes, or introduce any new mode of plant operation. Therefore, the proposed change does not result in a significant increase in individual or cumulative occupational radiation exposures.

United States Nuclear Regulatory Commission  
Attachment III to Serial: RNP-RA/06-0027  
2 pages including cover page

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

**REQUEST FOR TECHNICAL  
SPECIFICATIONS CHANGE REGARDING  
REVISION TO CORE OPERATING LIMITS REPORT (COLR) REFERENCES**

**MARKUP OF TECHNICAL SPECIFICATIONS PAGE**

5.6 Reporting Requirements

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.
24. EMF-2310(P)(A), "SRP Chapter 15 Non-LOCA Methodology for Pressurized Water Reactors," approved version as specified in the COLR.
25. EMF-2328(P)(A), "PWR Small Break LOCA Evaluation Model, S-RELAP5 Based," approved version as specified in the COLR.

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Attachment IV to Serial: RNP-RA/06-0027  
2 pages including cover page

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

**REQUEST FOR TECHNICAL  
SPECIFICATIONS CHANGE REGARDING  
REVISION TO CORE OPERATING LIMITS REPORT (COLR) REFERENCES**

**RETYPE TECHNICAL SPECIFICATIONS PAGE**

5.6 Reporting Requirements

5.6.5 CORE OPERATING LIMITS REPORT (COLR) (continued)

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