September 22, 2006

Mr. Thomas D. Walt, 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 NO. 2 — ISSUANCE OF AMENDMENT AND PARTIAL DENIAL REGARDING REACTOR PROTECTION SYSTEM AND ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TABLES (TAC NO. MC4219)

Dear Mr. Walt:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 210 to Renewed Facility Operating License No. DPR-23 for the H. B. Robinson Steam Electric Plant, Unit No. 2. This amendment is in response to your application dated August 20, 2004, as supplemented by letters dated June 22, 2005, June 26, 2006, and September 18, 2006.

The amendment approves the revised Technical Specifications Allowable Values for three reactor protection system instrumentation functions. The request for changes in two functions, specifically reactor coolant system flow-low and high steam flow in two steam lines coincident with steam line pressure-low, was withdrawn.

A copy of the related Safety Evaluation is enclosed. A Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

/RA/

Chandu P. Patel, Project Manager
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-261

Enclosures:
1. Amendment No. 210 to DPR-23
2. Safety Evaluation

cc w/encls: See next page

Mr. T. D. Walt
Carolina Power & Light Company

H. B. Robinson Steam Electric Plant,
Unit No. 2

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Sincerely,

/RA/

Chandu P. Patel, Project Manager
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-261
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cc w/encls: See next page
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CAROLINA POWER & LIGHT COMPANY

DOCKET NO. 50-261

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

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 210
Renewed License No. DPR-23

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Carolina Power & Light Company (the licensee), dated August 20, 2004, as supplemented by letters dated June 22, 2005, June 26, 2006, and September 18, 2006, 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 hereby amended and paragraph 3.B. of Renewed Facility Operating License No. DPR-23 is revised to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 210, 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 the date of its issuance and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Jennifer Dixon-Herrity, Acting Chief
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Renewed Facility
Operating License No. DPR-23

Date of Issuance: September 22, 2006

ATTACHMENT TO LICENSE AMENDMENT NO. 210

RENEWED FACILITY OPERATING LICENSE NO. DPR-23

DOCKET NO. 50-261

Replace page 3 of Renewed Facility Operating License No. DPR-23 with the attached page 3.

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	Insert Pages
3.3-13	3.3-13
3.3-15	3.3-15
3.3-17	3.3-17

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 210 TO

RENEWED FACILITY OPERATING LICENSE NO. DPR-23

CAROLINA POWER & LIGHT COMPANY

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

DOCKET NO. 50-261

1.0 INTRODUCTION

By letter dated August 20, 2004, the Carolina Power & Light Company (licensee) submitted a request for modifications to the Technical Specification (TS) Allowable Values (AVs) for four Reactor Protection System functions and one Engineered Safety Feature Actuation System function. In addition the letter requested deletion of a Technical Specification footnote concerning mode applicability that the licensee has deemed to be unnecessary. In response to the Nuclear Regulatory Commission (NRC) staff requests for additional information, the licensee submitted supplemental material by letters dated June 22, 2005, June 26, 2006, and September 18, 2006.

The June 22, 2005, June 26, 2006, and September 18, 2006, letters provided clarifying information that did not change or expand the scope of the initial proposed no significant hazards consideration determination.

The requested changes are as follows:

#	TS Table & Function	Description	System	Current AV	Proposed AV	proposed TS limit is ...
1	3.3.1-13	Intermediate Range Neutron Flux	RPS	≤37.02 %power	≤36.40	more restrictive
2	3.3.1-19	RCS Flow - Low	RPS	≥93.47 %flow	≥93.45	less restrictive
3	3.3.1-14	SG Water Level - Low Coincident with Steam Flow / Feedwater Flow Mismatch	RPS	≤7.06E5 lbm/hr	≤7.01E5	more restrictive
4	3.3.1-17a	Intermediate Range Neutron Flux P6 Interlock	RPS	≥7.29E-11 amp	≥9.34E-11	more restrictive

#	TS Table & Function	Description	System	Current AV	Proposed AV	proposed TS limit is ...
5	3.3.1-1 20	Automatic Trip Logic (editorial change to applicability notes)	RPS	n/a	n/a	n/a
6	3.3.2-1 1g	High Steam Flow in 2 Steam lines Coincident with Steam Line Pressure - Low	ESFAS	≥605.05 psig	≥597.76	less restrictive

The licensee indicates that the requested AV changes result from a review of setpoint calculations and the associated current AVs. By the September 18, 2006, letter, the licensee withdrew changes 2 and 6 in the table above.

2.0 REGULATORY EVALUATION

The NRC staff's evaluation of the proposed changes is based upon the following:

- 10 CFR Part 50.36 "Technical specifications"
- 10 CFR Part 50, Appendix A, General Design Criterion 10 "Reactor design"
- 10 CFR Part 50, Appendix A, General Design Criterion 20 "Protection system functions"
- Regulatory Guide 1.105, "Setpoints for Safety-Related Instrumentation," Revision 3

10 CFR 50.36 Section (c)(1)(ii)(A) specifies that: "Where a limiting safety system setting is specified for a variable on which a safety limit has been placed, the setting must be so chosen that automatic protective action will correct the abnormal situation before a safety limit is exceeded."

10 CFR 50.36 Section (c)(3) specifies that: "Surveillance requirements are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained ..."

General Design Criterion (GDC) 10 requires, in part, that the reactor core and associated coolant, control, and protection systems must be designed with appropriate margin to assure that specified acceptable fuel design limits are not exceeded during any condition of normal operation, including the effects of anticipated operational occurrences.

GDC 20 requires, in part, that protection systems be automatically initiated so as to ensure that fuel design limits are not exceeded. It also requires that protection systems sense accident conditions and initiate the operation of systems and components important to safety.

Regulatory Guide 1.105, "Setpoints for Safety-Related Instrumentation," provides guidance on instrument setpoint methodology.

The NRC staff positions regarding the two sections of 10 CFR 50.36 cited above have been discussed with industry in multiple public meetings, and are reflected in letters dated March 31, August 23, and September 7, 2005, from the NRC to Nuclear Energy Institute. In summary, the NRC staff position on the cited requirements is that they:

> (NRC staff position 1) - Require that the setpoint be restored to some measured value ("As-Left" value, or "AsL") that is within a prespecified tolerance band ("Setting Tolerance," or "ST") of a prespecified target value ("Nominal Setpoint," or "NSP") at the conclusion of periodic testing.
>
> (NRC staff position 2) - Require that the NSP be no less conservative than a prespecified limit, the "Limiting Setpoint," derived in such a manner as to include consideration of all aspects of measurement uncertainty.
>
> (NRC staff position 3) - Require that, if the measured value of the setpoint at the beginning of a periodic test (the "As-Found" value, or "AsF") is different from the previous AsL by more than a prespecified Deviation Limit (DL), the channel be submitted for evaluation and possible repair or other corrective action. DL is the maximum amount by which the measured value of the setpoint is expected to change over the test interval in the absence of malfunction, with 95/95 confidence. Setpoint deviation may be evaluated by comparing the As-Found Setpoint with the Nominal Setpoint, rather than with the previous As-Left Setpoint, if the Setting Tolerance is suitably constrained and, in particular, does not exceed the DL.

NRC staff positions (1) and (2) ensure that a setpoint will initiate the associated action at an actual process variable value that is consistent with the intended function despite uncertainty in the actual trippoint associated with a measured setpoint value. The NRC staff positions also support conformance to GDC 10 and 20 by ensuring that the safety systems function in accordance with the safety analyses.

NRC staff position (3) ensures that appropriate action is taken if a channel is found not to be performing in accordance with the assumptions upon which the limiting setting is based. If a channel is not performing in accordance with those assumptions, then either the assumptions are inappropriate and the analysis – and possibly the associated channel limits – must be revised, or the equipment is malfunctioning and must be repaired or replaced. In either case, the proper operation of the channel is compromised and the channel is inoperable until appropriate corrective action has been taken.

For LSSS upon which no SL has been placed, the guidance from the NRC staff position 3 may be addressed outside the TS in an appropriately-controlled and controlling document, such as surveillance test procedures. These guidances themselves are no different from those applicable to SL-related TS, but it is not necessary for those guidances be expressed in the TS.

GDC 20 requires that automatic initiation of protection systems protect the fuel design limits, which in turn requires that automatic initiation be in accordance with the safety analyses which show that the fuel limits are protected. NRC staff positions 1 and 2 provide assurance that initiation will occur at an appropriate value despite anticipated error in the actual trip value as compared with the measured setpoint.

GDC 10 requires that key systems be designed with appropriate margin. NRC staff positions 1 and 2 provide assurance that this margin is not compromised by anticipated uncertainties in instrument channel setpoints.

3.0 TECHNICAL EVALUATION

The table in Section 1 of this Safety Evaluation identifies the functions that the licensee originally intended to modify. However, by letter dated September 18, 2006, the licensee withdrew the request for changes 2 and 6. These changes will not be discussed further by the NRC staff. Changes 1, 3, and 4 affect the reactor trips that are not credited in any safety analysis, and therefore constitute LSSS upon which no SL has been placed. Change 5 is administrative and has no technical implications. The table is repeated here, modified to explicitly indicate the foregoing:

#	TS Table & Function	Description	System	SL-Related?		proposed TS limit is ...
				YES	NO	
1	3.3.1-13	Intermediate Range Neutron Flux	RPS		✔	more restrictive
2	3.3.1-19	RCS Flow - Low	RPS	-	-	withdrawn
3	3.3.1-14	SG Water Level - Low Coincident with Steam Flow / Feedwater Flow Mismatch	RPS		✔	more restrictive
4	3.3.1-17a	Intermediate Range Neutron Flux P6 Interlock	RPS		✔	more restrictive
5	3.3.1-20	Automatic Trip Logic (editorial change to applicability notes)	RPS	n/a	n/a	n/a
6	3.3.2-1 1g	High Steam Flow in 2 Steam Lines Coincident with Steam Line Pressure - Low	ESFAS	-	-	withdrawn

3.1 General Discussion of Proposed Changes to Allowable Values

The current TS specify an “Allowable Value” and a “Nominal Trip Setpoint” for each function. The proposed modifications (except for modification 5, which is addressed separately below) change the AVs for various functions. They do not make any other changes to the TS.

Regarding NRC staff Position 1: The current TS include a note on each page that is affected by the requested changes. This note indicates that a channel may be declared OPERABLE if the associated setpoint is reset to within its established calibration tolerance band of the Nominal Setpoint whenever it is found to be outside that band, provided it has been found to be

conservative relative to the AV. This reset provision, together with the proper selection of the nominal setpoint, ensures that a safety system will initiate action at an actual process variable value that is consistent with the intended function despite uncertainty in the actual trippoint associated with a measured setpoint value. It is this reset provision, rather than provisions relating to the AV that ensures that the channel will perform in accordance with the Safety Analyses. This reset provision is consistent with the requirements of 10 CFR 50.36(c)(1)(ii)(A). Therefore, the licensee proposed TS changes are consistent with NRC staff Position 1 and meet the requirements of 10 CFR 50.36(c)(1)(ii)(A).

Regarding NRC staff Position 2: The licensee has stated that the nominal setpoints reflected in the TS and in the associated procedures are in accordance with the licensee's uncertainty analyses. The licensee has stated that those uncertainty analyses are in accordance with a methodology that has been submitted for NRC staff review in connection with the requested TS changes. NRC staff has reviewed the submitted methodology, and on the basis of that review, concludes that the methodology is consistent with the provisions of Regulatory Guide 1.105 and that setpoint values computed in accordance with that methodology would therefore be adequately conservative. This method of establishing nominal setpoints, together with the reset provisions described in regard to NRC staff position 1, ensures that a safety system will initiate action at an actual process variable value that is consistent with the intended function despite uncertainty in the actual trippoint associated with a measured setpoint value. Therefore the proposed TS changes are consistent with NRC staff Position 2 and meet the requirements of 10 CFR 50.36(c)(1)(ii)(A).

Regarding NRC staff Position 3: The licensee has stated that the calibration procedures require assessment of channel operability and initiation of corrective action if the As-Found setpoint is outside the As-Left limits. The licensee has also stated that, for the TS functions addressed in the requested changes, the AsF / AsL acceptability band does not include any allowance for anticipated setpoint drift. This procedural requirement is considerably more restrictive than the AV-based requirement in the TS. Notably, this limitation does not take anticipated drift into account, and so places a more restrictive limit upon the acceptable amount of setpoint deviation than might otherwise be expected. It is this procedural AsF limitation, rather than the proposed AVs, that establishes channel operability. Based on this, the NRC staff finds that the proposed TS changes are consistent with NRC staff Position 3 and meet the requirements of 10 CFR 50.36(c)(3).

3.2 Changes not Related to a Safety Limit (# 1, 3, 4)

Changes 1, 3, and 4 apply to functions which are not credited in any plant safety analysis. The LSSS for these functions are therefore not subject to SLs. As explained above in the discussion of the requirements of 10 CFR 50.36, LSSS upon which no SL has been placed can have reset provisions and deviation assessment provisions expressed in calibration or test procedures outside the TS. Also, as explained above, the reset requirement and limit, and As-Found deviation assessment requirements, are all adequately expressed in the TS themselves or in applicable plant procedures. The proposed TS modifications for changes 1, 3, and 4 are therefore in accordance with the requirements of 10 CFR 50.36(c)(1)(ii)(A) and 10 CFR 50.36(c)(3).

As shown in the first table, changes 1, 3, and 4 would make the TS more restrictive than they are at present. The licensee has indicated that the current TS are not sufficiently conservative. The proposed TS changes therefore address a known deficiency in the existing TS.

Changes 1, 3, and 4 are, therefore, acceptable.

3.3 Editorial Change (#5)

Change 5 requested removal of note "j" pertaining to the applicability of Function 20, "Automatic Trip Logic" under Mode 1. The note limits applicability regarding the source-range neutron flux detector channels to power levels below the P6 interlock. The licensee indicates that this note is not necessary "because the Automatic Trip Logic function is only required to be operable when the associated reactor protection functions are required to be operable." Function 4, "Source Range Neutron Flux," is not applicable under Mode 1. Therefore this request was found to be acceptable.

4.0 SUMMARY

The changes requested for RCS Flow - Low and High Steam Flow in 2 Steam Lines Coincident with Steam Line Pressure - Low (changes 2 and 6) are withdrawn by licensee. The NRC staff has concluded, based on the considerations discussed above that all other changes in the application are acceptable.

5.0 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.

6.0 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 (69 FR 68182). 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.

7.0 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.

Principal Contributor: Paul Rebstock

Date: September 22, 2006