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

June 4, 1999

SUBJECT: H. B. ROBINSON STEAM ELECTRIC PLANT UNIT 2 - ISSUANCE OF AMENDMENT RE: TEMPORARY TECHNICAL SPECIFICATION CHANGE--ULTIMATE HEAT SINK (UHS) (TAC NO. MA5202)

Dear Mr. Young:

The Commission has issued the enclosed Amendment No. 183 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 April 12, 1999.

This amendment revises TS 3.7.8, "Ultimate Heat Sink (UHS)," to permit an 8-hour delay in the UHS temperature restoration period prior to entering the plant shutdown required actions. Also, for the duration of the restoration, service water system (SWS) temperature will be monitored every hour after exceeding 95 degrees F and, if restoration does not occur within 8 hours, the plant will be placed in MODE 3 within 6 hours in accordance with the TS. This TS amendment is given as a temporary amendment change effective until September 30, 1999, after which the TS will revert back to the original TS provisions.

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

Sincerely,

Original signed by:

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

Docket No. 50-261

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Enclosures:
1. Amendment No. 183 to License No. DPR-23
2. Safety Evaluation

cc w/encls: See next page

*See previous concurrence

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PM:PDII-S2	LA:PDII-S2	SPLB:DSSA*	TSB:DRIP*	OGC* NLO	SC:PD II-S2*	D:PDII*
RSubbaratnam	EDunnington	GHubbard	WBeckner	APH	SPeterson	HBerkow
5/26/99	5/ 26/99	5 / 11 / 99	5/ 10 / 99	5 / 13 /99	5 /21/99	5 /25/99
Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No

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

June 4, 1999

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H. B. Robinson Steam Electric Plant,
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Docket No. 50-261

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1. Amendment No. 183 to License No. DPR-23
2. Safety Evaluation

cc w/encls: See next page

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. 183
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 (the licensee), dated April 12, 1999, 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. 183, 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 within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION

Sheri R. Peterson, 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: June 4, 1999

ATTACHMENT TO LICENSE AMENDMENT NO. 183

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	Insert Pages
3.7-21	3.7-21
B 3.7-50	B 3.7-50

3.7 PLANT SYSTEMS

3.7.8 Ultimate Heat Sink (UHS)

LCO 3.7.8 The UHS shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

NOTES

1. Conditions A and B and associated Required Actions and Completion Times shall only be applicable prior to, and on September 30, 1999.
2. Condition C and associated Required Actions and Completion Times shall only be applicable after September 30, 1999.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Service water temperature > 95°F.	A.1 Restore service water temperature to ≤ 95°F. AND A.2 Verify service water temperature is ≤ 99°F.	8 hours 1 hour AND Once per hour thereafter

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

The UHS satisfies Criterion 3 of the NRC Policy Statement.

LCO

The UHS is required to be OPERABLE and is considered OPERABLE if it contains a sufficient volume of water at or below the maximum temperature that would allow the SWS to operate for at least 22 days following the design basis LOCA without the loss of NPSH, and without exceeding the maximum design temperature of the equipment served by the SWS. To meet this condition, the UHS temperature should not exceed 95°F and the level should not fall below 218 ft MSL during normal unit operation.

APPLICABILITY

In MODES 1, 2, 3, and 4, the UHS is required to support the OPERABILITY of the equipment serviced by the UHS and required to be OPERABLE in these MODES.

In MODE 5 or 6, the OPERABILITY requirements of the UHS are determined by the systems it supports.

ACTIONS

Notes 1 and 2 have been added in the ACTIONS to provide a clear expiration date for Conditions A and B and associated Required Actions and Completion Times, and a date that Condition C and its associated Required Actions and Completion Times will become applicable. Prior to midnight October 1, 1999, if the LCO is not met, refer to Conditions A or B and associated Required Actions and Completion Times. On midnight October 1, 1999, and thereafter, refer only to Condition C if the LCO is not met.

A.1

When service water temperature is greater than 95°F, it must be restored to ≤ 95°F within 8 hours. This Required Action is necessary to return operation to within the design basis of the Service Water System. The 8 hour Completion Time is acceptable considering the low probability of a Design Basis

(continued)

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

SAFETY EVALUATION

BY THE OFFICE OF NUCLEAR REACTOR REGULATION

ULTIMATE HEAT SINK TECHNICAL SPECIFICATION

H. B. ROBINSON, UNIT 2

DOCKET NO. 50-261

1.0 INTRODUCTION

By letter dated April 12, 1999, Carolina Power & Light Company (CP&L or the licensee) requested a temporary change to the Technical Specifications (TS) for the H. B. Robinson Steam Electric Plant, Unit 2, in accordance with 10 CFR 50.90. Specifically, the licensee proposed to revise TS 3.7.8, "Ultimate Heat Sink (UHS)" to provide a new Required Action and Completion Time for the UHS in the event that service water (SW) temperature exceeds the design limit of 95 degrees Fahrenheit (°F). The proposed new Action would require restoring the SW temperature to within the design limit with a Completion Time of 8 hours.

2.0 BACKGROUND

During the summer of 1998, in anticipation of the UHS temperature exceeding 95°F, the licensee had requested an identical change to TS 3.7.8 by a letter dated June 26, 1998, as supplemented by their letter dated July 22, 1998. This would have allowed plant operation above 95° F for up to 8 hours, and the purpose of the change was to reduce the risk associated with plant shutdown transients. The TS change at that time was supported by an engineering evaluation, which concluded that the components that rely on the SW System (SWS) for cooling are able to operate at a SW temperature of up to 99°F. The request proposed a similar change to TS 3.7.8 with an upper temperature limit of 99°F and, as a long-term resolution for this condition, committed to perform an engineering analysis to justify an increase in the allowed SW temperature by May 1999. The staff then issued a Notice of Enforcement discretion followed by exigent license amendment no. 179 to TS 3.7.8 by a letter dated July 29, 1998, allowing such a request to exceed the UHS temperature for 8 hours and limited the effective period of the change to last through the summer months, until September 30, 1998. The service water, however, did not exceed the temperature and the amendment expired on September 30, 1998. Since the summer of 1998, CP&L has further evaluated the capability of components cooled by the SWS to perform their intended function in much more detail (see details below) but has not been able to completely evaluate all issues to support a final revision to the UHS temperature prior to the summer of 1999. Hence, the licensee submitted this request for temporary change to TS 3.7.8 to be in effect until September 30, 1999, by which time the licensee will be able to complete the analysis supporting a permanent revision.

The UHS provides a heat sink for the operating and decay heat produced by various plant components during normal operation, transients, and accidents. The SWS and the Component Cooling Water (CCW) System are used to transfer heat from plant components to the UHS.

The UHS at Robinson is defined as the Lake Robinson Impoundment, including necessary retaining structures, and the canals or conduits connecting the sources with, but not including, the cooling water intake structures. The UHS temperature is a function of insolation, operation of H. B. Robinson, Units 1 (fossil) and 2 (nuclear), hydrology of the Lake Robinson watershed, and meteorological conditions which affect the efficiency of evaporative cooling, natural convection, and diurnal radiant heat losses. During the summer, the average heat input due to insolation is comparable to the total heat input from both Robinson Units 1 and 2. Condensing cooling water and SW discharged from the plant are returned to greater Lake Robinson via a 4.2 mile-long discharge canal, which terminates in the lake near its upper end (SWS intake is at the lower end of the lake). During full power operation, the normal transient time of water through the discharge canal is approximately 3.5 hours. Hence, the effect of a plant shutdown in the event that the SWS temperature limit is exceeded will not immediately be effective on the temperature of the SW entering the plant. However, in the summer months during periods of hot weather, a diurnal effect of alternating insolation of the lake water during the day and increased radiant and evaporative heat loss during the night results in a variation of lake water temperature around a 24-hour cycle.

The current TS 3.7.8 specifies the following Actions and Completion Times for the UHS inoperable for any reason, including SWS temperature >95°F:

C.1 Be in Mode 3 within 6 hours, AND

C.2 Be in Mode 5 within 36 hours.

The current TS contains three conditions. Conditions A and B apply to a previous one-time amendment. Conditions A and B were in effect until September 30, 1998, and Condition C came into effect after September 30, 1998. The proposed change restores Conditions A and B to be in effect until September 30, 1999.

The licensee proposed to retain the requirements of C.1 and C.2 as B.1 and B.2 for the new specified Condition B which would be applicable if the Required Actions and Completion Times of Condition A are not met OR the UHS is inoperable for reasons other than Condition A (for example, low water level). The new Condition A would specify the following Actions and Completion Times with SW temperature >95°F:

A.1 Restore service water temperature to $\leq$95°F within 8 hours, AND

A.2 Verify service water temperature is $\leq$99°F every 1 hour.

Therefore, if the SW temperature was not restored to within limits within 8 hours, the UHS would essentially be considered inoperable and B.1 and B.2 would apply (same Actions and Completion Times as current TS).

Additionally, a NOTE has been added to the Actions section which states that Conditions A and B shall not apply after September 30, 1999, at which time the current Condition C will apply.

3.0 EVALUATION

The SWS temperature is an input to the containment analysis contained in Final Safety Analysis Report (FSAR) Section 6.2. The SWS temperature is also a design assumption for the spent fuel pool cooling system (SFPCS), auxiliary feedwater (AFW) system, CCW system and its loads, the emergency diesel generators (EDGs), containment air recirculation cooling (CARC) system, room coolers for certain safety-related areas, and non-safety-related systems. Where components rely upon SWS temperature to maintain the components within operating temperature limits, the licensee's evaluation determined that the components could withstand SW temperatures up to 99°F.

Since the summer of 1998, CP&L has further evaluated the capability of components cooled by the SWS to perform their intended function. Some components, such as the EDGs, Containment Air Recirculation System Fan Coolers, Steam Driven Auxiliary Feedwater Pump, and CCW System (including Spent Fuel Pool Cooling), were specifically reevaluated because of the complex effect of operation at a higher SW temperature. In addition, the ability to achieve cold shutdown following a fire and a Station Blackout were evaluated at a higher SW temperature. These calculations and evaluations show that these components are fully capable of performing their intended safety function up to a SW temperature of 99°F. The capability of the Containment Air Recirculation Fan Coolers to remove heat from the containment following a main steamline break (MSLB) inside containment or a loss-of-coolant accident (LOCA) inside containment could not be evaluated in detail without reanalyzing these events at the higher SW temperature. Therefore, CP&L is reanalyzing the containment response to an MSLB inside containment and a Large Break LOCA inside containment. As committed to in previous correspondence, CP&L will submit a proposed change to the TS, that justifies plant operation at a higher SW temperature for an unlimited period of time when these analyses are completed.

Permanent UHS Temperature Revision - The containment analyses use the SWS temperature of 95°F as a limiting input parameter. Therefore, it is appropriate to limit the amount of time that SWS temperature may be above the 95°F limit. Since the probability that a design basis accident (DBA) would occur during this time period is low, and the expected temperature increase above the limit is small, the proposed change is of low safety significance. To assure that the safety significance remains low, the licensee, in its July 22, 1998, submittal, revised the proposed change to include an upper limit of 99°F to further ensure that component temperature limits will not be exceeded following a DBA. All of these justifications were considered in the staff's position conveyed previously through the safety evaluation dated July 29, 1998, and are still valid until the issues related to containment cooling are resolved as a part of the permanent revision the licensee is expected to complete by May 1999.

8-hour AOT - Also, in support of a permanent change for an 8-hour AOT for the UHS, the licensee submitted a separate request via their submittal dated March 26, 1999, citing other "similar" AOTs for the refueling water storage tank (RWST) and containment air temperature. The staff's position conveyed previously through the safety evaluation dated July 29, 1998, was that similarities among RWST and containment air specification limits did not warrant permanent changes to UHS action or completion times. The staff concludes that this position is still valid. Also, a generic change to the Standard TS as proposed by the licensee and approved by the Improved TS Task Force of the Westinghouse Owners' Group (WOG) for a generic revision to

NUREG-1431 is currently under staff review for adoption as a permanent AOT. The licensee has volunteered to be the lead plant to work with the WOG to provide additional information to resolve staff comments as discussed above.

The review and approval of such a permanent change either via the owner's group or the NRC staff for a temperature revision to the UHS for a plant-specific change is expected to take some length of time. In order to avoid transients associated with plant derating in the event of any unusually hot and dry weather that the licensee might encounter this summer, the staff concludes that a temporary amendment as requested should be allowed. The 8-hour Completion Time of Action A.1 for being slightly above the design basis temperature is acceptable on a temporary basis because the cooled equipment has been analyzed and found to remain within the manufacturer's limits in the event of an accident and the probability of a DBA occurring during the 8-hour period is small. While the permanent AOT is being pursued through the WOG, the staff finds that there is adequate technical justification to accept the proposed changes to TS 3.7.8 on a temporary basis through September 30, 1999.

The staff also concludes that the proposed modifying Note is acceptable because it is necessary to reflect the temporary aspects of the proposed TS change.

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 (64 FR 24193). 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 change to TS 3.7.8 provides a significant amount of additional flexibility without any significant reduction in plant safety because of its temporary nature and supporting analysis regarding the cooled equipment. The proposed change is, 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.

Principal Contributor: Ram Subbaratnam

Date: June 4, 1999

cc:

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AMENDMENT NO. 183 TO FACILITY OPERATING LICENSE NO. DPR-23 - H. B. Robinson, UNIT 2

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