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

April 27, 2000

MEMORANDUM TO: Richard P. Correia, Chief, Section 2
Project Directorate II
Division of Licensing Project Management

FROM: Ram Subbaratnam, Project Manager, Section 2
Project Directorate II
Division of Licensing Project Management

SUBJECT: SUMMARY OF MEETING WITH CP&L STAFF ON THE ULTIMATE HEAT SINK TECHNICAL SPECIFICATION CHANGE (TAC NO. MA5612)

Attached is the summary of the meeting held on February 4, 2000, at the U.S. Nuclear Regulatory Commission (NRC) office at 11555 Rockville Pike, Rockville, Maryland, with representatives from Carolina Power and Light Company's H. B. Robinson Steam Electric Plant, Unit 2, to discuss the Ultimate Heat Sink Technical Specification change submittal.

Attachment: Meeting Summary w/Enclosures

UNITED STATES
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April 27, 2000

LICENSEE: Carolina Power & Light Company

FACILITIES: H. B. Robinson Steam Electric Plant (HBRSEP2)

SUBJECT: SUMMARY OF CAROLINA POWER & LIGHT COMPANY (CP&L) WORKING LEVEL MEETING TO DISCUSS TECHNICAL SPECIFICATION (TS) AMENDMENT SUBMITTALS OF MAY 27, 1999, AND MARCH 26, 1999, ON ULTIMATE HEAT SINK (UHS) AT HBRSEP2

A meeting with CP&L was conducted on February 4, 2000, at the U.S. Nuclear Regulatory Commission (NRC) offices at 11555 Rockville Pike, Rockville, Maryland. The purpose of the meeting was for the licensee to discuss the UHS TS amendment request submittal for a permanent temperature increase from the current level of 95°F to 97°F. The meeting attendees are listed in Enclosure 1.

Background

The Office of Nuclear Reactor Regulation (NRR), Division of Licensing Project Management (DLPM) Project Manager gave a brief background account of the agency efforts expended on the issue in the past and the current status of the project as of January 2000. In their presentation, the licensee gave an introduction, background, and an outline on issues for long-term resolution of the UHS problem (Enclosure 2). The licensee described the past history as to how, during the two successive years, HBRSEP2 faced unusually hot summers that necessitated issuance of two Notice of Enforcement Discretions (NOEDs). The first NOED was issued on June 27, 1998, which was followed up with an exigent amendment (179) valid until September 30, 1998. The TS amendment allowed an 8-hour period of time for HBRSEP2 to temporarily exceed the UHS temperature of 95°F by 2°F with a surveillance condition for monitoring the UHS temperature every hour. The licensee had committed to make, as a long-term resolution of the problem, a permanent TS amendment request submittal by December 1998 that would request authority to increase the allowable UHS temperature to 97°F. Because of the complexity and scope of this submittal, and considering the extensive nature of multi-discipline review of this submittal that required contractor review of certain calculations, the Project staff agreed to a licensee request for an extension for such a submittal until May 27, 1999. The licensee was also given another temporary TS amendment (183) to continue an 8-hour allowed outage time (AOT) to last the summer of 1999. Although the licensee's experience with the summer of 1998 was not particularly harsh and the resultant fact was that it did not actually exceed the allowed AOT, the experience with summer 1999 was different. HBRSEP2 was forced to seek another NOED for exceeding the AOT beyond the allowed 8 hours to 72 hours on May 27, 1999, when the UHS temperature actually exceeded 95°F and held that level for 9 hours. NRC issued an exigent amendment (184) that revised the surveillance clause to increase the AOT to 72 hours. This amendment expired on September 30, 1999.

February 4, 2000 Meeting

To expedite the issuance of the UHS temperature amendment before the summer of 2000, a working level meeting was held on February 4, 2000, to resolve the open issues. The licensee's presentation materials are in Enclosure 2, and the staff's questions presented during the meeting are in Enclosure 3. Also discussed during the meeting were the results from the computer runs on the containment analysis using computer code COCO. The code was used by Westinghouse, the contractor for CP&L, to calculate peak loss-of-coolant accident (LOCA) containment pressure. The COCO results were slightly different than the set of answers for the same data using the CONTEMPT code used by the staff. The staff also had a follow-up conference call with the licensee on February 15, 2000, which related further questions pertaining to the COCO/CONTEMPT computer runs in which results of the containment temperature following a LOCA and Main Steam Line Break were discussed. The licensee agreed to make a formal response to all the answers to the staff's questions, which will be treated as a supplement to the original submittal of May 27, 1999.

Tentative Project Schedule

License Submittal (Supplement to original submital)	February 25, 2000
Staff Review and Safety Evaluation	April 15, 2000
Staff Issues Amendment	May 1, 2000

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. List of attendees
2. Licensee handout
3. NRC draft questions

cc w/encls: See next page

February 4, 2000 Meeting

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/RA/

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ATTENDEE LIST FOR THE MEETING OF FEBRUARY 4, 2000

NAME	ORGANIZATION
Ram Subbaratnam	NRC/DLPM/NRR
Herbert Berkow	NRC/DLPM/NRR
Craig Harbuck	NRC/DRIP/NRR
Robert Jasinski	NRC/OPA
Walton Jensen	NRC/DSSA/NRR
Hukam Garg	NRC/DE/EEIB/NRR
John Knox	NRC/DE/EEIB/NRR
Richard Correia	NRC/DLPM/NRR
James Tatum	NRC/SPLB/NRR
Roger Stewart	CP&L/RNP
David Martrano	CP&L/RNP
Richard Warden	CP&L/RNP
Harold Chernoff	CP&L/RNP
Albert Garrou	CP&L/RNP
Craig Thompson	Westinghouse

Enclosure 1

Ultimate Heat Sink Technical Specifications

Meeting with NRC Staff

February 4, 2000

CP&L

Enclosure 2

Ultimate Heat Sink (UHS) - Agenda

- Introduction
- Background
- Technical Specifications
- Long Term Resolution
- Questions and Discussion

CP&L

UHS - Background

- UHS Provides a Post Accident 22 Day Cooling Capacity
- Prior to ITS UHS Temperature in UFSAR only
- Prior to October 1997 NPDES Permit Effectively Limited UHS Temperature
- October 1997 - NPDES Permit Changed

CP&L

UHS - Technical Specifications

- 6/26/98 - Proposed Exigent TS Change
  - 8 hr AOT > 95^0F
- 6/27/98 - NOED Request
  - 8 hr AOT > 95^0F
  - Verify $\leq$ 99^0F hourly
  - Granted 6/27/98
  - 7/1/98 NRC NOED letter
  - Committed to UHS LCO limit increase

CP&L

UHS - Technical Specifications

- 7/22/98 - Supplemented 6/26/98 Exigent TS Change Added
  - Verify $\leq 99^0$F hourly from NOED
  - 9/30/98 Sunset clause note
- 7/29/98 - NRC Issues Amendment 179
  - 8 hr AOT > 95^0F
  - Verify $\leq 99^0$F hourly
  - 9/30/98 Sunset clause note

CP&L

UHS - Technical Specifications

- 2/99 discussions with NRC find NRC favorable to revisiting AOT
- 3/26/99 - Proposed TS Change
  - 8 hr AOT > 95^0F
  - Shutdown > 99^0F
  - Currently under NRC review as TSTF item
- 4/12/99 - Proposed One-time TS Change
  - Revise Amendment 179 for 1999 Applicability

UHS - Technical Specifications

- 5/27/99 - Proposed TS Change Increasing LCO Temperature Limit
  - Verify $\leq 99^0F$ hourly
  - Shutdown $> 99^0F$
- 6/4/99 - NRC issues Amendment 183
  - 9/30/98 Sunset clause note revised to 9/30/99

CP&L

UHS - Technical Specifications

- 7/30/99 - Proposed Exigent TS Change
  - 72 hr AOT > 95^0F
  - Verify $\leq$ 99^0F hourly
  - Shutdown > 99^0F
  - 9/30/99 Sunset clause note
- 7/31/99 - NOED Request
  - 72 hr AOT > 95^0F
  - Verify $\leq$ 99^0F hourly
  - Granted 7/31/99
  - 8/3/99 NRC NOED letter

CP&L

UHS - Long Term Resolution

- **Long Term Resolution**
  - **Final TS Configuration**
    - **UHS temperature $\leq 97^0$F and**
    - **"Evaluation" required action**
- **Challenges**
  - **Support completion of NRC review of 5/27/99 LCO limit increase (UHS temperature $\leq 97^0$F)**
  - **Submit and support NRC review of "evaluation" required action**

CP&L

Questions and Discussion

- Discussion of NRC Staff Questions

CP&L

Request For Additional Information

I. Plant Systems

1. Please explain how the specific values were obtained and how uncertainties are accounted for when performing surveillance associated with the following items:

   - Containment Pressure High High NOMINAL TRIP SETPOINT of 10 psig.
   - Containment Pressure High High ALLOWABLE VALUE of 10.45 psig.
   - IVSW Tank Pressure and IVSW Nitrogen Bottle Pressure ≥44.6 psig
   - MFIV Closure Time of 50 seconds.
   - MSIV Closure Time of 2 seconds.

2. The discussion in the Bases Section (Pg. B3.6-26 of your submittal) indicates that the initial pressure condition originally used in the containment analysis was 1.0 psig. This appears to be inconsistent with the information provided in the submittal (Pg. 17). Please explain this apparent discrepancy.

3. The submittal (page 21) indicates that, for the main steamline break (MSLB) containment analysis, superheating of steam was not considered because it has little effect on the peak temperature and pressure of large dry containments. It has been the staff's experience that superheating of steam can cause the peak containment temperature to increase. Please confirm that the superheat does not affect the limiting containment temperature profile.

4. The submittal (page 21) indicates that feedwater leakage through the main feedwater regulating valves and the main feedwater isolation valves was assumed to be 75 gpm, and the feedwater leakage rate with the MFIV failed open was assumed to be 125 gpm. Please explain and justify these assumptions.

5. The submittal (page 22) indicates that if a main feedwater regulating valve is assumed as the single failure, 1818 ft3 of feedwater is assumed. What about the case for failure of a main feedwater isolation valve? Please explain the basis for the values that are assumed.

II. Environmental Qualification of Equipment susceptible to SW Temperature

6. Based on February 4, 2000, discussions with the licensee, it was determined that containment analysis demonstrates that the maximum peak containment air temperature following an SLB may exceed the component environmental qualification temperature limit of 280°F. Meeting discussion indicated that dry super-heated containment air temperature following an SLB (prior to initiation of containment spray), may exceed the 280°F qualification limit by more than 50°F for some time period less than 30 seconds for electrical, instrumentation, and control components that can be subjected to the temperature transient following an SLB. Please provide results of the analysis which demonstrates environmental qualification.

III. Containment Systems

7. The submittal (page 9) indicates that WCAP-8264 was used to calculate LOCA mass and energy release. Page 10 indicates that WCAP-10325 was used. Is this inconsistent?

8. The submittal (page 9) indicates that the COCO code was used to calculate peak LOCA containment pressure. The COCO code has not been approved by the NRC for this purpose. One reason that COCO was not approved is that the code calculates peak LOCA containment pressures about 2 psi lower than the CONTEMPT code used by the staff. The reason for this is that COCO assumes that the liquid exiting the break is flashed to the total pressure of the containment and does not mix with the atmosphere in falling to the floor. This is discussed on page 15. This is inconsistent with the assumption for mixing of the containment spray with the atmosphere, which is assumed to be 100% effective by COCO. See page 16.

9. Mass and energy release from a postulated MSLB is stated to be calculated using the LOFTRAN code. Reference to WCAP-8822 is made. The version of WCAP-8822 that we have describes calculation of mass and energy release using the TRANFLO and MARVEL codes. Please explain this apparent discrepancy.

10. WCAP-8822 provides tables of mass and energy releases with and without liquid entrainment at various power levels and break sizes. Only two power levels and one break size was considered in the CP&L submittal. Should other break sizes and power levels be considered?

11. One consideration for containment MSLB analysis is the liquid mass fraction that is assumed to be condensed on the internal heat structures. NUREG-0588 recommends a value of 0.92 for this parameter. This is input as word 13 on card 11001 for the CONTEMPT-LT/28 computer code. Use of the CONTEMPT code by CP&L is discussed on page 18. Discuss how use of this parameter was considered in the COCO analyses for MSLB.

IV. Instruments & Controls

12. Provide the details, including the logic diagram/schematic diagram, to explain how the CS actuation circuitry is blocked during the switch over and the commitment to IEB 80-06 is met. Also, is there any indication to the operator when the actuation signal is blocked?

13. Were the instrument setpoints determined based on the staff's approved methodology?