

PMSummerColpEM Resource

From: Simms, Tanya
Sent: Wednesday, April 14, 2010 8:51 AM
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Cc: PMSummerColpEM Resource; Sebrosky, Joseph
Subject: Draft RAI 4578 Related SRP Section 9.2.2 for Summer Units 2 and 3
Attachments: RAI 4578 draft.doc

To All,

Attached is Draft RAI 4578 related to SRP Section 9.2.2 for Summer Units 2 and 3. Please contact me if you desire a phone conference regarding this RAI. If no response is heard by close of business April 16, 2010, the final RAI will be issued.

Thank you,
Tanya

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Options

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Request for Additional Information No. 4578 Revision 0
Virgil C. Summer Nuclear Station, Units 2 and 3
South Carolina Electric and Gas Company
Docket No. 52-027 and 52-028
SRP Section: 09.02.02 - Reactor Auxiliary Cooling Water Systems
Application Section: 9.2.2

QUESTION from Balance of Plant Branch 1 (SBPA)

09.02.02-***

The V.C. Summer COL Application, Part 7, Departure and Exemptions, provides justification to the maximum safety wet bulb (noncoincident) air temperature of 87.3 °F. This corresponding site characteristic value exceeds the AP1000 DCD site parameter by 1.2 °F. Analysis of the maximum safety wet bulb (noncoincident) air temperature at a bounding value of 87.4 °F has been performed by the COL applicant. The detailed justification was performed on the following components/systems.

- Containment pressure design limits
- IRWST temperature control with normal residual heat removal system
- Component cooling water system
- Nuclear Island nonradioactive ventilation system capability

This departure/exemption was evaluated by the staff against the AP1000 DCD submittal, APP-GW-GLE-036, "Impact of a revision to the current Wet Bulb Temperature identified in Table 5.0-1 (Tier 1) and Tier 2 Table 2-1 (Sheet 1 of 3) of the DCD (Revision 16)" to support Levy and Turkey Point 6 and 7. The staff concludes that the applicant should describe in their applicant in a similar manner the change justification at VC Summer to the extent of the AP1000 justification and evaluation. Specifically, the departure/exemption justification should include;

- The performance of passive containment cooling system
- Passive heat sinks associated with the main control room habitability system
- Normal, decay, and spent fuel pool heat removal
- HVAC design
- Chiller water system design
- Component cooling and service water system design
- Steam and power conversion
- Circulating water system and turbine building closed cooling water system design

In addition, specific to Section 5.4.7, "Normal Residual Heat Removal System," in the VC Summer's COL Revision 2 submittal, the applicant incorporated by reference DCD Section 5.4.7 with the exception of the following departure in Subsection 5.4.7.1.2.3:

VCS DEP 2.0-2 The component cooling water system supply temperature to the normal residual heat removal system heat exchangers is based on an ambient design wet bulb temperature of no greater than 87.3°F (100 year return estimate of 2-hour duration). The 87.3°F value is assumed for normal conditions and transients that start at normal conditions.

The staff reviewed the applicable RNS design basis subsections and determined that additional information is required by the applicant in order for the staff to complete the evaluation.

With plant operation at the design limit and the ambient design wet bulb temperature at the proposed 87.3°F, describe if the CCW have sufficient heat removal capacity such that the RNS remains within the design basis as described in DCD Subsection 5.4.7.1 and provide a discussion of the evaluation performed that confirms the following subsections:

- A. Subsection 5.4.7.1.2.1 that the normal residual heat removal system reduces the temperature of the reactor coolant system from 350° to 125°F within 96 hours after shutdown and the RNS system maintains the reactor coolant temperature at or below 125°F for the plant shutdown;
- B. Subsection 5.4.7.1.2.3 that the RNS system limits the in-containment refueling water storage tank water temperature to less than boiling temperature during extended operation of the passive residual heat removal system and not greater than 120°F during normal operation.