PMSummerColpEM Resource

From: Sebrosky, Joseph
Sent: Wednesday, June 02, 2010 2:10 PM
To: 'MONROE, AMY'
Cc: SummerCOL Resource; Habib, Donald
Subject: preliminary draft of topics for discussion regarding wet-bulb

Amy,

Per our discussion, below is a preliminary draft of the issues associated with wet bulb temperature exemption. **Please note the list is subject to change.**

The draft RAI response to RAI 6.2.1-1 and 9.2.2-1 were provided to the staff in emails on 5/21/10 (see ML101410204 for RAI 6.2.1-1 and ML101410201 for 9.2.2-1). The staff reviewed calculation packages that were referenced in these draft RAI responses and determined that the draft RAI responses and calculation packages were lacking in the following areas:

1. The calculation packages that support RAI 6.2.1-1 and 9.2.2-1 refer to Turkey Point and Westinghouse AP1000 and do not mention Summer. These calculation packages should reference Summer. In addition, the draft RAI responses should be changed to state with specificity which calculation packages are referenced and what aspect of the RAI response is being addressed by each calculation. The reference in the RAI response should include the calculation package number, title, and revision number. It should be made clear that the referenced calculation packages fall under Summer's QA program.

2. Regarding draft RAI response 6.2.1-1, the draft response and calculation package associated with the response contain a sensitivity analysis showing the containment pressure as a function of time for the first 10,000 seconds. The applicant needs to address the peak pressure for 24 hours and not just the first 3 hours. Although the sensitivity analysis shows close correlation with different wet bulb temperature assumptions, the staff believes that there is a possibility that assumptions regarding the wet bulb temperatures will have more of an impact on peak pressure at the end of the 24 hour period than at the beginning. Therefore, without more data the staff is unable to conclude that the containment pressure at the end of 24 hours is ½ of the peak pressure for the wet bulb temperature of 87.3F.

3. For the high-capacity chilled water system, one of the calculation packages associated with draft RAI 9.2.2-1 includes a summary discussion that the high capacity chilled water system chiller size should be changed from 2 - 300 ton air-cooled units to 2 – 400 ton air-cooled units. The change to the chiller size is not discussed in the RAI response or in the FSAR. A change to the high capacity chiller size would constitute a departure from the DCD.

4. For the low-capacity chilled water system, one of the calculation packages associated with draft RAI 9.2.2-1 states that the loads on the low capacity chilled water system will change from 164 tons to 182 tons based on the increase in the wet-bulb temperature. Again, there is no mention of this change in the draft RAI response.

5. The staff expected to see more of a discussion in the 9.2.2-1 draft RAI response regarding the affect the increased wet bulb temperature would have on spent fuel cooling under the following scenarios: a) normal refueling, b) full core offload with both spent fuel cooling trains running, and 3) full core offload with one train of spent fuel pool cooling train running.

6. The staff expected to see more of a discussion in the 9.2.2-1 draft RAI response regarding the affect the increased wet bulb temperature would have on RTNSS availability controls including the bases for these controls.

7. Neither the draft 9.2.2-1 RAI response nor the calculation packages address all aspects of the question. There is a statement in the draft RAI response that areas not affected by the change in VC Summer maximum safety wet bulb temperature include: HVAC design, including the main control room passive heat sink performance, chilled water system design, steam and power conversion system design, and circulating water system and turbine building closed cooling water system design. There is no discussion in the draft RAI response as to why these systems are not affected.

8. One of the calculation packages associated with draft RAI 9.2.2-1 response notes that the component cooling water return temperature is 97.4F which is below the AP1000 DCD value of 100F. However, this insight is not included in the draft RAI response.

9. There is no discussion in the draft RAI response addressing the staff's question requesting a discussion of the normal RHR's system's ability to maintain the incontainment-refueling water storage tank less than boiling during PRHR actuation and not greater than 120F during normal operation.

10. None of the calculation packages reviewed by the staff supported the statement in the draft RAI 9.2.2-1 response that the with the increased heat loads resulting from the higher maximum safety wet bulb temperature, the low capacity chilled water system maintains the Nuclear Island Non-radioactive System's (VBS) capability to maintain the main control room, and 1E electrical rooms below 75 ºF with a single train of VBS and the Chilled Water System (VWS) in service.

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