February 28, 2001

MEMORANDUM TO: File

FROM: John F. Stang, Senior Project Manager, Section 1 ***/RA/***
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

SUBJECT: DONALD C. COOK NUCLEAR PLANT, UNITS 1 AND 2 - ACCEPTANCE REVIEW REGARDING LICENSE AMENDMENT REQUEST, "CONTROL ROOM HABITABILITY AND RESPONSE TO GENERIC LETTER (GL) 99-02 - LABORATORY TESTING OF NUCLEAR-GRADE ACTIVATED CHARCOAL," DATED JUNE 12, 2000 (TAC NOS. MA9394 AND MA9395)

During the review of the subject proposed license amendment and response to generic letter (GL) 99-02, the staff determined additional information was necessary to complete its review. Attached is the draft request for additional information (RAI). In accordance with Nuclear Reactor Regulation (NRR) Office Letter 803, the draft RAI will be E-Mailed to the licensee and a conference call will be arranged to discuss the RAI. Once the Nuclear Regulatory Commission (NRC) staff and the licensee have a common understanding of the information required, the RAI will be issued formally to the licensee.

Docket Nos. 50-315 and 50-316

Attachment: As stated

ACCEPTANCE REVIEW FOR
D. C. COOK UNITS 1 AND 2
SUBMITTAL C06000-13 CONTROL ROOM HABITABILITY , DATED JUNE 12, 2000

The following questions refer to the control room emergency ventilation system (CREVS), the engineered safety feature ventilation system (ESFVS), and the storage pool ventilation system (SPVS), unless otherwise noted:

1. Requested Action 2 of generic letter (GL) 99-02 states, "If the system has a face velocity greater than 110 percent of 0.203 m/s [40 ft/min], then the revised technical specification (TS) should specify the face velocity."

   Please refer to or provide docketed information which indicates the actual system face velocity and/or the actual residence time for the CREVS, ESFVS, and SPVS and describe how it is calculated for these systems.

   The actual system face velocities can be calculated by dividing the maximum accident condition system flow rates specified in the TS (nominal + typically 10 percent upper value) by the total exposed surface area of the charcoal filter media. (The guidance on calculation of the residence times in American Society of Mechanical Engineers (ASME) AG-1-1997, Division II, Sections FD and FE, Articles I-1000, or in ANSI N510-1975 can be used to calculate the actual system face velocities). It should be noted that the face velocity should be consistent with the bed depth and residence time. (Bed Depth = Face Velocity x Residence Time)

2. In order for the staff to verify that a safety factor as low as 2 is used, the staff needs to know the charcoal adsorber removal efficiencies which are credited in the current and proposed radiological accident analyses for organic iodide.

3. On page 19 of Attachment 1 to Letter C0600-13, it is stated that in case of CREVS the recent accident analyses assume 95 percent iodine removal efficiency for single-fan operation under normal system flow rate and 80 percent removal efficiency for two-fan operation at an increased face velocity during the first two hours of the accident. It is also stated that "...The 80 percent efficiency calculation includes a safety factor of 2. To ensure the accident analysis assumptions remain valid for both single and two-fan operation, the surveillance requirement is revised to demonstrate a penetration of less than or equal to 1 percent when tested at normal system flow rate."

   (a) Clarify how at 80 percent filter efficiency the safety factor of 2 is calculated.

   (b) For two-fan operation, what is actual increased maximum face velocity across the charcoal bed.

   (c) Explain how 80 percent filter efficiency at increased face velocity compares with 95 percent filter efficiency at normal system flow rate.

   (d) Demonstrate how the 1 percent penetration at normal system flow rate as the surveillance requirement bound both single and two-fan operation cases.

4. For accidents where the CREVS is not operated in the emergency mode, provide the bases for the assumption of only 1000 cfm of unfiltered makeup since there is no indication that other sources of unfiltered inleakage are considered.

5. For accidents where the CREVS is in the emergency lineup, your submittal assumes 98 cfm of unfiltered inleakage. Please clarify why the 98 cfm of unfiltered inleakage for Unit 2 is limiting following the damper repair in Unit 1. It is not clear how the 107-28 scfm due to damper repair in Unit 1 was obtained.

6. On page B 3/4 7-4a of your submittal, operability is defined by maintaining a positive pressure of greater than or equal to 1/16 inch water gauge relative to the outside atmosphere. However, industry test results have determined that pressurization (at any level i.e. 1/16, 1/8, etc.) does not demonstrate control room envelope/pressure boundary operability.

    a. Provide the basis for your proposed TS changes defining control room envelope/pressure boundary operability based on 1/16 inch water gauge pressure relative to the outside atmosphere.

    b. The requested 24-hour allowed outage time (AOT) is tied to the definition of control room envelope/pressure boundary operability. In order for the Nuclear Regulatory Commission (NRC) staff to find the request for a 24-hour AOT acceptable, the request must be in accordance with the Technical Specification Task Force-287 (TSTF-287), which has been generically approved by the staff. Note, TSTF-287 does not include a definition of control room boundary integrity.

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