December 29, 2000

MEMORANDUM TO: John A. Grobe, Director
Division of Reactor Safety
Region III

FROM: Suzanne C. Black, Deputy Director ***/RA/***
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

SUBJECT: DONALD C. COOK (D. C. COOK), UNITS 1 AND 2 - TIA 2000-08 SEISMIC QUALIFICATION OF ICE AT THE DONALD C. COOK PLANT (TAC NOS. MA9315 AND MA9316)

REFERENCES:
(1) WCAP - 8110 Supplement 9, "Ice Fallout From Seismic Testing of Fused Ice Basket."

(2) Letter from the Atomic Energy Commission (AEC) to Westinghouse Electric Corporation, dated November 21, 1974, Regarding Topical Report (WCAP - 8110 Supplement 9) Evaluation.

Region III identified a concern associated with the seismic qualification of ice in the ice baskets at the D. C. Cook Nuclear plant. The inspectors discovered that the licensee did not consider the potential for ice fallout during seismic events with regard to the limits and restrictions for ice fusion time specified in the Reference 2 safety evaluation. Following a refueling outage, the ice recently reloaded into ice baskets requires sufficient storage time to allow the ice particles to fuse to prevent ice fallout during a seismic event at power. If sufficient ice falls out of the ice baskets during a seismic event, the lower inlet doors of the ice condenser could be blocked degrading the ice condenser's capability to mitigate the post loss-of-coolant-accident (LOCA) containment pressure buildup.

By memorandum dated May 17, 2000, Region III requested technical assistance from the Office of Nuclear Reactor Regulation (NRR) in evaluating the seismic qualification of ice in the ice baskets at D. C. Cook Unit 1 and 2.

Specifically, Region III requested NRR to determine:

1. Is a specific wait time for ice fusion part of the D. C. Cook licensing basis?

    a. If so, what is the minium required wait time?

    b. If not, following ice reloading operations that occur during refueling outages, what if any wait time is needed to allow for ice fusion to ensure operability of the ice condenser?

2. What licensing basis or Nuclear Regulatory Commission (NRC) requirements apply to design changes made to ice baskets that affect the ice retaining characteristics of the ice baskets?

3. Do the AEC restrictions associated with ice loading and changes to ice basket design discussed in Reference 2 apply to D. C. Cook? If so, how?

The D. C. Cook Updated Final Safety Analysis Report (UFSAR) references Westinghouse Topical Report, WCAP - 8110 Supplement 9 (Reference 1), which addressed the issue of ice fusion time and resulting ice fall fallout from seismic testing. An AEC letter to Westinghouse (Reference 2), dated November 21, 1974, documented the staff safety evaluation of WCAP-8810, Supplement 9. In the safety evaluation, the staff found the topical report acceptable subject to certain limits and restrictions. The safety evaluation concluded that sufficient ice particle fusion is achieved after a minimum of five weeks storage to assure adequate ice retention for the design basis earthquake for all land-based ice condenser plants. The conditions and restrictions specified in the AEC safety evaluation are the basis for the staff's acceptance of Reference 1. The licensee has incorporated Reference 1 into the UFSAR. This incorporation constitutes the licensing basis concerning ice fusion time for D. C. Cook Units 1 and 2, which as stated above, is a minimum of five weeks. Therefore, the minimum storage time for adequate ice fusion is five weeks.

The licensee at any time may decide to deviate from the conditions and restrictions specified in Reference 2. Prior to making such changes, the licensee is required to follow the proper regulatory process. Specifically in this case, changes to the UFSAR are controlled by 10 CFR Part 50.59. In a telephone conference on September 9, 2000, Region III and NRR staff discussed this issue with the licensee and expressed the above position. The licensee indicated that they are in the process of analyzing and developing a position to address this concern.

This response to the task interface agreement (TIA) will be forwarded to the REXB (Event Assessment, Generic Communications and Non-Power Reactors Branch) to determine if a generic communication is warranted.

This completes NRR's review and evaluation efforts under TIA 2000-08 and TAC Nos. MA9315 and MA9316. If you have any questions regarding this issue, please contact J. Stang of my staff at (301) 415-1345.

Docket Nos. 50-315 and 50-316

cc w/att: W. Lanning, Region I
C. Casto, Region II
A. Howell, Region IV

CONTACT: J. Stang, NRR
(301) 415-1345

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