December 4, 2000

MEMORANDUM TO: William D. Travers, Executive Director for Operations

FROM: Ross B. Landsman, Project Engineer
Decommissioning Branch
Division of Nuclear Materials Safety, Region III

SUBJECT: DIFFERING PROFESSIONAL OPINION CONCERNING THE STARTUP OF D.C. COOK, UNITS 1 AND 2

On June 6, 2000, I submitted a differing professional view (DPV) on the restart of D.C. Cook, Unit 2. The DPV addressed two concerns related to the operability of the containment. The first concern focused on technical aspects of the operability evaluation for the CEQ fan room wall and questioned both the conservatisms and uncertainties used to determine that the design margin of the wall was acceptable. The second concern challenged the failure to properly implement Generic Letter (GL) 91-18 criteria to the degraded wall.

On August 17, 2000, the DPV panel recommended that nothing be done about my concerns. I believe there are two issues yet to be resolved: (1) agency policy with respect to not following our own guidance in GL 91-18; and (2) continuing to allow the licensee to use assumptions in their analysis with which the staff does not agree.

Agency Policy

GL 91-18 states that for equipment to be considered operable within some reasonable assurance of safety, availability of redundant or backup equipment must be assessed, compensatory measures must be in place if the equipment in question fails, and conservatisms and adequate margins must exist. The NRR staff (June 12, 2000) and the DPV (August 17, 2000) response, to the above issues, stated that the licensee demonstrated operability, therefore, consideration of these factors was not necessary. I disagree. The intent of GL 91-18 was to permit licenses to continue to operate, or startup a plant when equipment performance was degraded (i.e., without the appropriate conservatisms and margins) provided the capability of the system (containment, in this case) was supported by redundant or backup equipment and compensatory measures were in place until final corrective action was complete. The CEQ fan room wall is degraded and yet, in variance with our own guidance, the NRC has allowed Unit 2 to operate without compensatory measures nor an assessment of redundant or backup equipment.

The DPV panel agreed with me on the need for timeliness of licensee actions with accordance with GL 91-18, "The licensee must (emphasis added) establish a time frame for completion of corrective action." In variance with this guidance, the *NRC* staff has not demanded that the licensee provide a definitive schedule for permanent resolution of Unit 2 containment issues;

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instead deferring this restraint until the Unit 1 restart. On August 22, 2000, the Regional Administrator, Mr. Dyer, directed the 0350 panel to promptly address this issue. To date, we still do not have a definitive time when the required design changes to the plant will be implemented. We have good reason to suspect that the licensee will not meet this deadline. In a November 3, 2000, letter to the licensee we stated, "The NRC expects time frames longer than the next refueling outage to be explicitly justified by the licensee." In their response, the licensee stated, "if ... the needed design changes cannot be completed and implemented by the next refueling outage ... Indiana Michigan Power Company will provide justification for the time needed to resolve these issues." Because we are addressing the adequacy of the D.C. Cook containments, how can we let them operate beyond the next refueling outage, in conflict with our own GL 91-18 guidance? It is important to note that this issue was identified in February 1998, not recently, and the licensee has had more than two years to correct the condition. As stated in my DPV, we should not have allowed the licensee to restart Unit 2 because they did not start working on this issue in earnest until over two years after it was discovered. I believe that in failing to adhere to our own guidance, we have put the general public at greater risk from an accident at D. C. Cook.

Technical

The analytical design margin for current, as-left condition of the CEQ fan room wall, following a main steamline break, is substantially less when compared to the original design and the UFSAR. In the June 1, 2000 meeting, the licensee presented the results of their analyses which concluded that the limiting design margin was 1.21. A member of the NRR staff and I challenged several of the licensee's assumptions regarding the concrete strength used, use of dynamic load factors in concert with dynamic increase factors, use of yield line theory (which is only used in plate theory), and ignoring earthquake loads. Reanalyzing the wall resulted in a further reduction of the design margin to 1.05, instead of the specified UFSAR 1.50. The NRC still has not informed the licensee that we have not accepted their analysis. In correspondence to the licensee, we said, "the analysis performed by your staff (licensee) demonstrated that each wall in question was operable with some amount of margin." June 12, 2000, correspondence stated, "the refined analysis for the Unit 1 ice condenser floor slab and columns demonstrate the conformance with the design and licensing bases." October 13, 2000, correspondence stated, "The staff(NRR) ... concluded that there was reasonable basis to conclude no other similar deficiencies existed." June 12, 2000, correspondence and in other correspondence dated August 11, 2000, "Overall, the staff (NRR) concluded that the licensee operability calculations for the walls were reasonable and acceptable." It is my professional opinion that the license's analysis is severely flawed and the NRC should immediately inform the licensee that their analysis is not acceptable. Proper consideration of concrete strength, dynamic load factors in concert with dynamic increase factors, use of yield line theory (which is only used in plate theory), and earthquake loads will demonstrate that their refined analysis does not meet design. Remedial actions must be implemented prior to the end of the next refueling outage before the NRC allows the units to return to service.

Summary
The license's analysis of the CEQ fan room wall is severely flawed and the NRC should immediately inform the licensee that their analysis is not acceptable. In variance with our own GL 91-18 guidance, the NRC has not demanded that the licensee provide a definitive schedule for permanent resolution of containment issues, provide compensatory measures, nor an assessment of redundant or backup equipment. Remedial actions must be implemented prior to the end of the next refueling outage before the NRC allows the units to return to service.
I believe that in failing to adhere to our own guidance, we have put the general public at greater risk from an accident at D. C. Cook.