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ALEXICH,M.R. Indiana & Michigan Electric Co.
RECIP.NAME RECIPIENT AFFILIATION
DENTON,H.R. Office of Nuclear Reactor Regulation, Director

SUBJECT: Forwards "Status Summary Rept on Adequacy of Distributed Ignition Sys for Hydrogen Control," in response to NRC 820429 ltr & commitments made during NRC 830913 meeting in Bethesda,MD.

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March 1, 1984
AEP:NRC:0500I

Donald C. Cook Nuclear Plant Unit Nos. 1 and 2
Docket Nos. 50-315 and 50-316
License Nos. DPR-58 and DPR-74
STATUS SUMMARY REPORT ON THE ADEQUACY OF THE DISTRIBUTED IGNITION SYSTEM FOR HYDROGEN CONTROL

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Denton:

The Attachment to this letter contains a copy of the "Status Summary Report on the Adequacy of the Distributed Ignition System for the Donald C. Cook Nuclear Plant." This report is being submitted in response to a letter dated April 29, 1982 [Mr. S. A. Varga (NRC) to Mr. John E. Dolan of the Indiana & Michigan Electric Company (IMECo)], and in partial fulfillment of commitments made to NRC staff at a meeting held in Bethesda, Maryland, on September 13, 1983. This report summarizes the results of the extensive research and development programs which were funded by the ice condenser containment owners group (i.e., American Electric Power Service Corporation, Duke Power Company, and the Tennessee Valley Authority) and the Electric Power Research Institute, with regard to the controlled combustion of lean hydrogen mixtures following postulated degraded core accidents.

A vast amount of information related to hydrogen generation, distribution, combustion, mitigation, and control has been developed over the past few years by the ice condenser owners, the Electric Power Research Institute, other utilities, the NRC staff, and various national laboratories. Summarizing this information in the attached report unavoidably resulted in a somewhat cursory review of several important areas of experimental and analytical study. For this reason, the Status Summary Report relies heavily on reference to previously submitted information or documents available for public review, rather than a detailed discussion of that information.

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As noted in the Status Summary Report, work is not yet completed on the issue of post-accident hydrogen control for the Donald C. Cook Nuclear Plant. More specifically, we have retained Westinghouse/Offshore Power Systems to aid us in determining the adequacy and capability of the air return/hydrogen skimmer fan system to withstand the differential pressures resulting from postulated upper compartment or upper plenum hydrogen deflagrations. Upon completion of their work, we will be performing evaluations as to which plant modifications, if any, are required to support the results of the analysis. Additionally, in order to make the bases for these evaluations more consistent with those performed by the Tennessee Valley Authority and Duke Power Company, we are considering the rerouting of the Reactor Coolant System high point vent system from an upper compartment discharge configuration to a lower compartment discharge configuration. We will inform you of the results of these evaluations in future submittals, as we committed to at the September 13, 1983, meeting.

Furthermore, due to the large volume of information that has been used in the preparation of the enclosed report, the report could not undergo our normal independent quality assurance review without significant delay of this submittal. Therefore, we are conducting the independent review subsequent to issuance of this submittal. If changes are required to the report as a result of the independent review, we will notify you by separate letter.

This document has been prepared following Corporate Procedures which incorporate a reasonable set of controls to ensure its accuracy and completeness prior to signature by the undersigned.

Very truly yours,

M. P. Alexich
Vice President

MPA/dam

Attachment

cc: John E. Dolan
W. G. Smith, Jr. - Bridgman
R. C. Callen
G. Charnoff
E. R. Swanson - NRC Resident Inspector, Bridgman
A. Sudduth - Duke Power Company, Charlotte, NC
D. Renfro - Tennessee Valley Authority, Knoxville, TN