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

SUBJECT: Forwards hydrogen control program schedule,info re MARCH 2 code input deck & "Hydrogen Combustion & Control Analysis Assumptions," per 850206 meeting.Complete loss of offsite power for significant periods unlikely.

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March 29, 1985
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Donald C. Cook Nuclear Plant Unit Nos. 1 and 2
Docket Nos. 50-315 and 50-316
License Nos. DPR-58 and DPR-74
HYDROGEN CONTROL PROGRAM (10 CFR 50.44(c))

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

Dear Mr. Denton:

On February 6, 1985, personnel from the American Electric Power Service Corporation (AEPSC) and Battelle Columbus Laboratories (BCL) met with NRC staff, to discuss the D.C. Cook Nuclear Plant program for final resolution of the hydrogen control issue (10 CFR 50.44(c)). As a result of the discussions, we committed to provide the following information for NRC staff review and approval.

- MARCH 2 computer code input deck(s) applicable to the D.C. Cook containment and systems;

- A hydrogen combustion model inferred from available Nevada Test Site (NTS) data; and

- Justification for scenario selection

Attachments 2 and 3 to this letter contain the requested information. As a supplement to Attachment 2 we have included detailed information on the AEP grid system and the D.C. Cook substation. This information shows that the offsite power system supplying the Donald C. Cook Nuclear Plant to be very extensive, making the occurrence of a complete loss of offsite power for significant periods of time highly unlikely. For this reason we consider such events to be out of the scope of the hydrogen control rule promulgated in 10 CFR 50.44(c).

This completes phase I of our program. As we discussed with your staff, we will begin phase II after you have completed your review of the initial conditions and assumptions submitted in this document. A schedule for time required to complete phase II is included as attachment 1. We understand that your review and approval of the schedule in Attachment 1 is what is required for compliance with 10 CFR 50.44(c). Also, page 8 of Attachment 2 provides four key modeling assumptions. Assumption 1 is based on documents such as NSAC 32, "Workshop on Hydrogen Burning and Containment Building Integrity," and experimental work done by the ice condenser utilities. Assumptions 2, and 4 are based on review of preliminary Nevada Test Site data. Assumption 3 is currently undergoing comparison to experimental data, and it is anticipated

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once this comparison is completed, the value of 17.5 ft/sec given for flame speed may be readjusted.

It should be noted that in describing the MARCH model, we are only describing the code capabilities, not their final utilization. As we discussed with your staff, we intend to use MARCH only for hydrogen source term and scoping tool. The CLASIX code will be used for containment capability purposes.

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

RDK 3/29/85

cc: John E. Dolan
W. G. Smith, Jr. - Bridgman
R. C. Callen
G. Bruchmann
G. Charnoff
NRC Resident Inspector - Bridgman

ATTACHMENT 1 TO AEP:NRC:Ø5ØØO

HYDROGEN CONTROL PROGRAM SCHEDULE

D. C. COOK NUCLEAR PLANT

SCHEDULE OF ACTIVITIES

D. C. COOK NUCLEAR PLANT HYDROGEN CONTROL PROGRAM

ACTIVITY	WEEKS AFTER START OF PROGRAM
Review Proposed Program Approach With NRC Staff	0
Review MARCH 2 Analysis Input With AEPSC Staff	4
Perform Initial Set of MARCH 2 Analyses For In-Vessel Hydrogen Generation	7
Define Effect Of Reactor Coolant System Vent Routing	9
Define Effect Of Air Return/Hydrogen Skimmer System Fan Operability	11
AEPSC And BCL Complete And Verify Input Decks for CLASIX Analyses (Three Accident Scenarios)	9, 11, 13
Assess Effects Of Spray Impingement And Related Factors On Glow Plug Igniter Effectiveness	15
Interim Program Review With NRC Staff	16
Determine If Possibility Of Local Detonations Exists; If So, Develop Detonation Loads For Dynamic Containment Analysis	23
Draft Report Issued By BCL	26
AEPSC Review Of Draft Report	36
Final Report Issued By BCL	40
NRC Notified Of Final Resolutions Of BCL Work And Containment Dynamic Analysis	44

ATTACHMENT 2 TO AEP:NRC:Ø5ØØO

ANALYSIS ASSUMPTIONS

D. C. COOK NUCLEAR PLANT