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

SUBJECT: Forwards addl info on analysis supporting FQ limits for Westinghouse fuel,per NRC 850725 request.Results previously submitted remain applicable based on encl analysis.Review needed prior to entry into Mode 1 for Cycle 9 startup.

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INDIANA & MICHIGAN ELECTRIC COMPANY

P.O. BOX 16631
COLUMBUS, OHIO 43216

August 13, 1985
AEP:NRC:0941A

Donald C. Cook Nuclear Plant Unit No. 1
Docket No. 50-315
License No. DPR-58
ADDITIONAL INFORMATION ON ANALYSIS SUPPORTING F_Q LIMITS FOR WESTINGHOUSE FUEL

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

Dear Mr. Denton:

This letter is in response to an July 25, 1985 telephone call with members of your staff concerning our letter AEP:NRC:0941, dated July 23, 1985. Specific information was requested concerning additional large break analyses with maximum safeguards and a discussion of the effect of various power shapes on K(Z). The attachment to this letter, AEP:NRC:0941A, transmits that information.

Review of the subject analysis is needed prior to initial entry into Mode 1 for the Donald C. Cook Unit 1 Cycle 9 startup.

In compliance with the requirements of 10 CFR 50.91(b)(1), a copy of this letter and its attachments have been transmitted to Mr. R. C. Callen of the Michigan Public Service Commission.

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

Very truly yours,

M. P. Alexich
Vice President

KEN 8-15-85

A001 1/1

Attachment: "Additional Information Supporting the D. C. Cook Unit 1 3250 MWt Large Break LOCA Analysis", Westinghouse Electric Corporation, August, 1985.

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

ATTACHMENT TO AEP:NRC:0941A

Additional Information Supporting the D. C. Cook Unit 1 3250 MWt Large Break LOCA Analysis, Westinghouse Electric Corporation, August, 1985

August 12, 1985

In response to an NRC question on the impact of the BART Vin methodology change on ECCS analyses where there are no postulated failures in ECCS equipment (Max SI), Westinghouse has performed a 3 break spectrum analysis with the following results:

BREAK	PCT MIN SI	PCT MAX SI
0.4	1985°F	2107°F
0.6	1937°F	2154°F
0.8	1873°F	2046°F

Based on these cases, the results previously submitted for D. C. Cook (0.6 Max SI), Unit 1 remain applicable.

The impact of the BART Vin methodology on the Westinghouse K(z) methodology was also questioned by the NRC. Power shape sensitivity studies performed with Westinghouse ECCS evaluation models have always demonstrated the chopped cosine shape with the peak at the core midplane to be limiting. Westinghouse has performed "spot check" analyses using the BART reflood evaluation model for power shapes skewed to the top of the core. Results of these analyses have demonstrated the chopped cosine peaked at the core midplane remains the limiting power shape. This result is to be expected since the mechanistic computations of core reflood heat transfer performed in BART provide their maximum benefit at core elevations above the midplane. The BART Vin methodology change should not impact the results of these studies since the power shape study is a sensitivity for a given set of initial and transient conditions. The impact of the BART Vin methodology change is a lower flooding rate for the first few seconds of the reflood portion of the LOCA transient. Since the change to these first few seconds is independent of the power shape, the sensitivity to the power shape, which manifests itself much later in the reflood transient, would be the same between the two cases.