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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 response to second set of questions from BNL re Cycle 5 SAR,Exxon Nuclear Repts XN-NF-83-85 & XN-NF-83-85, Suppl 1,Rev 1.

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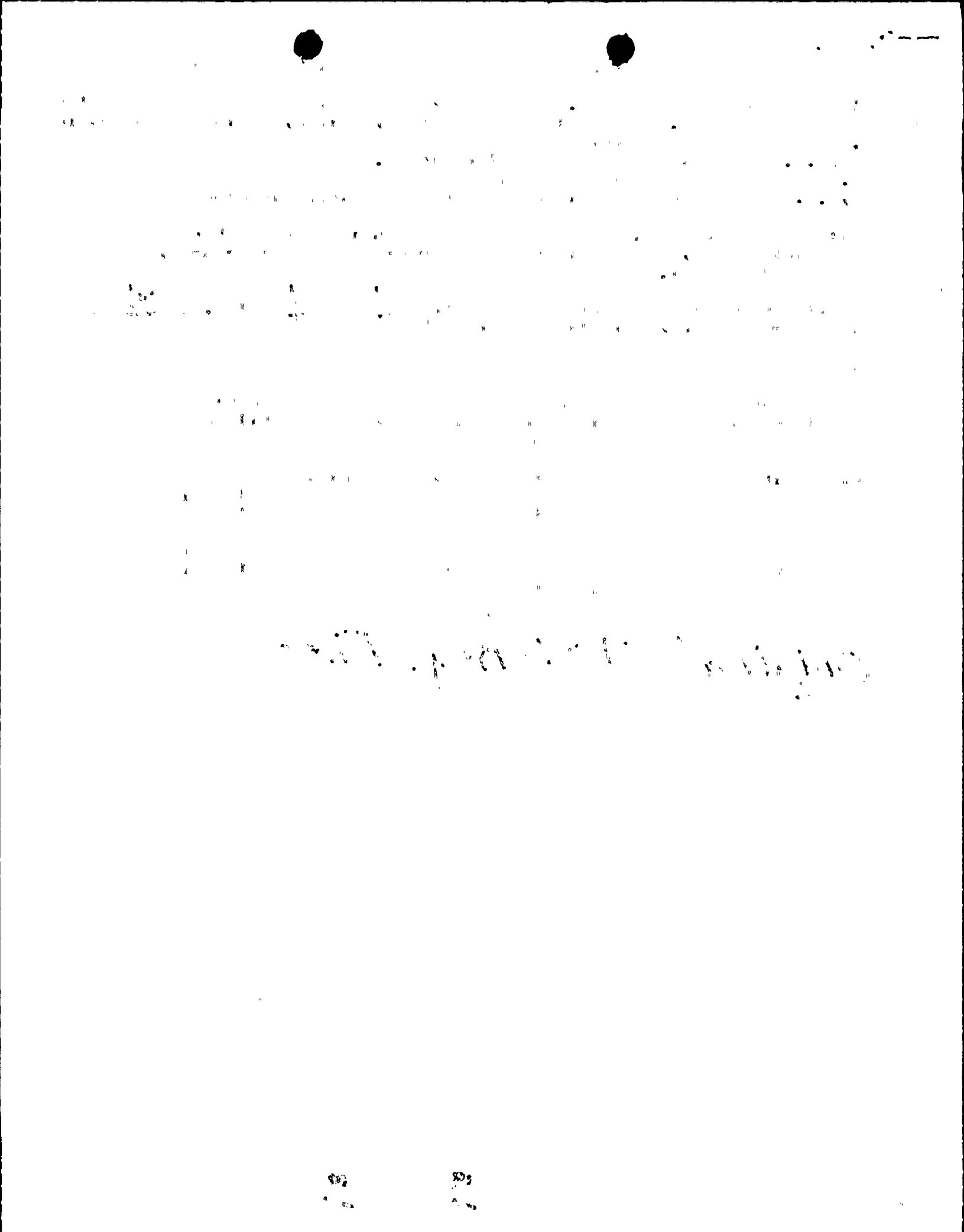

INDIANA & MICHIGAN ELECTRIC COMPANY

P.O. BOX 16631
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April 19, 1984
AEP:NRC:0860D

Donald C. Cook Nuclear Plant Unit No. 2
Docket No. 50-316
License No. DPR-74
Cycle 5 Reload

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

Dear Mr. Denton:

By this letter we transmit responses to the second set of verbal questions received from Brookhaven National Laboratory (BNL) regarding the Cycle 5 Safety Analysis Report (Exxon Nuclear Co. Report No. XN-NF-83-85 and XN-NF-83-85, Supp. 1, Rev. 1) that was submitted to the NRC in support of the Cycle 5 reload application.

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 EBK 4/18/84
Vice President

MPA/bjs

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

IE26
1/1 Original
To: Ron Fuller

Question #1 Is the 2% penalty on DNBR to account for the hydraulically different fuel assemblies in the core taken into account?

Answer #1 The 2% penalty on DNBR has been taken into account in the Cycle 5 transient analyses. Documentation regarding this is a letter from Exxon Nuclear Co. and is attached herewith.

Question #2 What is the value of F_Q used in the transient analyses?

Answer #2 F_Q used in the transient analyses is 2.47 as reported in Table 3.1 of XN-NF-82-32(P).

Question #3 It was reported that the ENC reload fuel will have less available thermal margin but the $F_{\Delta H}$ limit for ENC fuel is higher than the Westinghouse fuel. Why?

Answer #3 The Westinghouse $F_{\Delta H}$ and F_Q limits for Cycle 4 were reduced (from their Cycle 3 values) slightly to allow for an increase in core power. This was done because a new plant specific LOCA analysis was not warranted for the Westinghouse fuel. The Exxon values represent new plant specific analysis for Cycles 4 and 5.

EXXON NUCLEAR COMPANY, Inc.
600 - 108th Avenue N.E. P.O. 00777, Bellevue, Washington 98009, Telephone (206) 453-4300

April 12, 1984
ENC-AEP/0341

Mr. George John, Sr. Engineer
Indiana & Michigan Electric Company
c/o American Electric Power Service Corp.
One Riverside Plaza
Columbus, OH 43215

Dear Geoge:

Ref: 1) XN-NF-82-21(P), "Application of Exxon Nuclear Company PWR Thermal Margin Methodology to Mixed Core Configurations," March 1982

2) XN-NF-82-32(P), Rev. 1, "Plant Transient Analysis for the Donald C. Cook Unit 2 Reactor at 3425 MWt, "October 1982

3) XN-NF-82-32(NP), Rev. 2, "Plant Transient Analysis for the Donald C. Cook Unit 2 Reactor at 3425 MWt: Operation with 5% Steam Generator Tube Plugging," March 1984

The Reference 1 methodology has been employed in the evaluation of MDNBR in D. C. Cook Unit 2 Cycle 4 and Cycle 5 plant transient analyses (References 2 and 3). The NRC Staff Safety Evaluation Report on the reference thermal-hydraulic methodology report mandates the application of a 2% MDNBR penalty for mixed cores analyzed with the reference methodology.

This is to confirm that the penalty was indeed applied in the Reference 2 and 3 analysis in accordance with the Staff SER.

Very truly yours,

H. C. Shaw
Contract Administrator

tlm

cc: M. P. Alexich
J. M. Cleveland
W. L. Zimmermann

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