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 ALEXICH, M. P. Indiana & Michigan Electric Co.
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 MURLEY, T. E. Document Control Branch (Document Control Desk)

SUBJECT: Forwards info re plant Cycle 10 reload, including
 Westinghouse peaking factor limit rept for cycle & reload
 SER. Fee paid.

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AEP:NRC:0940H

Donald C. Cook Nuclear Plant Unit 1
License No. 50-315
Docket No. DPR-58
UNIT 1 CYCLE 10 PEAKING FACTOR LIMIT
REPORT AND RELOAD SAFETY EVALUATION REPORT

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Attn: T. E. Murley

October 28, 1987

Dear Dr. Murley:

The purpose of this letter is to transmit information related to the D. C. Cook Unit 1 Cycle 10 reload. The information includes the Peaking Factor Limit Report for the cycle, as well as the reload safety evaluation report (RSER), both of which were prepared for us by Westinghouse Electric Corp. (Westinghouse), our D. C. Cook Unit 1 fuel supplier.

Peaking Factor Limit Report

Attachment 1 to this letter contains the Cycle 10 Peaking Factor Limit Report. The report provides the burnup-dependent V(2) function for the cycle calculated for a $\pm 5\%$ band at a core power level of 3250 MWt. The function is provided for ten ranges of burnup from beginning of cycle to end of cycle.

Amendment 74 to the Unit 1 Technical Specifications (T/Ss), issued September 20, 1983, required us to submit a Peaking Factor Limit Report by 60 days prior to the scheduled start-up date for the new cycle. In a letter dated May 1, 1987 (Attachment 2), the NRC modified this requirement for Unit 1 Cycle 10 by allowing us to submit the report 30 days after initial criticality. Transmittal of the Peaking Factor Limit Report fulfills this requirement for Cycle 10.

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1. The first part of the report is a general description of the project. It includes the purpose of the study, the objectives, and the scope of the work. The second part is a detailed description of the methodology used in the study. This includes the design of the study, the data collection methods, and the analysis techniques. The third part is a description of the results of the study. This includes the data collected, the analysis of the data, and the conclusions drawn from the study. The fourth part is a discussion of the results of the study. This includes a comparison of the results with previous studies, a discussion of the strengths and weaknesses of the study, and a discussion of the implications of the results. The fifth part is a conclusion. This includes a summary of the findings of the study and a statement of the overall conclusions.

2. The second part of the report is a detailed description of the methodology used in the study. This includes the design of the study, the data collection methods, and the analysis techniques. The third part is a description of the results of the study. This includes the data collected, the analysis of the data, and the conclusions drawn from the study. The fourth part is a discussion of the results of the study. This includes a comparison of the results with previous studies, a discussion of the strengths and weaknesses of the study, and a discussion of the implications of the results. The fifth part is a conclusion. This includes a summary of the findings of the study and a statement of the overall conclusions.

3. The third part of the report is a description of the results of the study. This includes the data collected, the analysis of the data, and the conclusions drawn from the study. The fourth part is a discussion of the results of the study. This includes a comparison of the results with previous studies, a discussion of the strengths and weaknesses of the study, and a discussion of the implications of the results. The fifth part is a conclusion. This includes a summary of the findings of the study and a statement of the overall conclusions.

4. The fourth part of the report is a discussion of the results of the study. This includes a comparison of the results with previous studies, a discussion of the strengths and weaknesses of the study, and a discussion of the implications of the results. The fifth part is a conclusion. This includes a summary of the findings of the study and a statement of the overall conclusions.

Dr. T. E. Murley

-2-

AEP:NRC:0940H

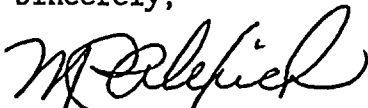
Reload Safety Evaluation Report

For your staff's information, we have enclosed as Attachment 3 a copy of the RSER for Unit 1, Cycle 10. The Unit 1 Cycle 10 reload was accomplished under the provisions of 10 CFR 50.59, with the exception of the T/S changes which were granted for the reload in Amendment 111 to the Unit 1 T/Ss on June 10, 1987. The RSER describes the Unit 1 Cycle 10 core and summarizes the safety reviews which were performed by Westinghouse in support of the reload.

Pursuant to the requirements of 10 CFR 170.12(c), we have enclosed a fee of \$150.00 for this submittal.

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.

Sincerely,



M. P. Alexich
Vice President

cm

Attachments

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

Attachment 1 to AEP:NRC:0940H

Unit 1 Cycle 10
Peaking Factor Limit Report

ATTACHMENT

D. C. COOK UNIT 1 CYCLE 10 V(2) FUNCTION

WIRE NO.	AXIAL WEIGHT	BURNUP RANGES (MWD/MTU)									
		0 150	150 1000	1000 2000	2000 4000	4000 6000	6000 8000	8000 10000	10000 12000	12000 14000	14000 EOL
1.	0.00000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
2.	0.20000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3.	0.40000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
4.	0.60000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5.	0.80000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
6.	1.00000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
7.	1.2000	1.0739	1.0739	1.0732	1.0744	1.0791	1.0792	1.0834	1.0909	1.1081	1.1081
8.	1.4000	1.0731	1.0731	1.0731	1.0743	1.0783	1.0796	1.0847	1.0897	1.1048	1.1048
9.	1.6000	1.0742	1.0742	1.0728	1.0739	1.0774	1.0793	1.0836	1.0881	1.1019	1.1019
10.	1.8000	1.0731	1.0731	1.0718	1.0732	1.0763	1.0784	1.0822	1.0862	1.0984	1.0984
11.	2.0000	1.0719	1.0719	1.0709	1.0723	1.0751	1.0771	1.0804	1.0839	1.0944	1.0944
12.	2.2000	1.0703	1.0703	1.0698	1.0711	1.0734	1.0754	1.0782	1.0811	1.0898	1.0898
13.	2.4000	1.0689	1.0689	1.0683	1.0696	1.0713	1.0733	1.0756	1.0779	1.0847	1.0847
14.	2.6000	1.0671	1.0671	1.0670	1.0679	1.0693	1.0712	1.0727	1.0744	1.0792	1.0792
15.	2.8000	1.0652	1.0652	1.0654	1.0660	1.0672	1.0693	1.0694	1.0703	1.0733	1.0733
16.	3.0000	1.0636	1.0636	1.0637	1.0638	1.0648	1.0670	1.0670	1.0660	1.0669	1.0669
17.	3.2000	1.0623	1.0623	1.0621	1.0621	1.0624	1.0647	1.0647	1.0621	1.0621	1.0621
18.	3.4000	1.0613	1.0613	1.0606	1.0606	1.0604	1.0632	1.0632	1.0604	1.0619	1.0619
19.	3.6000	1.0603	1.0603	1.0596	1.0595	1.0592	1.0627	1.0627	1.0610	1.0666	1.0666
20.	3.8000	1.0596	1.0596	1.0589	1.0593	1.0594	1.0639	1.0639	1.0624	1.0733	1.0733
21.	4.0000	1.0592	1.0592	1.0589	1.0601	1.0601	1.0633	1.0633	1.0638	1.0804	1.0804
22.	4.2000	1.0590	1.0592	1.0592	1.0606	1.0606	1.0663	1.0663	1.0630	1.0872	1.0872
23.	4.4000	1.0590	1.0592	1.0592	1.0611	1.0611	1.0673	1.0673	1.0659	1.0936	1.0936
24.	4.6000	1.0589	1.0591	1.0591	1.0614	1.0614	1.0681	1.0681	1.0663	1.0993	1.0993
25.	4.8000	1.0586	1.0590	1.0590	1.0613	1.0613	1.0683	1.0683	1.0669	1.1048	1.1048
26.	5.0000	1.0581	1.0588	1.0588	1.0614	1.0614	1.0683	1.0683	1.0666	1.1094	1.1094
27.	5.2000	1.0574	1.0584	1.0584	1.0611	1.0611	1.0682	1.0682	1.0668	1.1132	1.1132
28.	5.4000	1.0563	1.0577	1.0577	1.0604	1.0604	1.0674	1.0674	1.0683	1.1164	1.1164
29.	5.6000	1.0553	1.0568	1.0568	1.0594	1.0594	1.0663	1.0663	1.0710	1.1187	1.1187
30.	5.8000	1.0542	1.0556	1.0556	1.0582	1.0582	1.0658	1.0671	1.0731	1.1200	1.1200
31.	6.0000	1.0527	1.0540	1.0540	1.0562	1.0562	1.0644	1.0683	1.0744	1.1201	1.1201
32.	6.2000	1.0508	1.0521	1.0521	1.0549	1.0538	1.0676	1.0692	1.0731	1.1191	1.1191
33.	6.4000	1.0486	1.0498	1.0498	1.0524	1.0544	1.0679	1.0693	1.0731	1.1169	1.1169
34.	6.6000	1.0458	1.0483	1.0491	1.0549	1.0544	1.0676	1.0688	1.0744	1.1134	1.1134
35.	6.8000	1.0437	1.0471	1.0481	1.0538	1.0538	1.0667	1.0673	1.0730	1.1087	1.1087
36.	7.0000	1.0420	1.0460	1.0471	1.0533	1.0548	1.0651	1.0659	1.0703	1.1026	1.1026
37.	7.2000	1.0413	1.0453	1.0469	1.0534	1.0542	1.0628	1.0649	1.0681	1.0953	1.0953
38.	7.4000	1.0419	1.0438	1.0472	1.0531	1.0544	1.0603	1.0640	1.0669	1.0867	1.0867
39.	7.6000	1.0419	1.0434	1.0469	1.0523	1.0539	1.0596	1.0624	1.0649	1.0767	1.0767
40.	7.8000	1.0417	1.0446	1.0461	1.0509	1.0528	1.0581	1.0601	1.0622	1.0673	1.0673
41.	8.0000	1.0401	1.0432	1.0448	1.0489	1.0511	1.0558	1.0571	1.0588	1.0612	1.0612
42.	8.2000	1.0404	1.0412	1.0428	1.0463	1.0487	1.0529	1.0534	1.0548	1.0580	1.0580
43.	8.4000	1.0453	1.0453	1.0402	1.0430	1.0456	1.0492	1.0492	1.0499	1.0570	1.0570
44.	8.6000	1.0497	1.0497	1.0369	1.0390	1.0419	1.0443	1.0443	1.0442	1.0584	1.0584
45.	8.8000	1.0539	1.0539	1.0323	1.0333	1.0370	1.0426	1.0426	1.0433	1.0640	1.0640
46.	9.0000	1.0582	1.0582	1.0320	1.0322	1.0373	1.0453	1.0453	1.0507	1.0713	1.0713
47.	9.2000	1.0624	1.0624	1.0336	1.0356	1.0425	1.0504	1.0503	1.0559	1.0784	1.0784
48.	9.4000	1.0663	1.0663	1.0389	1.0391	1.0466	1.0547	1.0551	1.0610	1.0832	1.0832
49.	9.6000	1.0703	1.0703	1.0423	1.0426	1.0506	1.0590	1.0596	1.0657	1.0917	1.0917
50.	9.8000	1.0744	1.0744	1.0456	1.0461	1.0546	1.0629	1.0639	1.0702	1.0977	1.0977
51.	10.000	1.0781	1.0781	1.0488	1.0494	1.0584	1.0663	1.0678	1.0743	1.1033	1.1033
52.	10.200	1.0816	1.0816	1.0518	1.0526	1.0619	1.0696	1.0714	1.0780	1.1082	1.1082
53.	10.400	1.0848	1.0848	1.0543	1.0557	1.0652	1.0721	1.0748	1.0812	1.1123	1.1123
54.	10.600	1.0879	1.0879	1.0570	1.0584	1.0681	1.0741	1.0773	1.0840	1.1168	1.1168
55.	10.800	1.0911	1.0911	1.0592	1.0609	1.0703	1.0756	1.0798	1.0863	1.1204	1.1204
56.	11.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
57.	11.200	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
58.	11.400	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
59.	11.600	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
60.	11.800	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
61.	12.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Note that top and bottom 10% of core are excluded as per Technical Specification

Attachment 2 to AEP:NRC:0940H

Letter from D. L. Wigginton (USNRC)
to John E. Dolan (IMECo) dated May 1, 1987



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

MAY 01 1987

Docket Nos. 50-315
50-316

MAY - 4 1987

MAY 5 1987

cc: M. P. ALEXICH
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R. F. KROEGER
J. B. SHINNOCK
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JOHN E. DOLAN

Mr. John Dolan, Vice President
Indiana and Michigan Electric Company
c/o American Electric Power Service Corporation
1 Riverside Plaza
Columbus, Ohio 43216

Dear Mr. Dolan:

On September 20, 1983, the NRC issued Amendment 74 to Facility Operating License No. DPR-58 for the Donald C. Cook Nuclear Plant, Unit No. 1. The Safety Evaluation supporting the amendment found that changes to specification 4/3.2.6 were acceptable on the condition that the peaking factor limit report be transmitted to the NRC for review 60 days prior to the scheduled startup date for the new cycle. By letter dated March 26, 1987, the Indiana and Michigan Electric Company proposed to change this condition and submit the report 15 days prior to the Cycle 10 initial criticality. The IMEC letter also proposed technical specifications to that effect.

We are in the process of evaluating our requirements, including an acceptable change to technical specifications. We will be discussing these changes with your staff in the near future; therefore, we agree that a change for Cycle 10 is appropriate. For Cycle 10, IMEC should submit the peaking factor limit report 30 days after initial criticality. This change in submittal date does not change plant operation or the safety analysis and continues to provide timely notice to the NRC.

If there are any questions on this matter, please let us know.

Sincerely,

David L. Wigginton, Acting Project Director
Project Directorate III-3
Division of Reactor Projects

cc: See next page

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