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 ALEXICH, M. P. Indiana & Michigan Electric Co.
 RECIP. NAME RECIPIENT AFFILIATION
 DENTON, H. R. Office of Nuclear Reactor Regulation, Director (post 851125)

SUBJECT: Forwards table of Cycle 9 burnup dependent V(Z) function currently used, per NRC request in SER. Flux map analysis w/DETECTOR code also used in cycle.

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INDIANA & MICHIGAN ELECTRIC COMPANY

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July 10, 1986
AEP:NRC:0940F

Donald C. Cook Nuclear Plant Unit No. 1
Docket No. 50-315
License No. DPR-58
TRANSMITTAL OF UNIT 1, CYCLE 9 V(Z) FUNCTION

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


Dear Mr. Denton:

In response to a request stated in the NRC Safety Evaluation Report (SER) for Unit 1, Cycle 8, we transmitted to you the Cycle 8 V(Z) function in our letter AEP:NRC:0745F (dated July 29, 1983), and later updated the information.

We have reexamined this SER and have concluded that this information should be submitted for Cycle 9. We are therefore transmitting as an attachment to this letter the V(Z) for Cycle 9. We have verified that the burnup-dependent Unit 1, Cycle 9 V(Z) curve has been used and is currently being used for all Unit 1, Cycle 9 flux map analysis with the DETECTOR code.

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
RBK
7/10/86

cm

Attachment

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

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PDR ADOCK 05000315
P PDR

Adol
1/1



Westinghouse
Electric Corporation

Water Reactor
Divisions

Attachment To
AEP:NRC:0940F

Nuclear Fuel Division

Box 3912
Pittsburgh Pennsylvania 15230

85AE*-G-018

W-AEP/0205

July 3, 1985

Keywords: AEP V(Z) COOK-UNIT-1

Indiana and Michigan Electric Company
c/o Joseph L. Bell
Engineer, Nuclear Materials and Fuel Management
American Electric Power Service Corporation
One Riverside Plaza, 20th Floor
Columbus, OH 43215

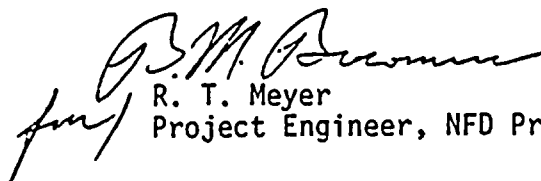
Dear Mr. Bell: ~~JUL 9 1985~~ JB 7-9-85

AMERICAN ELECTRIC POWER SERVICE CORPORATION
D. C. COOK UNIT 1
CYCLE 9 V(Z)

Attached is the burnup dependent V(Z) function for D. C. Cook Unit 1 cycle 9. The function has been calculated for burnups of 150, 1000, 2000, 4000, 6000, 8000, 10000, 12000 and 14000 MWD/MTU for a delta-I band of $\pm 5\%$ at a core power level of 3250 MWT. For burnups beyond 14000 MWD/MTU the calculated V(Z) function at 14000 MWD/MTU applies yielding a conservative penalty.

Please contact me if you require additional information.

Very truly yours,


R. T. Meyer
Project Engineer, NFD Projects

RTM:mld

ATTACHMENT

cc: M. P. Alexich
J. M. Cleveland
G. John
V. D. Vanderburg

AEP CYCLE 9 - BURNUP DEPENDENT V(Z) FUNCTION

CORE HEIGHT (FEET)	BURNUP (MWD/MTU)								
	150	1000	2000	4000	6000	8000	10000	12000	14000
0.13	1.07979 *	1.07220 *	1.07625 *	1.08443 *	1.09011 *	1.05319 *	1.09486 *	1.09826 *	1.11886 *
0.38	1.08002 *	1.07737 *	1.08160 *	1.09051 *	1.09563 *	1.06100 *	1.10056 *	1.10399 *	1.12527 *
0.63	1.07827 *	1.07803 *	1.08625 *	1.09345 *	1.09901 *	1.06681 *	1.10338 *	1.10757 *	1.12799 *
0.88	1.08440 *	1.08530 *	1.09036 *	1.09885 *	1.10261 *	1.07377 *	1.10652 *	1.11028 *	1.13074 *
1.13	1.10022 *	1.08967 *	1.09323 *	1.10229 *	1.10739 *	1.08256 *	1.11080 *	1.11557 *	1.13450 *
1.38	1.13063	1.09810	1.09957	1.10243	1.10481	1.08421	1.10707	1.11171	1.12936
1.63	1.13470	1.09424	1.09554	1.09767	1.10094	1.08698	1.10637	1.11232	1.12860
1.88	1.11401	1.09111	1.09049	1.09231	1.09619	1.08652	1.10424	1.10893	1.12431
2.13	1.08956	1.08421	1.08730	1.08867	1.09155	1.08713	1.10056	1.10589	1.11933
2.38	1.07877	1.08046	1.08457	1.08619	1.08772	1.08787	1.09826	1.10231	1.11474
2.63	1.08044	1.07984	1.08303	1.08314	1.08537	1.08818	1.09525	1.09969	1.10890
2.88	1.08132	1.08018	1.08084	1.08021	1.08245	1.08722	1.09174	1.09596	1.10244
3.13	1.07924	1.07847	1.07844	1.07770	1.07914	1.08773	1.08747	1.09176	1.09597
3.38	1.07877	1.07656	1.07708	1.07522	1.07642	1.08819	1.08528	1.08962	1.09602
3.63	1.07850	1.07504	1.07508	1.07394	1.07439	1.09048	1.08454	1.09123	1.09935
3.88	1.07830	1.07519	1.07381	1.07358	1.07518	1.09495	1.08580	1.09288	1.10585
4.14	1.07765	1.07489	1.07376	1.07484	1.07510	1.09823	1.08687	1.09530	1.11256
4.39	1.07722	1.07415	1.07354	1.07490	1.07543	1.10072	1.08758	1.09632	1.11816
4.64	1.07568	1.07443	1.07244	1.07511	1.07562	1.10253	1.08780	1.09714	1.12285
4.89	1.07358	1.07288	1.07185	1.07464	1.07467	1.10389	1.08746	1.09641	1.12610
5.14	1.07304	1.07231	1.07024	1.07344	1.07391	1.10369	1.08650	1.09740	1.12813
5.39	1.07221	1.07135	1.06918	1.07222	1.07196	1.10244	1.08551	1.09943	1.12858
5.64	1.07028	1.06940	1.06725	1.07030	1.07025	1.10007	1.08642	1.10055	1.12663
5.89	1.06740	1.06717	1.06504	1.06825	1.06732	1.09732	1.08666	1.10075	1.12282
6.14	1.06493	1.06443	1.06184	1.06663	1.06706	1.09717	1.08573	1.09877	1.11739
6.39	1.06146	1.06073	1.05841	1.06487	1.06616	1.09505	1.08319	1.09575	1.11020
6.64	1.05723	1.05735	1.05663	1.06297	1.06465	1.09307	1.07986	1.09112	1.10123
6.89	1.05341	1.05565	1.05391	1.05957	1.06122	1.08909	1.07443	1.08490	1.09180
7.14	1.05131	1.05284	1.05226	1.05803	1.05906	1.08307	1.07101	1.07848	1.08908
7.39	1.05023	1.05265	1.05105	1.05640	1.05694	1.07651	1.06662	1.07260	1.08934
7.64	1.04917	1.05009	1.04964	1.05331	1.05489	1.06776	1.06153	1.06590	1.08844
7.89	1.04823	1.04749	1.04678	1.04944	1.05022	1.06245	1.05434	1.05777	1.08569
8.15	1.05234	1.04417	1.04321	1.04497	1.04501	1.05514	1.04710	1.04809	1.08182
8.40	1.05543	1.03884	1.03830	1.03928	1.03877	1.04594	1.03860	1.03772	1.07687
8.65	1.05836	1.03231	1.03288	1.03110	1.03084	1.03707	1.02743	1.02941	1.07163
8.90	1.06137	1.03272	1.02908	1.02758	1.02774	1.03419	1.02824	1.03243	1.07815
9.15	1.06465	1.03439	1.03057	1.03034	1.03104	1.03471	1.03191	1.03460	1.08413
9.40	1.06745	1.03509	1.03230	1.03308	1.03465	1.03530	1.03479	1.03716	1.09017
9.65	1.06490	1.03533	1.03262	1.03530	1.03812	1.03568	1.03670	1.03866	1.09535
9.90	1.06032	1.02941	1.03376	1.03785	1.04153	1.03553	1.03870	1.03985	1.10024
10.15	1.05996	1.02919	1.03096	1.03935	1.04456	1.03392	1.03999	1.04067	1.10413
10.40	1.05964	1.02890	1.02577	1.03866	1.04518	1.03196	1.04054	1.04128	1.10616
10.65	1.06319	1.03192	1.03287	1.04450	1.05115	1.03232	1.04540	1.04529	1.11194
10.80	1.06907 *	1.04168 *	1.04783 *	1.05132 *	1.05735 *	1.03384 *	1.05011 *	1.04781 *	1.11588 *
11.15	1.07523 *	1.04480 *	1.04692 *	1.06071 *	1.07017 *	1.04482 *	1.06676 *	1.06543 *	1.13687 *
11.40	1.07097 *	1.04506 *	1.05253 *	1.07060 *	1.08402 *	1.05712 *	1.08509 *	1.08299 *	1.15243 *
11.65	1.08375 *	1.05781 *	1.06680 *	1.08773 *	1.10107 *	1.07185 *	1.10264 *	1.10213 *	1.17076 *
11.90	1.08491 *	1.05867 *	1.06868 *	1.09092 *	1.10222 *	1.06720 *	1.10078 *	1.09762 *	1.18193 *

* TOP AND BOTTOM 10% EXCLUDED AS PER TECHNICAL SPECIFICATION 4.2.2.2

ATTACHMENT

Attachment To
AEP: NRC: 0940F

