

REGULATOR INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8507020534 DOC. DATE: 85/06/27 NOTARIZED: NO DOCKET #
 FACIL: 50-315 Donald C. Cook Nuclear Power Plant, Unit 1, Indiana & 05000315
 AUTH. NAME: ALEXICH, M.P. AUTHOR AFFILIATION: Indiana & Michigan Electric Co.
 RECIP. NAME: DENTON, H.R. RECIPIENT AFFILIATION: Office of Nuclear Reactor Regulation, Director

SUBJECT: Concludes that all fuel which will be placed in facility for
 Cycle 9 operation in compliance w/10CFR50.46, based on
 LOCA/ECCS analysis of Exxon Nuclear fuel, per 850521 telcon.

DISTRIBUTION CODE: A001D COPIES RECEIVED: LTR 1 ENCL 2 SIZE: 2
 TITLE: OR Submittal: General Distribution

NOTES: OL: 10/25/74 05000315

	RECIPIENT ID CODE/NAME		COPIES LTTR ENCL		RECIPIENT ID CODE/NAME		COPIES LTTR ENCL
	NRR ORB1 BC	01	7				
INTERNAL:	ACRS	09	6		ADM/LFMB		1 0
	ELD/HDS3		1		NRR/DE/MTEB		1 1
	NRR/DL DIR		1		NRR/DL/ORAB		1 0
	NRR/DL/TSRG		1		NRR/DSI/METB		1 1
	NRR/DSI/RAB		1		REG FILE	04	1 1
	RGN3		1				
EXTERNAL:	24X		1		EG&G BRUSKE, S		1 1
	LPDR	03	1		NRC PDR	02	1 1
	NSIC	05	1				

... ..

INDIANA & MICHIGAN ELECTRIC COMPANY

P.O. BOX 16631
COLUMBUS, OHIO 43216

June 27, 1985
AEP:NRC:0940

Donald C. Cook Nuclear Plant Unit No. 1
Docket No. 50-315
License No. DPR-58
JUSTIFICATION FOR OPERATING COOK UNIT 1
WITH THE EXISTING LOCA/ECCS ANALYSIS FOR EXXON FUEL

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

Dear Mr. Denton:

As a result of a telephone conversation with your staff on May 21, we have reviewed the LOCA/ECCS analysis for Exxon Nuclear fuel which will be placed in D.C. Cook Plant Unit 1 for Cycle 9 operation. Our review was based on the information provided by Exxon Nuclear Company (ENC), along with the LOCA/ECCS analysis for Westinghouse fuel. Based on this review AEPSC has concluded that there is a reasonable assurance that all the fuel in the Donald C. Cook Nuclear Plant Unit 1 is in compliance with the criteria of 10 CFR 50.46.

The information supplied by Exxon Nuclear Company provided comparisons of peak cladding temperature for different fuel types. AEPSC has reviewed the description of the difference analysis of ENC and Westinghouse fuel types. This analysis was submitted to the NRC by ENC with a letter (No. JCC:067:85) to C.O. Thomas from J.C. Chandler dated April 4, 1985. The Westinghouse fuel used in this study is similar to that used in D.C. Cook Unit 1 plant. However, the fill gas pressure in the D.C. Cook Unit 1 fuel is somewhat lower than the pressure in the fuel examined in the study. Exxon Nuclear Company has reviewed the sensitivity to the filling gas pressure and has concluded that this difference will not significantly affect the comparison. This study indicates that the ENC fuel operates with a peak cladding temperature (PCT) similar to the Westinghouse fuel design. Allowing for uncertainty, AEPSC considers that it is reasonable to assume that the change in peak cladding temperature resulting from fuel type differences will be within $\pm 50^{\circ}\text{F}$.

AEPSC has reviewed the power distribution anticipated during the Cycle 9 operation and determined that the Exxon Nuclear fuel will operate at powers 20% lower than the Westinghouse fuel. Assuming that the Westinghouse fuel operates at its limiting F_Q of 2.1, the corresponding Exxon F_Q will be 1.68. This

8507020534 850627
PDR ADDCK 05000315
PDR


Aool
1/0

difference in F_0 more than compensates for the possible 50°F difference between fuel types. Based on the assumption of a 10°F change in peak cladding temperature for each 0.01 change in F_0 , the Exxon fuel has an additional margin $\sim 400^\circ\text{F}$ above that of the Westinghouse fuel. Therefore, the revised Westinghouse analysis to be submitted in July, 1985 which has been performed in accordance with approved methodology and the Exxon comparative analysis provide reasonable assurance that the operation of the D.C. Cook Unit 1 plant will be in compliance with the requirements of 10 CFR 50.46.

Exxon Nuclear is in the process of revising their LOCA/ECCS evaluation model. When this revision is complete, AEPSC will be submitting confirmatory calculations of the LOCA response of the Exxon Nuclear fuel as a function of axial power shapes. The expected submittal date is October 1, 1985.

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

ppk
6/26/85

/bjs

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

