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50-315 Donald C. Cook Nuclear Power Plant, Unit 1, Indiana & 05000315
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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: Submits info re Exxon Nuclear Co ECCS/LOCA analysis,per 850930 discussion w/NRC.Error found in TOODEEZ code re calculation of thermal response of hot fuel rod.Peak clad temp underpredicated.Calculations revised.

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October 2, 1985
AEP:NRC:0940B

Donald C. Cook Nuclear Plant Unit No. 1
Docket No. 50-315
License No. DPR-58
ERROR IN EXXON LOCA/ECCS ANALYSIS

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 submitted pursuant to discussions with your staff on September 30, 1985. Attached please find the recent information regarding the ECCS/LOCA analysis for Donald C. Cook Unit 1 which was performed by the Exxon Nuclear Company (ENC).

ENC found an error in the input to the TOODEE2 code, which calculates the thermal response of the hot fuel rod. The error consisted of the assignment of a relative decay heat power density of 0.0 in the outer ring of the fuel pellet. This resulted in an underpredicted peak clad temperature (PCT) at 48 MWD/kg. The revised calculations have been performed by ENC using more realistic values of the pellet density, and internal rod pressure. These calculations have resulted in a PCT of 2189°F, which is in compliance with 10 CFR 50.46.

The information contained in this letter and its attachment represents a correction of the analysis presented in the ENC report entitled, "D. C. Cook Unit 1 LOCA-ECCS Analysis for Extended Exposure" (XN-NF-83-61) and subsequent revision transmitted via letter AEP:NRC: 0745T dated March 20, 1985.

A further justification for operating D. C. Cook Unit 1 with the existing LOCA/ECCS Analysis for Exxon fuel was submitted on June 26, 1985 via letter no. AEP:NRC:0940. Exxon has verified that the sensitivity study referred to in AEP:NRC:0940 was not affected by the error reported in this letter.

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Currently, Donald C. Cook Unit 1 is shut down, and is scheduled for criticality on October 12, 1985. We believe that your approval of the submitted information is required prior to D. C. Cook Unit 1 being in Mode 1. Therefore, your timely processing of the information submitted would be greatly appreciated.

This information will be reviewed by the Plant Nuclear Safety Review Committee (PNSRC) and the Nuclear Safety and Design Review Committee (NSDRC) at their next regularly scheduled meetings.

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
10/2/85

cm

Attachments

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Attachment 1 to AEP:NRC:0940B