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 RECIPIENT NAME: RECIPIENT AFFILIATION:
 DENTON, H.R., Office of Nuclear Reactor Regulation, Director:

SUBJECT: Application for amend to License DPR-58, proposing Tech Spec changes to allow Cycle 8 operation w/ Westinghouse 15x15 optimized fuel assemblies. Approval requested by 830701. Class III fee transmitted by util 830207. ltr.

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May 11, 1983
AEP:NRC:0745C

Donald C. Cook Nuclear Plant, Unit No. 1
Docket No. 50-315
License No. DPR-58
APPLICATION FOR RELOAD LICENSE AMENDMENT
USING WESTINGHOUSE OPTIMIZED FUEL ASSEMBLIES

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

Dear Mr. Denton:

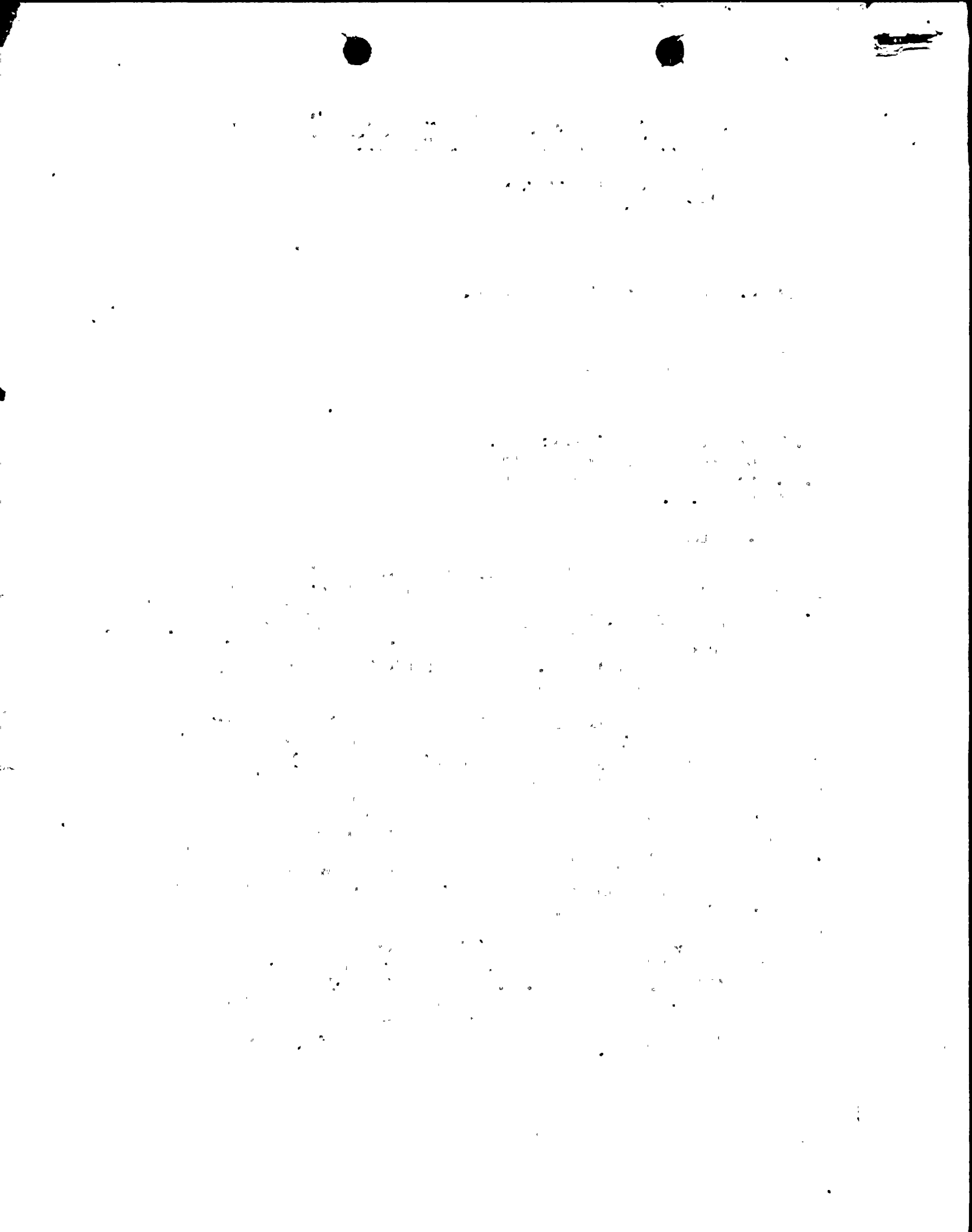
This letter and its Attachments contain additional information in support of the reload license application for the Donald C. Cook Nuclear Plant Unit No.1 using Westinghouse 15 x 15 Optimized Fuel Assemblies (OFA's). The first cycle utilizing OFA's is Cycle 8. Subsequent cycles will utilize increasing numbers of OFA's until a complete OFA core is obtained. Cycle 8 criticality is currently scheduled for August 31, 1983.

Cycle 8 will consist of eighty (80) 15 x 15 Westinghouse OFA's in Region 10, in addition to those Exxon Nuclear Company (ENC) fuel assemblies remaining in the core. Sixty-eight (68) of the OFA's will employ the Wet Annular Burnable Absorber (WABA) burnable poison rods. The Westinghouse OFA design features and methodology have been generically approved by the NRC via the review of Westinghouse Topical Report, WCAP 9500, "Reference Core Report - 17 x 17 Optimized Fuel Assembly". The design evaluations of the WABA rods are presented in WCAP-10021, Revision 1, "Westinghouse Wet Annular Burnable Absorber Evaluation Report" which was submitted in October, 1982 to the NRC for generic review and approval.

The core safety analyses (with the only exception of the large break LOCA) have all been performed at the uprated core power level of 3411 MWt. However, D. C. Cook Unit 1, Cycle 8 will be operated at the current licensed power level of 3250 MWt. This methodology yields an increased margin of operation with regard to core safety limits and also provides your Staff ample review opportunity

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prior to our intended future application for operation at an uprated power level.

Seven Attachments to this letter are included in support of the reload license application. The Technical Specifications change requests necessary for Cycle 8 operation are contained in Attachment A to this letter. The proposed changes are indicated by a vertical bar in the right-hand margin of the page. Attachment F to this letter provides a description of the Technical Specifications change requests. These proposed Technical Specifications changes have been approved by the Plant Nuclear Safety Review Committee (PNSRC) and by the AEPSC Nuclear Safety and Design Review Committee (NSDRC).

A safety evaluation summarizing the results of the Westinghouse analyses, which justify the transition from an all ENC core, through a mixed OFA/ENC fueled core, to an all OFA core, is presented in Attachment B to this letter. The supporting safety analyses for the non-LOCA transients, the large break LOCA, and the small break LOCA are contained in Attachments C, D and E to this letter, respectively. These analyses utilized a revised thermal safety model (PAD code). The revised PAD code features a modified fuel rod gap conductance equation, which results in reduced fuel temperatures, thereby providing an additional LOCA F_Q margin. An evaluation of the revised PAD code is presented in WCAP ^Q 8720, Addendum 2, "Westinghouse Revised PAD Code Thermal Safety Model" which was submitted to the NRC in October, 1982 for generic review and approval. The approved Westinghouse Improved Thermal Design Procedure has been used in the analyses of both the Westinghouse and ENC fuel assemblies for all DNB limited accidents. The Westinghouse WRB-1 DNBR correlation is utilized in the OFA DNB analyses. The ENC fuel has been analyzed by employing the W-3 DNB correlation.

Attachment G to this letter contains our analysis, pursuant to the standards in 10 CFR 50.92, about the issue of no significant hazards considerations in this request for a license amendment. This analysis is being submitted as required by 10 CFR 50.91(a)(1).

As required by 10 CFR 50.91(b)(1) a copy of this entire application for a license amendment is being transmitted to the appropriate official of the State of Michigan.

Approval of Cycle 8 operation with the Westinghouse 15 x 15 OFA's, is needed by July 1, 1983, prior to the start of the fuel shuffle.

Our letter No. AEP:NRC:0745A, dated February 7, 1983, transmitted the Class III fee levied by the NRC for the review of the Cycle 8 reload for Unit 1. The request contained in this letter is part of that review and, therefore, no fee is required by this submittal.

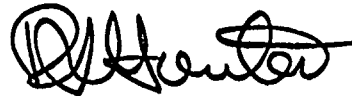


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Hunter

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,



R. S. Hunter
Vice President

/os

cc: John E. Dolan - Columbus
M. P. Alexich
R. W. Jurgensen
W. G. Smith, Jr. - Bridgman
R. C. Callen (State Representative)
G. Charnoff
NRC Resident Inspector at Cook Plant - Bridgman

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