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SUBJECT: Application for amends to licenses DPR-58 & DPR-74. Amends  
 would incorporate cycle & burnup dependent peaking factor  
 penalty.      I

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May 25, 1995

AEP:NRC:1071T

Docket Nos.: 50-315  
50-316

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

Gentlemen:

Donald C. Cook Nuclear Plant Units 1 and 2  
TECHNICAL SPECIFICATION 3.2.6  
CHANGE  $F_Q$  PENALTY,  $F_P$ , ON ALLOWABLE POWER LEVEL  
TO BE BURNUP DEPENDENT AND SPECIFY THE VALUE IN  
THE CORE OPERATION LIMIT REPORT

This letter and its attachments constitute an application for amendment of the technical specifications (T/Ss) for Donald C. Cook Nuclear Plant Units 1 and 2. Specifically, we propose to modify the T/Ss to incorporate a cycle and burnup dependent peaking factor penalty ( $F_P$ ). Since the value of  $F_P$  will typically change each fuel cycle, we propose to specify the value of  $F_P$  in the Core Operating Limits Report (COLR).

Your staff's safety evaluation in November 1993 of WCAP-10216-P, Rev. 1, "Relaxation of Constant Axial Offset Control -  $F_Q$  Surveillance Technical Specification," found the proposed revision to the  $F_Q$  surveillance acceptable. Our proposed changes satisfy the requirements stated in the safety evaluation by penalizing  $F_Q$  in the allowable power level T/S (3.2.6).

Attachment 1 provides a detailed description of the proposed changes, justification for the changes, and our determination of no significant hazards consideration performed pursuant to 10 CFR 50.92. Attachment 2 contains the existing T/S pages marked to reflect the proposed changes. Attachment 3 contains the proposed revised T/S pages. Attachment 4 contains an example of how the proposed change would be represented in the COLR.

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We believe that the proposed changes will not result in (1) a significant change in the types of any effluent that may be released offsite, or (2) a significant increase in individual or cumulative occupational radiation exposure.

The proposed changes have been reviewed by the Plant Nuclear Safety Review Committee and the Nuclear Safety and Design Review Committee.

In compliance with the requirements of 10 CFR 50.91(b)(1), copies of this letter and its attachments have been transmitted to the Michigan Public Service Commission and to the Michigan Department of Public Health.


Sincerely,



E. E. Fitzpatrick  
Vice President

SWORN TO AND SUBSCRIBED BEFORE ME

THIS 25<sup>th</sup> DAY OF May 1995

  
\_\_\_\_\_  
Notary Public

My Commission Expires: 6-28-99

eh

Attachments

cc: A. A. Blind  
G. Charnoff  
J. B. Martin  
NFEM Section Chief  
NRC Resident Inspector - Bridgman  
J. R. Padgett



ATTACHMENT 1 TO AEP:NRC:1071T

JUSTIFICATION AND 10 CFR 50.92  
ANALYSIS FOR CHANGES TO THE  
DONALD C. COOK NUCLEAR PLANT  
UNITS 1 AND 2 TECHNICAL SPECIFICATIONS

DESCRIPTION OF CHANGES

1. Units 1 and 2, technical specification (T/S) 3.2.6:

Where  $F_p$  is set equal to 1.02, modify to state that  $F_p$  is a burnup dependent penalty specified in the Core Operating Limits Report (COLR).

2. Units 1 and 2, T/S 6.9.1.9.2.c:

Update reference to WCAP-10216-P, June 1983, to WCAP-10216-P-A, Revision 1A, February 1994.

3. Units 1 and 2, COLR, Section 2.8.3:

Specify the burnup dependent values of  $F_p$  instead of referring to the value in T/S 3.2.6 (see Attachment 4).

REASON AND JUSTIFICATION FOR CHANGES

The  $F_Q$  and allowable power level (APL) T/S surveillances are required every 31 effective full power days (EFPDs). To take into account the possibility that  $F_Q$  may increase between flux maps, provisions are provided in the T/Ss to accommodate such occurrences. The T/Ss require that  $F_Q(Z)/K(Z)$  be compared to the previous flux map, and if it is found to increase, then additional action must be taken. Either a 2 percent penalty is applied to  $F_Q$ , or no penalty is applied, but  $F_Q$  measurements must be taken every 7 EFPDs until two successive flux maps indicate that  $F_Q(Z)/K(Z)$  is not increasing.

Westinghouse Electric Corporation (Westinghouse) has discovered cases where predicted  $F_Q$  increases more than 2 percent, causing the 2 percent penalty to be non-conservative. These cases are generally at beginning of cycle (BOC) burnups and the effects taper off before reaching the point of least amount of  $F_Q$  margin. Since the T/Ss only allow for a 2 percent penalty to be applied, weekly  $F_Q$  measurements have to be taken during the BOC to ensure that T/S surveillances are satisfied.

Westinghouse revised WCAP-10216-P-A, to address predicted  $F_Q$  increases of more than 2 percent, which was accepted in the NRC safety evaluation dated November 26, 1993. The revision to the WCAP specifies two options for incorporating changes in the T/Ss to accommodate  $F_p$  of greater than 2 percent. The options are to make  $F_p$  burnup dependent and move it in COLR, or to add a penalty to the  $V(Z)$  function. We have chosen to incorporate the option which specifies use of a burnup dependent  $F_p$  that will be specified in the COLR.

The burnup dependent  $F_p$  T/S changes presented in WCAP-10216-P-A, Rev. 1A, address application of the penalty in the  $F_Q$  T/S. Cook Nuclear Plant T/Ss utilize  $F_p$  as it is applied to  $F_Q$  in the allowable power level (APL) T/Ss. Since the APL calculation is dependent on the value of  $F_p$ , the protection against an increasing  $F_Q$  is identical to that in the recommended T/S changes specified in WCAP-10216-P-A, Rev. 1A.





Incorporating a burnup dependent  $F_Q$  penalty in the COLR would allow application of the larger penalty, when necessary, to maintain a 31 EFPD surveillance schedule. Therefore, the weekly  $F_Q$  measurements would not be required to satisfy the T/S surveillance requirements.

#### 10 CFR 50.92 EVALUATION

Per 10 CFR 50.92, a proposed amendment will not involve a significant hazards consideration if the proposed amendment does not:

- (1) involve a significant increase in the probability or consequences of an accident previously evaluated,
- (2) create the possibility of a new or different kind of accident from any accident previously evaluated, or
- (3) involve a significant reduction in a margin of safety.

#### Criterion 1

The proposed changes will not involve a significant increase in the probability of an accident previously evaluated because the changes will not result in a change to any of the process variables that might initiate an accident. There are no physical changes to the plant associated with this T/S change. The consequences of an accident previously evaluated will not be increased because the changes increase the penalty applied to  $F_Q$  when it is measured to be increasing.  $F_Q$  and allowable power level (APL) T/S surveillance requirements are not being changed. Furthermore, allowing a cycle and burnup dependent  $F_Q$  penalty to be located in the COLR was accepted by the NRC in a safety evaluation on WCAP-10216-P, Rev. 1.

#### CRITERION 2

The proposed changes will not create the possibility of a new or different kind of accident from any accident previously evaluated because the changes will involve no physical changes to the plant nor any changes in plant operations. Furthermore, the  $F_Q$  and APL T/S surveillance requirements are not being changed, and the change to the  $F_Q$  penalty is conservative.

#### CRITERION 3

The proposed amendment will not involve a significant reduction in a margin of safety. When the increased  $F_Q$  penalty is applied, it reduces the allowable power level, thus increasing the margin of safety.

ATTACHMENT 2 TO AEP:NRC:1071T

EXISTING TECHNICAL SPECIFICATION  
PAGES MARKED TO REFLECT PROPOSED CHANGES