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SUBJECT: Application for amend to license DPR-74, removing TSs re  
           shutdown & control rod position indication while in modes 3,  
           4 & 5.

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March 12, 1996

AEP:NRC:1248

Docket Nos.: 50-316

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

Gentlemen:

Donald C. Cook Nuclear Plant Unit 2  
PROPOSED AMENDMENT TO REMOVE TECHNICAL SPECIFICATIONS 3.1.3.3 AND 3.10.5, "ROD POSITION INDICATOR CHANNELS-SHUTDOWN," TO ACHIEVE CONSISTENCY WITH DONALD C. COOK NUCLEAR PLANT UNIT 1 AND NUREG-1431.

This letter and its attachments constitute an application for amendment to the technical specifications (T/Ss) for Donald C. Cook Nuclear Plant unit 2. Specifically, we are proposing to remove the T/Ss related to shutdown and control rod position indication while in modes 3, 4, and 5. The following unit 2 T/Ss are affected: 3.1.3.3 and 3.10.5 and associated surveillances and bases.

The existing Cook Nuclear Plant unit 2 T/Ss require that rod position indication be OPERABLE for each shutdown and control rod not fully inserted in modes 3, 4, and 5. If OPERABILITY cannot be assured, the number of control or shutdown rods that can be withdrawn is limited to a single bank while performing rod drop tests. This requirement is overly restrictive since, during shutdown modes, the ability to ensure adequate shutdown margin can be compensated by an increase in the boron concentration of the reactor coolant system.

In addition to the reduction in unnecessary requirements, the proposed amendment would also align the affected unit 2 T/Ss with the unit 1 T/Ss and the improved standard technical specifications issued by the NRC as NUREG-1431, Revision 1.

Attachment 1 provides a detailed description of the proposed changes, the 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

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to reflect the proposed changes. Attachment 3 contains the proposed T/S pages.

We believe 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.

These proposed changes have been reviewed by the Plant Nuclear Safety Review Committee and will be reviewed at the next regularly scheduled Nuclear Safety and Design Review Committee meeting.

It is requested that the proposed amendment be approved by April 12, 1996 in support of the upcoming unit 2 refueling.

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 12<sup>th</sup> DAY OF March 1996

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

My Commission Expires: 6-28-99

plt

Attachment

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

ATTACHMENT 1 TO AEP:NRG:1248

DESCRIPTION AND JUSTIFICATION OF CHANGES

10 CFR 50.92 ANALYSIS FOR CHANGES  
TO THE DONALD G. COOK NUCLEAR PLANT  
UNIT 2 TECHNICAL SPECIFICATIONS

DESCRIPTION OF CHANGES

The following unit 2 technical specifications (T/S) 3.1.3.3 and 3.10.5 and associated surveillances and bases are affected by the proposed change.

T/S 3/4.1.3.3

Delete the Reactivity Control Systems, Position Indicator Channels -Shutdown, Limiting Condition for Operation (3.1.3.3) and the associated surveillance (4.1.3.3) (page 3/4 1-22).

T/S 3/4.10.5

Delete the Special Test Exception, Position Indicator Channels Shutdown, Limiting Condition for Operation (3.10.5) and the associated surveillances (4.10.5.1 and 4.10.5.2) (page 3/4 10-5).

Also, delete the bases reference to T/S 3/4.10.5, Position Indicator Channel - Shutdown (page B 3/4 10-1)

Index

Delete reference to "Position Indicator Channels - Shutdown," from the technical specification Index (page IV).

II. JUSTIFICATION FOR CHANGES

The axial position of shutdown rods and control rods is determined by two separate and independent systems: the bank demand position indication system and the analog rod position indication (ARPI) system.

The current unit 2 T/Ss require the ARPI system to be OPERABLE for each shutdown and control rod not fully inserted in modes 3, 4, and 5. To satisfy this requirement, two sets of ARPI calibrations must be performed. One calibration is performed on an individual rod bank basis to satisfy the ARPI requirements during rod drop testing in accordance with T/S 3/4.10.5. The second calibration is performed at the completion of the "bank" calibration sequence to ensure that the rods are calibrated correctly to address bank overlap. These calibrations are redundant and time intensive.

Additionally, in modes 3, 4, and 5, the boron concentration in the reactor coolant system (RCS) is increased to ensure that adequate shutdown margin (SDM) is achieved and maintained in accordance with existing Cook Nuclear Plant T/Ss. The calculation used to obtain

the required boron concentration takes into account the relative position of the control and shutdown rods. Strict procedural controls are in place at Cook Nuclear Plant to ensure that an all rods out shutdown margin is maintained during rod position indicator calibration.

The adjustment of boron concentration to assure adequate shutdown margin in modes 3, 4, and 5 is also supported by the Improved Standard Technical Specifications (ISTS) for Westinghouse Plants (NUREG-1431). The ISTS does not contain a T/S for rod position indication in modes 3, 4, and 5; however, the bases position for the modes 1 and 2 T/Ss address the shutdown modes in the following manner.

"In shutdown MODES, the OPERABILITY of the shutdown and control banks has the potential to affect the required SDM (*shutdown margin*), but this effect can be compensated for by an increase in the boron concentration of the Reactor Coolant System."

Therefore, the assurance that adequate shutdown margin exists for an all rods out condition in modes 3, 4, and 5 negates the need for rod position indication in these modes.

Technical specification 3.10.5 is a "special test exception" directly tied to T/S 3.1.3.3. Specifically, it provides an exemption from the "position indicator channel - shutdown" requirements during rod drop testing. Deletion of this specification is necessary since the primary specification 3.1.3.3 is being deleted.

It is concluded that the deletion of T/S 3.1.3.3, Position Indication Channels - Shutdown, does not result in a reduction in safety as the impact on shutdown margin is adequately compensated for by an increase in boron concentration that is consistent with the guidance of NUREG-1431.

### III. 10 CFR 50.92 CRITERIA

Per 10 CFR 50.92, this proposed change does not involve a significant hazards consideration because the change 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 boron concentration in the reactor coolant system will be high enough to assure adequate SDM in modes 3, 4, and 5. The calculation to obtain the required boron concentration takes into account the position of the rods. Shutdown margin is assumed as an initial condition in the safety analysis. The safety analysis establishes a SDM that ensures specified acceptable fuel design limits are not exceeded. As long as the SDM is satisfied, no change in the probability or consequences of an accident previously evaluated will result from the proposed deletion of the "position indicator - shutdown" specification. It is noted that this change is consistent with the new ISTS approved by the NRC as NUREG-1431, Rev. 1.

Criterion 2

The ability to insert the control and shutdown rods provided by the rod control system is not affected by the OPERABILITY status of the ARPI system. As mentioned previously, the reactor coolant system boron concentration will be high enough to assure adequate SDM is maintained. Therefore, it is concluded that the proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

Criterion 3

The margin of safety requirements are not affected by the removal of this T/S. The required SDM which is an initial condition in the safety analysis, is unaffected since the reactor coolant system boron concentration is increased to address the potential "all rods out" configuration. Based on these considerations, it is concluded that the proposed changes do not involve a significant reduction in a margin of safety.