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SUBJECT: Application for amends to licenses DPR-58 & DPR-74, revising  
TS bases 3/4.7.9 re fire suppression sys to reflect  
discontinued reliance on pumps 1-PP-75 & 2-PP-75  
(screenhouse fire pumps) as backup sys.

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AEP:NRC:0692CY

Donald C. Cook Nuclear Plant Units 1 and 2  
Docket Nos. 50-315 and 50-316  
License Nos. DPR-58 and DPR-74  
REVISION TO TECHNICAL SPECIFICATION BASES 3/4.7.9  
FIRE SUPPRESSION SYSTEMS

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

Attn: W. T. Russell

July 26, 1994

Dear Mr. Russell:

In AEP:NRC:0692CW, dated March 16, 1994, we indicated that a proposal to revise and clarify the BASES for fire suppression systems would be submitted. Accordingly, this letter and its attachments constitute an application for amendment to the subject Technical Specifications (T/Ss) for Donald C. Cook Nuclear Plant Units 1 and 2. Specifically, we are proposing to implement changes to the fire suppression system's BASES to reflect the discontinued reliance on pumps 1-PP-75 and 2-PP-75 (screenhouse fire pumps) as a backup system.

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 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 the Nuclear Safety and Design Review Committee.

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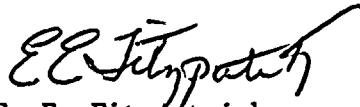
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In compliance with the requirements of 10 CFR 50.91(b)(1), copies of this letter and its attachments have been transmitted to the Michigan Public Service Commission and to the Michigan Department of Public Health.

This letter is submitted pursuant to 10 CFR 50.30(b) and, as such, an oath statement is attached.

Sincerely,



E. E. Fitzpatrick  
Vice President

cad

Attachments

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

STATE OF OHIO)  
COUNTY OF FRANKLIN)

E. E. Fitzpatrick, being duly sworn, deposes and says that he is the Vice President of licensee Indiana Michigan Power Company, that he has read the foregoing REVISION TO TECHNICAL SPECIFICATION BASES 3/4.7.9 FIRE SUPPRESSION SYSTEMS and knows the contents thereof; and that said contents are true to the best of his knowledge and belief.

E. E. Fitzpatrick

Subscribed and sworn to before me this 26<sup>th</sup>

day of July, 1994.

Rita D. Hill

NOTARY PUBLIC

RITA D. HILL

NOTARY PUBLIC, STATE OF OHIO  
MY COMMISSION EXPIRES 6-22-99

ATTACHMENT 1 TO AEP:NRC:0692CY

DESCRIPTION AND JUSTIFICATION OF CHANGES

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

A. DESCRIPTION OF CHANGES

The changes proposed by this letter are consistent with applicable regulations and NRC guidance. The screenhouse fire pumps, which take direct suction from the forebay structure, have been experiencing recurrent operational problems due to zebra mussel infestation despite periodic chemical treatments. As a result, they are no longer considered a reliable and economically viable backup source of fire suppression water. Justification to support the use of alternate backup water supplies in lieu of the screenhouse fire pumps is provided below. The changes are described as follows:

1. Fire Suppression Systems

T/S BASES: 3/4.7.9 (Unit 1)

Page(s): B 3/4 7-7 and B 3/4 7-8 (Unit 1)

References to the diesel-engine driven fire pumps as a backup to one of the fire suppression pumps are removed including any reference to the flow paths from Lake Michigan.

2. Fire Suppression Systems

T/S BASES: 3/4.7.9 (Unit 2)

Page(s): B 3/4 7-7 (Unit 2)

References to the diesel-engine driven fire pumps as a backup to one of the fire suppression pumps are removed including any reference to the flow paths from Lake Michigan.

B. JUSTIFICATION FOR CHANGES

Screenhouse fire pump operational problems, which began early in the summer of 1993, continued to escalate through January 1994. Despite periodic chemical treatments, continued surveillance tests of the screenhouse fire pumps have repeatedly resulted in pluggage of the engine heat exchanger, pump cooling lines, and discharge strainers caused by dead zebra mussel shells drawn into the components during pump surveillance operation. It has become apparent that continued attempts to maintain the screenhouse fire pumps are impractical considering their inherent susceptibility to zebra mussel contamination.

To address the unreliability of the screenhouse fire pumps, technical reviews have been conducted and have demonstrated the availability of acceptable alternate backup fire suppression water supply capability using the Lake Township water supply. Furthermore, administrative guidelines for the use of this water

supply have been completed to ensure that Cook Nuclear Plant will continue to have a reliable backup source of fire suppression water which is independent from the water storage tanks and associated primary fire suppression water pumps.

In accordance with 10CFR50.59 and the guidance provided in NSAC-125, an unreviewed safety question determination was performed. It was concluded, therein, that the substitution of the Lake Township water supply in lieu of the screenhouse fire pumps as a backup source of fire suppression water for the storage tank system does not constitute an unreviewed safety question per 10CFR50.59(a)(2), nor does it constitute a significant hazard to the health and safety of the public.

Based on the results of the 10CFR50.59 evaluation, the results of the fire probabilistic risk assessment (PRA) analysis, and the continued availability of a viable alternate backup fire suppression water supply, the costs for continued surveillance and maintenance activities associated with the screenhouse fire pumps do not have a commensurate nuclear safety benefit. The costs for maintaining the screenhouse fire pumps, based on nuclear plant maintenance (NPM) tracking data, were approximately \$100,000 for 1993.

C. 10 CFR 50.92 CRITERIA

Per 10 CFR 50.92, a proposed change does not involve a significant hazards consideration if 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 probability of a fire occurring is not impacted by the proposed change, which involves a change to the backup fire suppression water supply. Specifically, the change to the backup fire suppression water supply involves using the Lake Township water supply instead of using the screenhouse fire pumps. The plant's in-depth fire protection capability will not be compromised and the proposed changes have been determined to be compatible with our plant operating experience.



The primary fire suppression water supply consists of one electric motor driven 2,500 gpm fire pump, two diesel driven 2,500 gpm fire pumps, and two water storage tanks, each with a minimum usable volume of 565,000 gallons and each capable of supplying fire suppression water to the largest fire suppression system demand. This system is designed to provide full fire suppression water supply capacity even with a loss of any one of the three pumps or the loss of off-site power. The primary pumps can take suction from either one or both of the water tanks and a failure of one tank or its piping will not result in a loss of both tanks. The proposed change to the backup fire suppression water supply involves using the Lake Township water supply instead of using the screenhouse fire pumps. This is consistent with, and meets the intent of, the action statement for Technical Specification 3.7.9.1(b)(2) which requires "Establish[ing] a backup fire suppression water system within 24 hours." Therefore, the proposed change will not increase the radiological consequences of the accidents previously evaluated in the UFSAR.

Based on these considerations, it is concluded that the changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

#### Criterion 2

Possible accidents of a different type are limited to accidents that are as likely to happen as those considered in the FSAR. The proposed change will not challenge the fire protection system performance or degrade required backup fire suppression system requirements as defined in Appendix A to Branch Technical Position (BTP) APCSB 9.5-1.

The dedicated fire water storage tanks have been seismically designed to conform to Uniform Building Code Zone 1 requirements. Consequently, although they are not Seismic Class I, the tanks will withstand an earthquake of a magnitude that may be expected in this zone. However, in the extremely unlikely event of a seismically induced catastrophic failure of both tanks, the Lake Township water supply could be aligned in a timely manner and in accordance with T/S requirements.

This alternate source can provide a sufficient quantity of water to meet Technical Specification fire suppression water system demands. Additionally, the in-depth fire protection program at Cook Nuclear Plant includes other forms of fire suppression such as carbon dioxide hose stations and wheeled or portable hand fire extinguishers. Finally, additional fire suppression capability will be provided by plant and local fire department personnel who are qualified to respond to fire emergencies at Cook Nuclear Plant. The local fire department personnel regularly participate in training exercises with our fire brigade to maximize coordination and minimize response time.

It should be noted that the screenhouse fire pumps were credited in Attachment 1 to AEP:NRC:0692CC for being capable of refilling one of the storage tanks within an eight hour period. Alternative connections, utilizing the Lake Township water supply which is normally used as a make-up water source to the tanks, have been investigated and found to be capable of refilling a storage tank within the recommended eight hour period.

Finally, we have reviewed the results of the Individual Plant Examination of External Events (IPEEE) Fire Analysis completed in April 1992. The comprehensive fire PRA analysis determined that the total fire induced contribution to core damage frequency for Cook Nuclear Plant was  $1.61\text{E-}07$  per reactor year. This represents 0.26% of the internal events core damage frequency for Cook Nuclear Plant. Therefore, internal fires are clearly not considered dominant contributors to core damage frequency at Cook Nuclear Plant.

Utilization of the Lake Township water supply provides a clean and reliable backup source of fire suppression. In addition, the engineered redundancy of the primary fire suppression water supply (three pumps rated at 2,500 gpm and two water storage tanks maintained above 565,000 gallons) provides sufficient system reliability in accordance with guidance provided by the NFPA and Appendix A to BTP APCS 9.5-1.

Therefore, with the continued availability of an acceptable backup fire water supply system, 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

Since there will be continued availability of an adequate and reliable backup fire water supply, the proposed change will not reduce the margin of safety as defined in the basis for any T/S.

Unlike Lake Michigan, the Lake Township water supply is not an "unlimited" source of water. However, this supply is considered to be more reliable and economically viable due to the inherent risks associated with zebra mussel and asiatic clam infestation. Therefore, the reduction in fire pumps is offset by the increase in reliability and viability of the Lake Township water supply which is capable of meeting the largest T/S fire suppression system demand. Finally, the continuous availability of other backup fire suppression equipment provides qualified backup such that abandonment of the screenhouse fire pumps will not significantly increase plant fire risk.

Based on these considerations, it is concluded that the changes do not involve a significant reduction in the margin of safety.