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SUBJECT: Application for amends to Licenses DPR-58 & DPR-74,revising fire protection program re RCS wide range temp indication.

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AEP:NRC:0692BQ

Donald C. Cook Nuclear Plant Units 1 and 2
Docket Nos. 50-315 and 50-316
License Nos. DPR-58 and DPR-74
REVISED APPENDIX R REMOTE SHUTDOWN TECHNICAL SPECIFICATIONS
FOR RCS WIDE RANGE TEMPERATURE INDICATION

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

Attn: T. E. Murley

January 23, 1989

Dear Dr. Murley:

Introduction

The purpose of this letter is to request a change in our approved fire protection program regarding reactor coolant system wide range temperature indication. This letter revises our application for amendment to the Technical Specifications (T/Ss) submitted in AEP:NRC:0692BJ dated June 16, 1988. The validity of our significant hazards analysis submitted in AEP:NRC:0692BJ is unaffected and consequently a new significant hazards analysis has not been included in this letter. Attachment 1 to this letter provides the proposed revised T/S pages that are intended to replace the corresponding pages submitted in AEP:NRC:0692BJ. This request is also submitted in accordance with the guidelines in Section F on page 4 of Generic Letter 86-10, "Implementation of Fire Protection Requirements." This generic letter states: "If the fire protection program committed to by the licensee is required by a specific license condition or is not part of the FSAR for the facility, the provisions of 10 CFR 50.59 may not be applied to make changes without prior NRC approval. Thus licensees may be required to submit amendment requests even for relatively minor changes to the fire protection program."

Section 4 of "Safe Shutdown Capability Assessment, Proposed Modifications, and Evaluations - Revision 1" for the Donald C. Cook Nuclear Plant, submitted by AEP:NRC:0692AZ dated March 20, 1987, identifies reactor coolant system wide range hot leg and cold leg temperature indications as safe shutdown components. These indications are included as safe shutdown components because the difference between the hot leg and cold leg wide range temperatures provides a direct indication of the existence of a

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natural circulation condition. Furthermore, reactor coolant system pressure is maintained by monitoring reactor coolant system pressure and hot leg temperature instrumentation and, if available, using manual control of the pressurizer heaters (not required for safe shutdown) to ensure that an appropriate subcooling margin is achieved.

Wide range hot leg and cold leg temperature detection is provided by RTDs located in each of the hot and cold legs for a total of eight RTDs. Signals from these RTDs are recorded in the control room and displayed on local shutdown indication (LSI) panels. Wide range hot leg and cold leg temperature indications for reactor coolant system loops 1 and 4 are available at LSI-5 and these indications for reactor coolant system loops 2 and 3 are available at LSI-6. The hot and cold leg temperature indications of all four coolant loops are available at LSI-4. The saturation meter also takes inputs from these RTDs. The hot leg temperatures from loops 1 and 3 are inputted to the reactor vessel level indication system (RVLIS) as well.

The present power supply configuration for the reactor coolant system wide range hot leg and cold leg temperature indication is based on a 10 CFR 50 Appendix R modification that involves providing power from a single diesel-backed bus. A switchable alternate power supply from the matching opposite unit bus is provided for certain fire scenarios. This present Appendix R design ensures the ability to monitor the wide range hot leg and cold leg temperature of at least two of the four reactor coolant system loops in the event of any single fire. Sections 4 and 5 of "Safe Shutdown Capability Assessment, Proposed Modifications, and Evaluations - Revision 1," describes reactor coolant system temperature monitoring instrumentation as presented above.

Description of Proposed Change

We propose to remove the wide range hot leg and cold leg temperature indications of reactor coolant system loops 1 and 3 from the local shutdown indication panels. Wide range reactor coolant system temperature monitoring falls under the scope of Regulatory Guide 1.97, Revision 3. The reason for requesting this proposed change is to meet the Category 1 redundancy criteria for the coolant inventory variable (RVLIS), identified as Item No. B-9 on page 26 of AEP:NRC:0773AB. This letter, submitted to the NRC on October 5, 1988, provides an updated status report detailing our compliance with Regulatory Guide 1.97, Revision 3.

As previously mentioned, two reactor coolant system wide range hot leg temperatures provide inputs to RVLIS. Since all eight of our RTDs are currently powered by a single diesel-backed bus, we do

not presently comply with the redundancy criteria set forth in Regulatory Guide 1.97, Revision 3 for Category 1 variables. Removal of the wide range hot leg and cold leg temperature indications of two of the four coolant loops from the local shutdown indication panels will allow us to separate these four RTDs into two independent groups. Each group will contain the RTDs used for monitoring the wide range temperature of one loop and will be powered by a power supply that is independent of the remaining group.

Wide range hot leg and cold leg temperature indications for reactor coolant system loops 2 and 4 will remain available at the local shutdown indication panels. The power supply for the temperature indications of these two loops will remain in the present configuration. The result of this proposed change is a reduction, from two to one, in the number of reactor coolant system loops that can provide wide range temperature indication in the event of certain specific fires. In other words, the availability of wide range hot leg and cold leg temperature indications is ensured for either loop 2 or loop 4 in the event of any single fire. These available indications will correspond to one of the two steam generators to be used for natural circulation cooldown.

Justification for Proposed Change

We do not consider the proposed change in our approved fire protection program as one having a significant impact on our 10 CFR 50 Appendix R compliance or plant safety. Referring to the loop with available temperature indication as the "reference leg" and the remaining loop as the "blind leg," the following procedural steps will confirm natural circulation cooldown:

1) The subcooling margin of the reactor coolant system would be maintained at not less than 50°F. The hot leg temperature of the blind steam generator will be essentially equal to the hot leg temperature of the reference steam generator due to mixing of inlet flows in the lower plenum, through the core, and in the upper plenum.

2) Increase or decrease the auxiliary feedwater flow to the reference and blind steam generators as necessary to establish and maintain level between 50 and 55% on the wide range. Either steam generator is capable of removing decay heat by natural circulation if its wide range level is between 10 and 100%.

3) Open the power operated relief valves on both steam generators as directed using the manual loader valves to

establish cooldown. The blind steam generator level and power operated relief valve would be controlled in a manner similar to that of the reference steam generator.

Items 1 and 2 above are already contained in the present procedure for emergency remote shutdown (Appendix R procedure). Item 3 will be added to the procedure as a result of the design change process.

The above procedural steps, including the procedure revisions that will result from the proposed design change, will continue to ensure our capability for safe shutdown of the reactor in the event of any fire. Therefore, this proposal does not adversely affect the continued safe operation of the Donald C. Cook Nuclear Plant.

Impact on Regulatory Guide 1.97, Revision 3 Completion Schedule

Item Nos. B-4, B-5, and B-9 of our letter providing updated status of our compliance with Regulatory Guide 1.97, Revision 3 (AEP:NRC:0773AB dated October 5, 1988) are scheduled to be completed for the 1989 outage - Unit 1, and the 1990 refueling outage - Unit 2. Since the proposed design for upgrading these items has an impact on our approved fire protection program, we cannot move forward with the installation of these upgrades until we receive approval for amending our approved fire protection program. We are, however, proceeding with engineering and design in anticipation of a favorable response to this request.

Pursuant to 10 CFR 170.12(c), we have enclosed an application fee of $150.00 for the proposed amendment.

This document has been prepared following Corporate procedures which incorporate a reasonable set of controls to ensure its accuracy and completeness prior to signature by the undersigned.

Sincerely,

M. P. Alexich
Vice President

MPA/eh

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