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SUBJECT: Application for amends to licenses DPR-58 & DPR-74,revising TS 4.7.1.2 re turbine driven auxiliary FW.

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August 1, 1997

AEP:NRC:0906H

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 CHANGE REQUEST 4.7.1.2

This letter and its attachments constitute an application for amendment of the technical specifications (T/Ss) for Cook Nuclear Plant units 1 and 2. Specifically, we are proposing a change to T/S 4.7.1.2 for each unit. The proposed change will delete the wording "when the secondary steam supply pressure is greater than 310 psig" from the T/S. This wording has been found to be ambiguous and can be misinterpreted to mean that the turbine driven auxiliary feedwater (TDAFP) pump must achieve design conditions when tested with an inlet steam pressure of 311 psig, a condition that is not achievable.

The T/S wording, which requires that the TDAFP develop its required head when the secondary side pressure is greater than 310 psig, was a topic of discussion between AEP personnel and the NRC resident inspector (see inspection report 50-315/316-97004 (DRP) dated May 6, 1997).

The surveillance test procedure that is used to comply with the T/S directs personnel to test the pump at its design speed, 4350 rpm, and establish a flow rate of 700 gpm. Once these conditions have been established, the resulting differential pressure is measured and compared to a reference differential pressure value. Differences between the measured value and the reference value are then compared and evaluated for signs of degradation.

This test has been routinely conducted at a secondary side pressure of between 500 and 900 psig, and it is our position that this secondary side pressure meets the present T/S requirement to test the TDAFP at a secondary side pressure greater than 310 psig. However, as noted in the inspection report, "The inspector's concerns centered on the question of whether the licensee was required to perform the surveillance test at just greater than 310 psig (e.g., 311 psig)."

A001
1/1

Our investigation of the TDAFP surveillance has shown that the 310 psig value contained in the T/S is not related to assumptions or safety analyses addressed in the UFSAR chapter 14 events. There are several accidents identified in chapter 14 that describe operation of the auxiliary feedwater system as either a primary or backup resource for coping with the transient. These transients include loss of normal feedwater, loss of offsite power, loss of load, steam line rupture, and feed line break. Of these, only the feed line rupture analysis takes credit for the performance of the TDAFP.

A review of the steam generator pressure curves provided in the UFSAR for this event, figures 14.2.8-8 and 14.2.8-4, indicate that at the time auxiliary feedwater flow is initiated, the steam generator pressure is above 550 psia and then increases to the steam generator safety valve setpoint. The UFSAR chapter 14.2.8 analysis states that the auxiliary feedwater flow conditions are 685 gpm to a steam generator at a pressure of 1133 psia. Under these conditions, the pressure at the TDAFP inlet is far greater than the 310 psig stated in the T/S, confirming our opinion that this value is not related to the accident analysis.

The following comment in the inspection report acknowledges our conclusion. "...the inspector's review of the design basis and licensing basis of the TDAFWP confirmed the licensee's statement that the TDAFWPs were not taken credit for in any accident analysis at the secondary side pressure of 310 psig."

Attachment 1 to this letter provides a detailed description of the proposed changes, the justification of 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 and approved by the plant nuclear safety review committee and will be reviewed by the nuclear safety and design review committee at the next scheduled meeting.

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 Michigan Department of Public Health.

The T/S pages submitted with this letter will be impacted by the T/S page changes submitted in our AEP:NRC:0433P letter, "Administrative Corrections", dated March 26, 1997. The markups attached to this submittal do not account for any approval or

incorporation of the submittals in AEP:NRC:0433P, but reflect the T/S pages in their current state.

Sincerely,

E E Fitzpatrick

E. E. Fitzpatrick
Vice President

SWORN TO AND SUBSCRIBED BEFORE ME

THIS 1st DAY OF AUGUST 1997

Linda L. Boelcke
Notary Public

My Commission Expires: 1-21-2001

LINDA L. BOELCKE
Notary Public, Berrien County, MI
My Commission Expires January 21, 2001

vlb

Attachments

c: A. A. Blind
A. B. Beach
MDEQ - DW & RPD
NRC Resident Inspector
J. R. Padgett

ATTACHMENT 1 TO AEP:NRC:0906H

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

1. Description of Change

The proposed change would modify technical specification (T/S) 4.7.1.2.g by deleting the words:

> "when the secondary steam supply pressure is greater than 310 psig"

II. Justification For Change

As presently written, T/S 4.7.1.2.b instructs the licensee to demonstrate that each auxiliary feedwater pump is operable by:

> "Verifying that the turbine driven auxiliary feedwater pump's developed head at the test flow point is greater than or equal to the required developed head when the secondary steam supply pressure is greater than 310 psig."

The words "greater than 310 psig" are ambiguous and can be misinterpreted as meaning that the pump has to be tested when the steam pressure is as low as 311 psig. At 311 psig steam pressure, a condition which is not representative of the accident conditions (feedwater line break), testing conducted in 1994 demonstrated that the pump would not reach its rated speed, nor could it deliver the flow required by the test procedure. However, by the use of the pump affinity laws, it is possible to demonstrate that the pump is capable of delivering adequate flow under accident conditions at 311 psig.

The pump is currently tested at its design speed of 4350 rpm, and the flow rate is established at 700 gpm, a condition that is more representative of actual pump capability. This test condition ensures that the turbine governor is controlling the pump speed at the design speed; it tests the pump at a flow condition that enables pump degradation to be more easily discerned; and, it minimizes variability due to test instrumentation. Experience has demonstrated that a turbine driven auxiliary feedwater pump (TDAFP) test performed at 4350 rpm and 700 gpm requires a steam pressure of 500 psig or greater.

By use of the pump affinity laws, the results of this single point test can be correlated with the performance required under accident conditions.

III. 10 CFR 50.92 Analysis

According to 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 significantly increase the probability or consequences of an accident previously evaluated.

This is an administrative change intended to clarify the technical specification. There will be no change to the test procedure as a result of this clarification.

The proposed change better correlates with the accident requirements for which TDAFP flow is required, and the change is consistent with the present requirement of testing the TDAFP at a secondary side pressure greater than 310 psig.

CRITERION 2

The proposed changes will not create the possibility of a new or different kind of accident from any accident previously evaluated. The proposed change does not physically modify the plant, nor does it result in the installation of equipment which could introduce a new failure mechanism.

CRITERION 3

The proposed change does not involve a significant reduction in a margin of safety. The proposed change does not affect the performance of the TDAFP. Thus, the TDAFP remains capable of providing the required flow under accident conditions, and no safety margins are reduced.

This is an administrative change intended to clarify the technical specification. There will be no change to the test procedure as a result of this clarification.

ATTACHMENT 2 TO AEP:NRC:0906H

EXISTING TECHNICAL SPECIFICATION
PAGES MARKED TO REFLECT PROPOSED CHANGES