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SUBJECT: Application for amends to licenses DPR-58 & DPR-74, modifying
 TS 3/4.5.1, "Accumulators" such that TS more consistent w/
 new STS for Westinghouse plants, published by NRC as
 NUREG-1431.

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AEP:NRC:1186

Donald C. Cook Nuclear Plant Units 1 and 2
Docket Nos. 50-315 and 50-316
License Nos. DPR-58 and DPR-74
TECHNICAL SPECIFICATION CHANGE REQUEST:
ACCUMULATORS

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

Attn: T. E. Murley

November 12, 1993

Dear Dr. Murley:

This letter and its attachments constitute an application for amendment to the Technical Specifications (T/Ss) for the Donald C. Cook Nuclear Plant Units 1 and 2. The proposed changes modify T/S 3/4.5.1 (Accumulators) such that the T/S is more consistent with the new Standard T/Ss for Westinghouse plants, published by the NRC as NUREG 1431. Associated changes to the corresponding Bases section are also proposed.

Attachment 1 provides a detailed description of the proposed changes, the justification for the changes, and our proposed 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 change. Attachment 3 contains the proposed, revised T/S pages.

This submittal proposes changes to Unit 2 T/S page 3/4 5-2. An additional change to this page was proposed in our submittal AEP:NRC:1181, dated April 16, 1993.

We believe that the proposed change will not result in 1) a significant change in the types of effluents or a significant increase in the amount of any effluents 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 by the Nuclear Safety and Design Review Committee.

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Dr. T. E. Murley

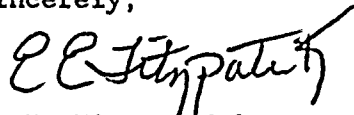
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AEP:NRC:1186

In compliance with the requirements of 10 CFR 50.91(b)(1), copies of this letter and its attachments have been transmitted to Mr. J. R. Padgett of 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

dr

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 forgoing TECHNICAL SPECIFICATION CHANGE REQUEST: ACCUMULATORS 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 12th
day of November, 19 93.

Rita D. Hill
NOTARY PUBLIC
RITA D. HILL
NOTARY PUBLIC, STATE OF OHIO
MY COMMISSION EXPIRES 6-23-94

ATTACHMENT 1 TO AEP:NRC:1186

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

I. DESCRIPTION OF THE CHANGES

We propose to modify T/S 3/4.5.1 (Accumulators) for Units 1 and 2 of the Cook Nuclear Plant such that the T/S requirements are more consistent with those contained in the new Standard T/Ss for Westinghouse plants published by the NRC as NUREG 1431. The specific proposed changes are as follows:

A. Action Statements

As presently written, Action Statement (a) provides guidance to be followed if a single accumulator is inoperable, except as a result of a closed isolation valve. This action statement allows one hour to restore an inoperable accumulator to operable status, or the unit must be placed in Mode 4 within the following 8 hours (Unit 1) or 12 hours (Unit 2).

Action Statement (b) provides the requirements for a single accumulator inoperable due to a closed isolation valve. In this case, the valve is to be immediately opened, or the unit placed in Mode 3 within one hour and Mode 4 within the next 8 hours (Unit 1) or 12 hours (Unit 2).

We propose to replace the present Action Statements a and b with new action statements.

- 1) Action Statement (a) provides guidance to be followed if the accumulator boron concentration is not within the T/S limits. Seventy-two hours are allowed to restore the boron concentration to within the limits. If the concentration is not restored within the time limit, the unit must be placed in at least Mode 3 within the next 6 hours and pressurizer pressure reduced below 1,000 psig within the following 6 hours.
- 2) Action Statement (b) covers all other inoperabilities of a single accumulator. With an accumulator inoperable except as provided for in Action Statement (a), one hour is allowed to restore the accumulator to operable status. If the accumulator is not restored to operable status within one hour, the unit must be placed in at least Mode 3 within the next 6 hours and pressurizer pressure reduced below 1,000 psig within the following 6 hours.

B. Surveillance Requirements

- 1) T/S 4.5.1.b currently requires that the accumulator be verified operable:

At least once per 31 days and within 6 hours after each solution volume increase of greater than or equal to 1% of tank volume by verifying the boron concentration of the accumulator solution.

We are proposing to modify this surveillance requirement such that it reads as follows:

At least once per 31 days, and, for the affected accumulator(s), within 6 hours after each solution volume increase of greater than or equal to 1% of tank volume (that is not the result of addition from the refueling water storage tank) by verifying the boron concentration of the accumulator solution.

- 2) We are proposing to delete surveillance requirement 4.5.1.d, which requires verification at least once per 18 months that each accumulator isolation valve opens automatically upon receipt of a safety injection test signal.
- 3) For Unit 1 T/S 4.5.1.a.1, we are proposing to change the term "water level" to "contained borated water volume".

C. Bases

We are proposing to modify the Bases section to reflect the changes to the action statements discussed above. The discussion regarding action statements in the current Bases reflects treatment of a closed isolation valve as a special condition of inoperability requiring immediate action. We are proposing to modify the Bases discussion on action statements to include the Bases material for the action statements from NUREG 1431.

II. REASONS AND JUSTIFICATION FOR PROPOSED CHANGES

In general, the proposed changes are intended to make the T/Ss more consistent with the new Standard T/Ss published as NUREG 1431. The proposed changes eliminate inconsistencies in the present T/Ss, relax certain requirements where appropriate, and eliminate unnecessary surveillance requirements.

A. Action Statements

An inconsistency in the present T/S has been eliminated with the new proposed action statements. T/S 3/4.5.1 is applicable in Modes 1 and 2, and Mode 3 with pressurizer pressure above 1,000 psig. The present Action Statements a and b, however, require the unit to eventually be placed in Mode 4 with the Limiting Conditions for Operation (LCOs) not met. The proposed action statements correct this inconsistency by having the terminal point of the shutdown be Mode 3 with pressurizer pressure below 1,000 psig.

The new action statements retain the one hour time limit for restoration of an accumulator to operable status for most inoperability conditions. However, the new action statements allow slightly more time until the unit must be shutdown due to an inoperable accumulator.

For example, currently, with an accumulator inoperable due to causes other than a closed isolation valve, one hour is allowed to restore operability or the unit must be placed in Mode 4 within 8 hours (Unit 1). With the new action statements, 12 hours is allowed (beyond the initial one hour) to reach the terminal point, which is Mode 3 with pressurizer pressure below 1,000 psig. The requirement in the present T/Ss to immediately open a closed isolation valve or place the plant in Mode 3 within one hour has been removed. With the proposed action statements, a closed isolation valve would be treated the same as other inoperability conditions for the accumulators. One hour would be permitted to open the valve, or the unit must be placed in Mode 3 within the next 6 hours and pressurizer pressure reduced below 1,000 psig within the following 6 hours. Although less conservative, this change allows a shutdown to proceed in a more orderly fashion and in this sense may represent an enhancement to safety. The new action statements are consistent with NUREG 1431, and as such have been accepted by the NRC. As stated in NUREG 1431, "... the allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems."

The creation of a new action statement for accumulator boron concentration being outside the T/S limit changes the allowable outage time for this condition from one hour to 72 hours. As stated in NUREG 1431,

"... boron in the accumulators contributes to the assumption that the combined ECCS water in the partially recovered core during the early reflooding phase of a large break LOCA is sufficient to keep that portion of the core subcritical. One accumulator below the minimum boron concentration limit, however, will have no effect on available ECCS water and an insignificant effect on core subcriticality during reflood. Boiling of ECCS water in the core during reflood concentrates boron in the saturated liquid that remains in the core. In addition, current analysis techniques demonstrate that the accumulators do not discharge following a large main steam line break for the majority of plants. Even if they do discharge, their impact is minor and not a design limiting event. Thus, the 72 hours is allowed to return the boron concentration to within limits."

The minimum T/S limit on boron concentration is used in the post LOCA boron concentration calculation. The calculation is performed to assure reactor subcriticality in a post LOCA environment. Of particular interest is the large break LOCA, since no credit is taken for control rod assembly insertion. A reduction in the accumulator minimum boron concentration would produce a subsequent reduction in the available containment sump concentration for post LOCA shutdown and an increase in the maximum sump pH. The maximum boron concentration is

used in determining the cold leg to hot leg recirculation injection switchover time and minimum sump pH.

Although the affect of the above items is not specifically addressed in the NUREG 1431 justification of the 72 hour action statement for boron concentration, it is noted that due to the relatively small size of an accumulator compared to other sources of water in the containment sump post-LOCA (approximately 7,000 gallons for an accumulator versus approximately 350,000 gallons for the RWST and approximately 300,000 gallons of melted borated ice), the impact of boron concentration being outside of the T/S on sump pH or on long term subcriticality would be expected to be small.

B. Surveillance Requirements

1. T/S 4.5.1.d

We are proposing to delete T/S 4.5.1.d. This surveillance requirement requires verification at least once per 18 months that each accumulator isolation valve opens automatically upon receipt of a safety injection test signal. The change is consistent with NUREG 1431, and, as such, has been accepted by the NRC. T/S 4.5.1.a.2 requires verification every 12 hours that each accumulator isolation valve is open. Additionally, T/S 4.5.1.c requires verification every 31 days that power to the isolation valve operator is disconnected by removal of the breaker from the circuit. Thus, the T/S contains adequate controls to ensure that the accumulator isolation valves are open in the required modes, and verification of automatic opening capability, although conservative, is redundant. This redundancy was corrected in NUREG 1431 by elimination of the requirement to verify automatic opening of the accumulator isolation valves.

2. T/S 4.5.1.b

As presently written, T/S 4.5.1.b requires verification of accumulator boron concentration every 31 days, and within 6 hours after each solution volume increase of greater than or equal to 1% of the tank volume. The first change we are proposing to this surveillance requirement is to explicitly state that the boron concentration verification following a solution addition is only required for the affected accumulator. Although this is implicit in the present T/S, the change adds clarity to the T/S by removing vagueness from the T/S and makes the wording more consistent with the NUREG 1431 T/Ss. The second change is to exclude volume additions from the RWST from those volume additions requiring verification of accumulator boron concentration, provided the RWST has not been diluted since verifying that the RWST boron concentration is equal to or greater than the accumulator boron concentration limit. T/Ss

3/4.1.2.8 (Borated Water Sources - Operations) and 3/4.5.5 (Refueling Water Storage Tank) require an identical boron concentration for the RWST as for the accumulators during operation. As stated in NUREG 1431,

"It is not necessary to verify boron concentration if the added water inventory is from the refueling water storage tank (RWST), because the water contained in the RWST is within the accumulator boron concentration requirements. This is consistent with the recommendation of NUREG-1366."

3. T/S 4.5.1.a

We are proposing an editorial change to Unit 1 T/S 4.5.1.a.1. Specifically, we are proposing to change the term "water level" to "contained borated water volume" in order to achieve consistency with the Unit 2 T/Ss and with the wording in NUREG 1431.

The proposed changes to this section are consistent with NUREG 1431, and as such have already been accepted by the NRC.

C. Bases

Changes to the Bases were required to reflect the revised action statements. The Bases discussion on the action statements is consistent with NUREG 1431.

III. 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 limiting conditions for operation involving the accumulator are not altered by this proposed change. The surveillance requirements are lessened somewhat by the proposed changes. The requirement to test the automatic actuation of the accumulator isolation valves was redundant to existing surveillance requirements that required the valves to be verified open and with power removed. The requirement to test the accumulator boron concentration following a 1% or greater solution volume increase was modified to exclude volume additions from the RWST, since, per T/Ss, the RWST boron concentration requirements during operation are identical to those for the accumulator. The proposed changes are consistent with NUREG 1431, and, as such, have already been found acceptable by the NRC. Therefore, it is concluded that the proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated.

Criterion 2

No changes to the limiting conditions for operation of the accumulators are proposed as part of this amendment request. The proposed changes do not involve any physical changes to the plant or changes to plant operations. Thus, the proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

Criterion 3

The limiting conditions for operation involving the accumulator are not altered by this proposed change. The surveillance requirements are lessened somewhat by the proposed changes. The requirement to test the automatic actuation of the accumulator isolation valves was redundant to existing surveillance requirements that required the valves to be verified open and with power removed. The requirement to test the accumulator boron concentration following a 1% or greater solution volume increase was modified to exclude volume additions from the RWST, since, per T/Ss, the RWST boron concentration requirements during operation are identical to those for the accumulator. All the proposed changes are consistent with NUREG 1431, and, as such, have already been found acceptable by the NRC. Therefore, it is concluded that the proposed changes do not involve a reduction in a margin of safety.

Lastly, we note that the NRC has provided guidance concerning the determination of significant hazards consideration by providing certain examples (48 FR 14870) of amendments considered not likely to involve significant hazards consideration. The sixth of these examples refers to changes that may result in some increase to the probability or consequences of a previously evaluated accident, but the results of which are within acceptable limits. As discussed above, the proposed changes are consistent with changes found acceptable by the NRC in NUREG 1431. Therefore, we

conclude that the example cited is applicable and that the change should not involve significant hazards consideration.