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SUBJECT: Application for amends to licenses DPR-58 & DPR-74. Amends
would modify surveillance requirements, eliminating
requirement to test certain safeguards pumps.

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March 31, 1995

AEP:NRG:1211

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
PROPOSED AMENDMENT TO TECHNICAL SPECIFICATION SURVEILLANCE
REQUIREMENTS: REVISE SAFETY RELATED PUMP TESTING TO ELIMINATE
RECIRCULATION ALIGNMENTS AND BE CONSISTENT WITH
THE INSERVICE TESTING PROGRAM (IST) 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 units 1 and 2. Specifically, we are proposing to modify the surveillance requirements to eliminate the requirement to test certain safeguards pumps via their recirculation flowpath. The following pumps are affected; the centrifugal charging pumps, residual heat removal pumps, motor driven auxiliary feedwater pumps, and the turbine driven auxiliary feedwater pumps. Two pumps, the containment spray pump and safety injection pump, will continue to be tested on their recirculation lines based on existing design. This proposed change would also eliminate references to specific discharge pressures and flows associated with these pumps. The specific test parameters being removed are controlled by the approved Cook Nuclear Plant IST program. The following unit 1 and unit 2 T/S surveillances are affected: 4.1.2.3.1, 4.1.2.4, 4.5.2f, 4.6.2.1b, 4.7.1.2a, and 4.7.1.2b.

The existing Donald C. Cook Nuclear Plant T/S surveillance requirements associated with the above pumps require testing of the pumps utilizing their recirculation lines. This method of testing provides limited information on the pump/systems' ability to perform their safety related functions. Therefore, a change to the T/S surveillance is being proposed to allow testing of these pumps using higher capacity flowpaths (where applicable).

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Utilizing this test method would provide for more accurate data to better determine the actual pump/system conditions.

In addition to the improvement in the quality of acquired test data, the proposed amendment would also align the affected Cook Nuclear Plant T/Ss with the Merits Program T/Ss issued as NUREG-1431.

An administrative change to T/S surveillances 4.5.2.d.2, 4.5.2.e, 4.6.2.c, 4.7.1.2e, and 4.7.1.2f is also included in this amendment. These specifications each contained a footnote associated with the unit 2 cycle 9-10 refueling outage which is no longer applicable, thus the footnotes are being removed.

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.

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

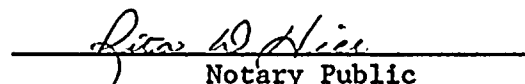
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Attachment

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

SWORN TO AND SUBSCRIBED BEFORE ME

THIS 31st DAY OF March 1995


Notary Public

My Commission Expires: 6-28-99



ATTACHMENT 1 TO AEP:NRC:1211

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

I. DESCRIPTION OF CHANGES

The proposed amendment to technical specifications (T/Ss) surveillances; 4.1.2.3.1, 4.1.2.4, 4.5.2.d.2, 4.5.2.e, 4.5.2.f, 4.6.2.1b, 4.6.2.c, 4.7.1.2a, 4.7.1.2b, 4.7.1.2e, and 4.7.1.2f make the following specific changes to Cook Nuclear Plant Units 1 and 2 T/Ss:

T/S 4.1.2.3.1

Changes surveillance 4.1.2.3.1 (page 3/4 1-11) from:

"The above required charging pump shall be demonstrated OPERABLE by verifying, that on recirculation flow, the pump develops a discharge pressure of greater than or equal to 2390 psig when tested pursuant to Specification 4.0.5."

To:

"The above required charging pump shall be demonstrated OPERABLE by verifying that the pump's developed head at the test flow point is greater than or equal to the required developed head when tested pursuant to Specification 4.0.5."

T/S 4.1.2.4

Changes surveillance 4.1.2.4 (page 3/4 1-12) from:

"At least two charging pumps shall be demonstrated OPERABLE by verifying, that on recirculation flow, the pump develops a discharge pressure of greater than or equal to 2405 psig when tested pursuant to Specification 4.0.5."

To:

"At least two charging pumps shall be demonstrated OPERABLE by verifying that the pump's developed head at the test flow point is greater than or equal to the required developed head when tested pursuant to Specification 4.0.5."

T/S 4.5.2f

Changes surveillance 4.5.2f (page 3/4 5-5) from:

"By verifying that each of the following pumps develops the indicated discharge pressure on recirculation flow when tested pursuant to Specification 4.0.5.

1. Centrifugal charging pump greater than or equal to 2405 psig

2. Safety injection pump greater than or equal to 1409 psig
3. Residual heat removal pump greater than or equal to 190 psig"

To:

"By verifying that each of the following pump's developed head at the test flow point is greater than or equal to the required developed head when tested pursuant to Specification 4.0.5.

1. Centrifugal charging pumps
2. Safety injection pumps
3. Residual heat removal pumps"

T/S 4.6.2.1b

Changes surveillance 4.6.2.1b (page 3/4 6-10) from:

"By verifying, that on recirculation flow, each pump develops a discharge pressure of greater than or equal to 255 psig at a flow of greater than or equal to 700 gpm, when tested pursuant to Specification 4.0.5."

To:

"By verifying that each containment spray pump's developed head at the test flow point is greater than or equal to the required developed head."

T/S 4.7.1.2a

Changes surveillance 4.7.1.2a (page 3/4 7-6) from:

"Verifying that each motor driven pump develops an equivalent discharge pressure of greater than or equal to 1375 psig (1240 psig for Unit 2) at 60°F on recirculation flow.

To:

"Verifying that each motor driven auxiliary feedwater pump's developed head at the test flow point is greater than or equal to the required developed head."

T/S 4.7.1.2b

Changes surveillance 4.7.1.2b (page 3/4 7-6) from:

"Verifying that the turbine driven pump develops an equivalent discharge pressure of greater than or equal to 1285 psig (1180 psig for Unit 2) at 60°F and at a flow of greater than or equal to 700 gpm when the secondary steam supply pressure is greater than 310 psig. The provisions of Specification 4.0.4 are not applicable for entry into MODE 3.

To:

"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 provisions of Specification 4.0.4 are not applicable for entry into MODE 3."

4.5.2.d.2, 4.5.2.e, 4.6.2.c, 4.7.1.2e and 4.7.1.2f

Delete the "daggers" and associated footnote reference to Technical Specification 4.0.8. This reference was specifically associated with a surveillance extension approved during Unit 2 cycle 9-10. It is no longer applicable.

II. JUSTIFICATION FOR CHANGES

The proposed technical specification change eliminates the surveillance requirement to test the Unit 1 and Unit 2 centrifugal charging, safety injection, residual heat removal, containment spray, motor driven auxiliary feedwater and steam driven auxiliary feedwater pumps on their recirculation lines. It should be noted that the containment spray pumps and safety injection pumps will continue to be tested on their recirculation flowpaths as a result of existing system design. This proposed change would also remove the references to specific discharge pressures and flows associated with these pumps.

This change is consistent with the assumptions and guidance provided in NUREG - 1431, "Standard Technical Specifications, Westinghouse Plants," which states:

"The purpose for conducting periodic testing of the pumps listed above is to detect gross degradation caused by impeller structural damage or other hydraulic component problems. This testing is required by Section XI of the American Society of Mechanical Engineers (ASME) Code. The testing described above may be accomplished by measuring the pump developed head at only one point of the pump performance curve. This verifies both that the measured

performance is within an acceptable tolerance of the original pump baseline performance and that the performance at the test flow is greater than or equal to the performance assumed in the plant safety analysis. Surveillance requirements are specified in the Inservice Testing (IST) Program which encompasses Section XI of the ASME Code."

The purpose of the proposed change is to eliminate the recirculation flowpath requirement for testing the above pumps and, where applicable, allow testing of the pumps utilizing a high capacity flowpath. Surveillance tests on pump recirculation lines provide limited information on the pump/system's ability to perform its safety function. The test performed on recirculation offers one data point at minimal flow and highest possible head, equivalent in most cases to the pump's shutoff head. Such low flow operation could produce unstable hydraulic forces which may result in inaccurate performance data and may also be detrimental to the pump. Pump performance test data should be obtained at flowrates as close as possible to the pump's best efficiency point. At such flowrates, hydraulic forces are relatively stable and more accurate data is assured. Furthermore, while some pump degradation can be observed at both lower and higher flowrates, system degradation (e.g., pipe blockage) can be observed only at the higher flowrates. In general, pump/system degradation is far more apparent at higher flowrates. Testing on higher capacity flowpaths instead of the pump's recirculation line is, therefore, preferable in order to obtain more accurate data, better determine pump/system conditions, and minimize low flow pump operation.

In addition to its consistency with NUREG-1431, the above discussion is consistent with issues addressed in NUREG/CP-0123, "Proceedings of the Second NRC/ASME Symposium on Pump and Valve Testing," in particular with papers entitled, "Pump Testing in the Nuclear Industry: The Comprehensive Test and Other Considerations (page 133)," "Test Quality (page 159)," and "Operating Pumps on Minimum Flow (page 557)."

The T/S requirement limiting the surveillance test to only the recirculation line also places undue demands on the pump, system, and operators for certain pumps, like the centrifugal charging pumps. Technical specification testing of these pumps on their recirculation lines require the pumps to be secured from operation, the system realigned, and the pumps restarted to support a recirculation alignment. By allowing for a higher capacity flowpath, system realignment becomes unnecessary and normal operational flowpaths need not be disturbed. Operator flexibility to test the pumps on a higher capacity flowpath, where possible, will aid in minimizing required system manipulations as well as maximizing component availability.

The proposed T/S also eliminates specific flow and pressure setpoints that correlate with testing the centrifugal charging, safety injection, residual heat removal, containment spray, and motor driven and turbine driven auxiliary feedwater pumps on their recirculation lines.

The specific flows and pressures that demonstrate the capability of the pump to perform its intended safety function are identified in the Cook Nuclear Plant IST program. The minimum performance values, modeled in the accident analysis or identified as the minimum system requirement, are used in the IST program as the lowest acceptable values for continued operation.

A final benefit of changing the testing requirements of the centrifugal charging, safety injection, residual heat removal, containment spray, and motor driven and turbine driven auxiliary feedwater pumps is that it will assure uniform test requirements for T/S pumps with similar testing requirements. Currently, essential service water and component cooling water pumps are required to be tested in accordance with the IST program. Specific flow and pressure requirements are defined by the IST program and not the T/S surveillance.

In summary, the proposed change will assure the acquisition of accurate data, better determine pump/system conditions, and minimize low flow pump operation. Additionally, the change will provide surveillance guidance consistent with NUREG-1431, NUREG/CP-0123, and existing service water component T/Ss currently resident in Cook Nuclear Plant T/Ss.

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 purpose for conducting periodic testing of the pumps identified in this proposed amendment is to detect gross degradation as required by Section XI of the ASME Code. The Cook Nuclear Plant IST program, which encompasses Section XI of the ASME Code, is the basis for the existing as well as the proposed T/Ss. Testing the pumps utilizing a high capacity

flowpath instead of a recirculation flowpath (where applicable) will have no impact on the ability of the pump to perform its intended function. In fact, it is expected that the high capacity flowpath will provide a more accurate assessment of the pump/systems' conditions and ability to meet their safety function.

The removal of specific test parameters, in favor of referencing the Cook Nuclear Plant IST Program, will not impact the ability of the pumps to perform their safety related function. IST Program parameters ensure that the pumps under test provide the support assumed in the plant's safety analyses.

Therefore, based on these considerations, it is concluded that the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

Criterion 2

The proposed change will preclude the need to realign selected pumps to their recirculation flowpaths for testing purposes (where applicable). Eliminating the need for alignment to the recirculation flowpath aids in maximizing the pump's availability to perform its safety function.

As stated previously, the removal of the specific test parameters, in favor of referencing the Cook Nuclear Plant IST Program will not impact the ability of the pumps to perform their intended safety function.

Thus, 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

As stated previously, testing of the selected pumps utilizing a high capacity flowpath will provide greater assurance of pump capability and maximize pump availability. Additionally, removing specific test parameters in favor of referencing the Cook Nuclear Plant IST Program will have no impact on the ability of the pumps to perform their intended safety function. Therefore, we believe that the margin for safety as defined in 10 CFR 100 has not been reduced. Based on these considerations, it is concluded that the changes do not involve a significant reduction in a margin of safety.

ATTACHMENT 2 TO AEP:NRG:1211

EXISTING TECHNICAL SPECIFICATION
PAGES MARKED TO REFLECT PROPOSED CHANGES

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