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SUBJECT: Application for amend to license DPR-43,revising MSIV closure assumption in Basis for TS 4.7.

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May 2, 1997

10 CFR 50.90

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

Ladies/Gentlemen:

Docket 50-305
Operating License DPR-43
Kewaunee Nuclear Power Plant
Proposed Amendment 148 to the Kewaunee Nuclear Power Plant License

This proposed amendment (PA) to the Kewaunee Nuclear Power Plant (KNPP) License is being submitted to revise the main steam isolation valve closure assumption in the Basis for TS 4.7.

Attachment 1 to this letter contains a description, a safety evaluation, a significant hazards determination and environmental considerations for the proposed changes. Attachment 2 contains the following affected page: TS B4.7-1.

In accordance with the requirements of 10 CFR 50.30(b), this submittal has been signed and notarized. A complete copy of this submittal has been transmitted to the State of Wisconsin as required by 10 CFR 50.91(b)(1).

Sincerely,

Mark L. Marchi for

Clark R. Steinhardt
Senior Vice President - Nuclear Power

Subscribed and Sworn to
Before Me This 2nd Day
of May 1997

Jeanne M. Ferris
Notary Public, State of Wisconsin

My Commission Expires:
June 13, 1999

A001

LAS

Attach.

cc - US NRC - Region III
US NRC Senior Resident Inspector
Mr. Lanny Smith, PSCW

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ATTACHMENT 1

Letter from C.R. Steinhardt (WPSC)

To

Document Control Desk (NRC)

Dated

May 2, 1997

Proposed Amendment 148

Description of Proposed Changes

Safety Evaluation

Significant Hazards Determination

Environmental Considerations

Introduction

Kewaunee Nuclear Power Plant (KNPP) Technical Specification (TS) 4.7 states that the main steam isolation valves (MSIV) shall be tested once per operating cycle and a closure time of five seconds or less shall be verified. The Basis for the TS contains a statement that a ten second closure time is assumed for the MSIV in the Main Steam Line Break (MSLB) accident analysis.

This license amendment submittal requests a revision to the MSIV closure time stated in the Basis for TS 4.7. This amendment also adds one sentence to the TS Basis to improve the description of the MSIVs' function during a main steam line break accident.

Description of Proposed Changes to Basis for Technical Specification (TS) 4.7, "Main Steam Isolation Valves"

The Basis for TS 4.7 currently reads:

> The main steam isolation valves (MSIVs) serve to limit the cooldown rate of the Reactor Coolant System and the reactivity insertion that could result from a main steam break incident. Their ability to close upon signal should be verified at each major REFUELING outage. The USAR assumes a MSIV closure time of 10(1) seconds for a steamline break accident scenario. However, a closure time of 5 seconds is selected for the TS requirements, since it is more consistent with the expected response time for instrumentation as detailed in the steam line break(1) incident analysis.

This license amendment requests the Basis for TS 4.7 be changed to read:

> The main steam isolation valves (MSIVs) serve to limit the cooldown rate of the Reactor Coolant System and the reactivity insertion that could result from a main steam line break incident. The MSIVs also serve to limit the amount of mass and energy released into containment from the unfaulted steam generator during a main steam line break incident. The ability of the MSIVs to close upon signal should be verified at each REFUELING outage. The USAR assumes a MSIV closure time of $\geq$ 5(1) seconds for a steam line break accident scenario.

Footnote (1) remains unchanged, and reads: "(1) USAR Section 14.2.5," which is the discussion of the MSLB accident.

Safety Evaluation for Proposed Change to Basis for Technical Specification (TS) 4.7, "Main Steam Isolation Valves"

The ten second closure assumption for the MSIVs in the MSLB accident analysis was conservatively chosen to ensure the analysis results bounded both the physical plant limitations, as well as calculational capabilities of the computer models used in the early 1970's. The advances in computational technology since that time no longer require such gross conservatisms to ensure that the analysis results are sufficiently bounding to ensure plant operation will not po se an undue risk to the public health and safety. (A description of the current analysis methods in use can be found in KNPP's USAR in Sections 14.1.13 and 14.2.5.) Using a less conservative value for MSIV closure in the accident analysis will allow some desired flexibility in other parameters without compromising the acceptance criteria for the results. In this particular instance, KNPP desires more operational flexibility in the range of control of steam generator water level during startup. Allowing more water inventory increases the severity of the accident analysis results (all other parameters equal). A slightly less conservative MSIV closure assumption will offset the consequences of increased inventory, resulting in an accident analysis result with no increase in consequences. KNPP's request to use a MSIV closure value greater than or equal to five seconds is consistent with the MSIV closure assumptions docketed for other two loop Westinghouse plants.

This license amendment does not include a change to any TS. KNPP's MSIVs will continue to be tested according to the requirements of TS 4.7.

A statement is added to the Basis for TS 4.7 to more accurately describe the function of the MSIVs during a MSLB accident. The testing interval for the MSIVs is described as each refueling outage, eliminating the word "major." These changes are simply administrative in nature.

The revision to the Basis for TS 4.7 will not affect the health and safety of the public for the following reasons:

1) the specification for testing and verifying the closure time of the MSIVs (TS 4.7) will not change, and

2) the closure assumption for the MSIVs used in the MSLB accident analysis will be greater than or equal to the value required by TS 4.7.

Significant Hazards Determination for Proposed Change to Basis for Technical Specification (TS) 4.7, "Main Steam Isolation Valves"

The proposed changes were reviewed in accordance with the provisions of 10 CFR 50.92 to determine that no significant hazards exist. The proposed changes will not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated.

   The closure time for the MSIVs is not an accident initiator. The surveillance requirement for the MSIVs will remain unchanged. Therefore, this change will not increase the probability of occurrence of an accident previously evaluated.

   The MSLB accident analysis has many conservative input assumptions. The ten second MSIV closure value is overly conservative. This value can be reduced to a value greater than or equal to the value required by TS 4.7 and will still be a conservative value with regard to actual closure times expected. Changing the analysis input assumption will result in less severe analytical consequences, but does not change the underlying accident progression. Therefore, this change will not increase the consequences of an accident previously analyzed.

2. Create the possibility of a new or different kind of accident from any accident previously evaluated.

   This change revises a specified analysis assumption for MSIV closure in the Basis for TS 4.7. Changing the closure time allowed for analysis purposes will not create a new or different kind of accident from any accident previously evaluated.

3. Involve a significant reduction in the margin of safety.

   The MSLB accident analysis employs several conservative input assumptions. The revised assumption for the MSIVs is conservative with respect to actual valve performance. The surveillance test results for the MSIVs over the past ten years, a total of 53 tests, revealed that the MSIVs close within 3-4 seconds, with them closing between 4-5 seconds on only four occasions. The surveillance tests are performed during intermediate or hot shutdown conditions to test in an environment most similar to accident conditions. There is negligible flow through the main steam lines during this test. Since the valves are tested at a condition with negligible flow, during an accident the valves would close more quickly as the valve disc enters the flow stream. In the past ten years, one MSIV failed to meet its timing test on one occasion, and the other MSIV failed to meet its timing test on two occasions. The cause of two of the three failures was attributed to sticking limit switches,

which were valve indication problems, not valve performance problems. The cause of the remaining failure was not explicitly identified. The MSIVs have been very reliable in meeting their timing tests. Using a closure assumption less than ten seconds will continue to provide conservatism in the MSLB accident analysis, as long as the value chosen meets the value required by TS 4.7.

Any future MSLB analyses implementing the less conservative MSIV closure assumption must continue to meet the acceptance criteria required by Kewaunee's USAR, and thereby, demonstrate that adequate margin of safety is maintained.

Environmental Considerations

This proposed amendment involves a change to the Basis for a technical specification. It does not modify any facility components located within the restricted area, as defined in 10 CFR 20, or change any surveillance requirements. WPSC has determined that the proposed amendment involves no significant hazards considerations and no significant change in the types of any effluents that may be released offsite and that there is no significant increase in the individual or cumulative occupational radiation exposure. Accordingly, this proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with this proposed amendment.