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SUBJECT: Application for amend to license DPR-43 re operbility & surveillance requirements for Steam Exclusion Sys.

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April 21, 1994

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 124 to the Kewaunee
Nuclear Power Plant Technical Specifications

This proposed amendment (PA) to the Kewaunee Nuclear Power Plant (KNPP) Technical Specifications (TS) is being submitted to add new Sections TS 3.15 and TS 4.15, describing the operability and surveillance requirements for the Steam Exclusion System. These proposed changes add specifications that do not currently exist for the Steam Exclusion System at Kewaunee.

Attachment I to this letter contains a description, a safety evaluation, a significant hazards determination and environmental considerations for the proposed changes. Attachment 2 contains the affected TS pages.

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 250065

A001

Sincerely,

C. R. Steinhardt
Senior Vice President - Nuclear Power

DJK/cjt

Attach.

cc - US NRC - Region III
US NRC Senior Resident Inspector
Mr. Robert Cullen, PSCW

Subscribed and Sworn to
Before Me This 21st Day
of April 1994

Jeanne M. Ferris
Notary Public, State of Wisconsin

My Commission Expires:

June 18, 1995

lic\nrc\pa124.wp

ATTACHMENT 1

To

Letter from C. R. Steinhardt (WPSC)

to

Document Control Desk (NRC)

Dated

April 21, 1994

Proposed Amendment 124

Description of Proposed Changes

Safety Evaluation

Significant Hazards Determination

Environmental Considerations

Description of Proposed Technical Specifications (TS) 3.15 and (TS) 4.15, "Steam Exclusion System"

1) A new specification, TS 3.15, is being added to specify the system operability requirements for the Steam Exclusion System. The Steam Exclusion System is discussed in detail in Chapter 10A of the Kewaunee Updated Safety Analysis Report. Specific requirements for the Steam Exclusion System do not currently exist in the Kewaunee Technical Specifications.

2) A new specification, TS 4.15, is being added to incorporate surveillance requirements for Steam Exclusion System components. These requirements do not currently exist in the Kewaunee Technical Specifications.

3) The Table of Contents is being revised and Basis sections are being added to support the described changes. These are being submitted for your information.

Safety Evaluation for Proposed Technical Specification (TS) 3.15 "Steam Exclusion System" (New)

The intent of this new specification is to specify the operability requirements for the Steam Exclusion System and to demonstrate the acceptability of removing the Steam Exclusion System from service for short periods of time. Specific requirements for the Steam Exclusion System do not currently exist in the Kewaunee Technical Specifications, however, credit is taken for the mitigation of a high energy line break outside of containment by the Steam Exclusion System in the Kewaunee Updated Safety Analysis Report.

Steam exclusion zones were defined to designate locations which are protected against steam intrusion in the event of a high energy line break. The steam exclusion zones provide suitable environmental conditions for needed equipment operation and a habitable environment for personnel.

The new specification will require the Steam Exclusion System to be operable whenever the reactor coolant temperature is > 350°F. To satisfy this requirement both trains of steam exclusion actuation logic and the associated steam exclusion dampers shall be operable. Also, all other non-damper steam exclusion boundaries such as doors, walls, hatches, etc., shall be in place and operable.

Four limiting conditions for operation are defined in this Technical Specification:

1. Two redundant steam exclusion dampers, two trains of steam exclusion actuation logic or one non-redundant steam exclusion damper may be inoperable for 12 hours. If

operability is not restored, within 1 additional hour one steam exclusion damper in each affected duct must be closed, or an alternate steam exclusion boundary must be provided in each affected duct, or an analysis must be performed to demonstrate the acceptability of the opening.

2. One train of steam exclusion actuation logic may be inoperable for up to 72 hours. If after 72 hours the actuation logic operability is not restored, within 1 additional hour one steam exclusion damper in each affected duct shall be closed.

3. One of two redundant steam exclusion dampers may be inoperable for 72 hours. If after 72 hours operability is not restored, within 1 additional hour one of the two redundant steam exclusion dampers shall be closed.

4. Non-redundant steam exclusion boundaries may be inoperable for 12 hours. If operability has not been restored, within 1 additional hour an alternate steam exclusion boundary must be provided or an analysis must be performed to demonstrate the acceptability of the opening. Stationing a person who is able to promptly restore an opened or defeated steam exclusion boundary to full operability constitutes an acceptable alternate steam exclusion boundary. Non-redundant steam exclusion boundaries are defined as doors, hatches, walls, electrical/mechanical penetrations, etc., that do not have at least one additional barrier to prevent a pathway for steam into a defined steam exclusion area.

If any of the four listed limiting conditions for operation cannot be met, then within 1 hour action shall be initiated to achieve hot standby within the next 6 hours, achieve hot shutdown within the following 6 hours, and achieve and maintain the reactor coolant system < 350°F within an additional 12 hours.

Calculations conclude that the core damage frequency for a high energy line break outside of containment with a non-redundant steam exclusion boundary open is 2.57E-8 per 12 hour period. Further conservative assumptions of one non-redundant steam exclusion boundary being open 12 hours per day, 5 days per week, 52 weeks per year results in a core damage frequency of 6.68E-6 per year. This analysis was conservatively calculated taking minimal credit for mitigating the accident, and is considered to be an acceptable level of risk on an annual basis. A safety factor of five was applied to NUREG/CR-4550 data to determine the initiating event frequency of a high energy line break.

Furthermore, calculations conclude that the core damage frequency for a high energy line break outside of containment with one of two redundant steam exclusion boundaries open is 4.62E-10 per 72 hour period. Further conservative assumptions of one redundant steam exclusion damper being open 24 hours per day, 5 days per week, 52 weeks per year results in a core damage frequency of 4.00E-8 per year. This analysis was conservatively calculated taking minimal credit for mitigating the accident, and is considered to be an acceptable level of risk on an annual basis. Again, a safety factor of five was applied to NUREG/CR-4550 data to determine the initiating event frequency of a high energy line break.

Lastly, proposed TS 3.15 allows changes in operational modes or conditions with inoperable steam exclusion actuation logic train(s) or steam exclusion boundaries, provided the action statements of the Limiting Conditions for Operation are satisfied. The addition of TS 3.15 is an enhancement to the Kewaunee Technical Specifications because it specifies the operability requirements and required actions for the Steam Exclusion System. Furthermore, it demonstrates the acceptability of removing the Steam Exclusion System from service for short periods of time. These requirements do not currently exist in the Technical Specifications, and addition of these requirements will not adversely affect the health and safety of the public.

Significant Hazards Determination for Proposed Technical Specification (TS) 3.15 "Steam Exclusion System" (New)

The proposed change was reviewed in accordance with the provisions of 10 CFR 50.92 to show no significant hazards exist. The proposed change will not:

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

The intent of this new specification is to specify the operability requirements for the Steam Exclusion System and to demonstrate the acceptability of removing the Steam Exclusion System from service for short periods of time.

The proposed change will not significantly increase the probability of an accident previously evaluated. The accident under consideration is a high energy line break outside of containment. Allowing a steam exclusion boundary to be inoperable for a short period of time has no effect on the probability of occurrence of a high energy line break outside of containment.

The proposed change will not significantly increase the consequences of an accident previously evaluated. Again, the accident under consideration is a high energy line break outside of containment. Calculations conclude that the core damage frequency for a high energy line break outside of containment with a non-redundant steam exclusion boundary open is 2.57E-8 per 12 hour period. Further conservative assumptions of one non-redundant steam exclusion boundary being open 12 hours per day, 5 days per week, 52 weeks per year results in a core damage frequency of 6.68E-6 per year. This analysis was conservatively calculated taking minimal credit for mitigating the accident, and is considered to be an acceptable level of risk on an annual basis. A safety factor of five was applied to NUREG/CR-4550 data to determine the initiating event frequency of a high energy line break. This calculation supports the conclusion that this addition to the Technical Specifications will not result in a significant increase in the probability or consequences of an high energy line break outside of containment.

Furthermore, calculations conclude that the core damage frequency for a high energy line break outside of containment with one of two redundant steam exclusion boundaries open is 4.62E-10 per 72 hour period. Further conservative assumptions of one redundant steam exclusion damper being open 24 hours per day, 5 days per week, 52 weeks per year results in a core damage

frequency of 4.00E-8 per year. This analysis was conservatively calculated taking minimal credit for mitigating the accident, and is also considered to be an acceptable level of risk on an annual basis. Again, a safety factor of five was applied to NUREG/CR-4550 data to determine the initiating event frequency of a high energy line break. This calculation also supports the conclusion that this addition to the Technical Specifications will not result in a significant increase in the probability or consequences of an high energy line break outside of containment.

Specific requirements for the Steam Exclusion System do not currently exist in the Technical Specifications. Addition of TS 3.15 is an enhancement to the Kewaunee Technical Specifications, and providing this information for the plant staff and operators will not significantly increase the probability or consequences of an accident previously evaluated, nor will it adversely affect the health and safety of the public.

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

The proposed amendment does not alter the plant configuration, operating setpoints or overall plant performance. Therefore, it cannot create the possibility of a new or different kind of accident from any accident previously evaluated.

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

Addition of the specification is an enhancement to the Technical Specifications and does not alter input to the safety analysis. Furthermore, the supporting analysis demonstrates an acceptable level of risk for removing components from service for limited periods of time. Therefore, it will not involve a significant reduction in the margin of safety.

Additionally, the proposed change is similar to example C.2.e(ii) in 51 FR 7751. Example C.2.e(ii) states that changes that constitute an additional limitation, restriction or control not presently included in the TS's are not likely to involve a significant hazard.

<u>Safety Evaluation for Proposed Technical Specification (TS) 4.15 "Steam Exclusion System" (New)</u>

The intent of this new specification is to specify the testing and surveillance requirements for the Steam Exclusion System. The Kewaunee Technical Specifications do not currently contain specific requirements for the Steam Exclusion System.

TS 4.15 will require each resistance temperature detector temperature loop in the Steam Exclusion System to be calibrated once each operating cycle not to exceed 18 months. Also, the Steam Exclusion System actuation logic shall be tested once each operating cycle not to exceed 18 months to verify that various combinations of simulated high temperature signals

cause the Steam Exclusion System actuation logic to generate an actuation signal. Furthermore, a system test of the Steam Exclusion System shall be performed at least once each operating cycle not to exceed 18 months. This test will verify the ability of the system's dampers to properly close with a simulated system actuation signal.

The addition of TS 4.15 is an enhancement to the Kewaunee Technical Specifications because it specifies the surveillance requirements for the Steam Exclusion System. These requirements do not currently exist in the Kewaunee Technical Specifications, and addition of these requirements will not adversely affect the health and safety of the public.

Significant Hazards Determination for Proposed Technical Specification (TS) 4.15 "Steam Exclusion System" (New)

The proposed change was reviewed in accordance with the provisions of 10 CFR 50.92 to show no significant hazards exist. The proposed change will not:

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

The proposed change will not significantly increase the probability or consequences of an accident previously evaluated. The accident under consideration is a high energy line break outside of containment. The performance of periodic surveillance requirements, testing which verifies that components in the Steam Exclusion System are operating properly, cannot significantly increase the probability or consequences of a high energy line break, nor will it adversely affect the health and safety of the public.

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

The proposed amendment does not alter the plant configuration, operating setpoints or overall plant performance. Therefore, it cannot create the possibility of a new or different kind of accident from any accident previously evaluated.

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

Addition of the specification is an enhancement to the Kewaunee Technical Specifications and does not alter input to the safety analysis. Therefore, it will not involve a significant reduction in the margin of safety

Additionally, the proposed change is similar to example C.2.e(ii) in 51 FR 7751. Example C.2.e(ii) states that changes that constitute an additional limitation, restriction or control not presently included in the TS's are not likely to involve a significant hazard.

Environmental Considerations

This proposed amendment involves a change to a requirement with respect to the installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or a change to a surveillance requirement. 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.