Wisconsin Electric POWER COMPANY
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November 22, 1982

Mr. H. R. Denton, Director
Office of Nuclear Reactor Regulation
U. S. NUCLEAR REGULATORY COMMISSION
Washington, D. C. 20555

Attention: Mr. R. A. Clark, Chief
Operating Reactors, Branch 3

Gentlemen:

DOCKET NOS. 50-266 AND 50-301
SUBMITTAL OF OUTSTANDING RESPONSE ITEMS
NUREG-0612 - CONTROL OF HEAVY LOADS
POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

Your letter dated December 22, 1980 and February 3, 1981 requested that Wisconsin Electric review the handling of heavy loads at the Point Beach Nuclear Plant and provide information as requested in Enclosure 2 to the December 22, 1980 letter. Our previous submittals have provided a majority of the information requested in your letters. Outstanding information is being submitted in accordance with the schedule proposed in our letter of February 25, 1982.

Enclosed for your review is Wisconsin Electric response to NRC Question 2.3-4-b, including the results of the reactor pressure vessel head drop analysis. This information is provided in the form of revised pages 10, 11, and 11a for inclusion in the "nine-month" response submitted by our letter dated January 11, 1982.

Please contact us if you have any questions on this matter.

Very truly yours,

C. W. Fay

Assistant Vice President

8211290356 821122
PDR ADOCK 05000266
P PDR

C. W. Fay

Enclosure

Copy to NRC Resident Inspector

Subscribed and sworn to before me
this 23rd day of November 1982.

Patricia M. Schlichting
Notary Public, State of Wisconsin
My Commission expires May 4, 1986.

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provide a discussion of your evaluation of crane operation in the containment and your determination of compliance. This response should include the following information for each crane:

3.4.1 NRC Question 2.3-4-a

a. Where reliance is placed on the installation and use of electrical interlocks or mechanical stops, indicate the circumstances under which these protective devices can be removed or bypassed and the administrative procedures invoked to ensure proper authorization of such action. Discuss any related or proposed technical specification concerning the bypassing of such interlocks.

Response

No reliance is placed on the installation and use of electrical interlocks or mechanical stops for the cranes listed in Table 3-1 above.

3.4.2 NRC Question 2.3-4-b

b. Where reliance is placed on other, site-specific considerations (e.g., refueling sequencing), provide present or proposed technical specifications and discuss administrative or physical controls provided to ensure the continued validity of such considerations.

Response

Reliance is placed on site-specific considerations for the Containment Polar Crane. Once the reactor vessel head is removed, the movement of any heavy loads over the open reactor vessel is prohibited procedurally and administratively unless specifically approved in advance by the Manager's Supervisory Staff. The exceptions to this are the removal and replacement of the upper internals, core support barrel, and P.A.R. device. The core support barrel may only be lifted after all fuel has been removed from the vessel and therefore poses no threat to the continued removal of core decay heat or fuel damage.

A reactor vessel head drop analysis has been performed. The results of this analysis show that upon impact of the head drop the initial reactor vessel nozzle stresses are well within allowables. However, the loads imposed upon the reactor vessel supports caused by the impact of the head are greater than the critical buckling load of the support columns. These supports cannot be relied upon to absorb enough of the energy of impact to prevent severe damage to the safety injection lines attached to the reactor vessel or to the primary coolant loop piping.

The results of the head drop analysis are presently being reviewed. This review is comprised of the following actions:

1) A review of the consequences of the head drop event for comparison with guidelines of NUREG-0612, Section 5.1.

2) An identification of alternative measures which may be used to remove decay heat from the core should normal methods of residual heat removal become inoperative.

3) A determination of the probability of a head drop event based upon lift frequency and current reactor operating history.

4) A determination of any procedural modifications which could be made to limit the probability of occurrences of a head drop event.

5) A detailed review of the containment polar crane to determine areas of potential single failure that could be upgraded to provide increased reliability.

It is anticipated that the review process will be concluded within our originally proposed time frame for NUREG-0612 compliance, that is, January 1984. However, it is unlikely that equipment modifications could be accomplished within this time frame. Should they be needed, such modifications would be completed as expeditiously as possible.

The use of the P.A.R. device while fuel is in the vessel has been reviewed and found acceptable. During refueling, Technical Specification 15.3.8 (Appendix C of this report) requires that a minimum boron concentration of 1800 ppm be maintained. The boron concentration is maintained at 2000 ppm and thus gives a K_{eff} of less than .90. NUREG-0612, Appendix A, Section 4.2.2(2) states that an acceptable method of demonstrating subcriticality is to demonstrate that K_{eff} for the uncrushed core is no greater than .90, then using the estimated 0.05 maximum reactivity insertion due to crushing show that K_{eff} is still less than .95. Based on a refueling K_{eff} of less than .90 and a 0.05 reactivity insertion the maximum K_{eff} is less than .95.

The present design provides radiation monitors with the capability of quickly detecting and isolating the containment including the purge and vent lines with the exception of the personnel access hatch. This system is presently being replaced with safety grade components that perform the same function. Technical Specification 15.3.8 provides for closure of the personnel access hatch after evacuation and also requires a third door having an automatic door closer which minimizes the exchange of inside air with outside air.

The above basis can also be applied to the movement of the vessel head and upper internals.

The plant procedures will be modified to ensure that requirements of Technical Specification 15.3.8 for refueling operations are also met before movement of the vessel head, upper internals, or P.A.R. device.

The reactor pressure vessel head circular monorail is an integral part of the reactor vessel head lifting structure. This monorail is used to position and move the reactor vessel studs, stud tensioners, and the cavity seal ring and can only be used when the vessel head is in place and thus does not pose a threat to fuel assemblies in the core. The consequences of a drop of any of the above loads on the vessel head are expected to be encompassed by the head drop analysis. This will be confirmed upon completion of the analysis.

3.4.3 NRC Question 2.3-4-c

c. Analyses performed to demonstrate compliance with Criteria I through III should conform with the guidelines of NUREG-0612, Appendix A. Justify any exception taken to these guidelines, and provide the specific information requested in Attachment 2, 3, or 4, as appropriate, for each analysis performed.

Response

As stated in the response to 2.3-4-b above, any exceptions to the guidelines of NUREG-0612, Appendix A, for the analyses performed will be provided and justified in the future report of the reactor head drop analysis.