Wisconsin Electric POWER COMPANY
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March 14, 1983

CERTIFIED MAIL

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

Dear Gentlemen:

DOCKETS NOS. 50-266 AND 50-301
TECHNICAL SPECIFICATION CHANGE REQUEST NO. 87
SPECIFICATION FOR UTILIZATION OF OPTIMIZED FUEL ASSEMBLY DESIGN
POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

In accordance with the requirements of 10 CFR 50.59, Wisconsin Electric Power Company (Licensee) hereby submits its application for an amendment to Facility Operating Licenses DPR-24 and DPR-27 for the Point Beach Nuclear Plant, Units 1 and 2. The purpose of this amendment is to incorporate certain changes and revisions into the Point Beach Technical Specifications. These proposed changes to the Technical Specifications cover the limitations and related bases involved with operation of the Point Beach units using fuel of a similar design, referred to as the Westinghouse 14x14 Optimized Fuel Assembly (OFA) design. Operation of the Point Beach reactors with standard design fuel, and up to four demonstration OFA fuel assemblies, will continue to be governed by the current Technical Specifications until the first region of OFA fuel is loaded.

The Westinghouse OFA fuel contains design features which include improved neutron economy and improved uranium utilization and separative work requirements when compared to the Westinghouse standard fuel assembly. These design features are accomplished through a reduction in fuel rod diameter and a change in the spacer grid material from Inconel to Zircaloy in all but the top and bottom grids. The attached Technical Specification page changes are based on analyses covering both the transition cycles, the cores of which will contain both standard and OFA fuel assemblies, and the subsequent cycles with cores comprised entirely of OFA fuel. Cores consisting entirely of standard design fuel, with up to four demonstration OFA assemblies, are not "transition" cores and are covered by our current analyses. The most limiting core conditions were used to develop the new Technical Specification page changes. Detailed discussions of the analyses performed will be contained in the transition core licensing documentation. This documentation should be ready for submittal by about July 1983. In the future, this information will be incorporated into the Point Beach updated Final Safety Analysis Report (FSAR), as appropriate.

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$ 12,700.00

In addition to covering use of OFA fuel, the following items were incorporated in the Technical Specifications in conjunction with the safety analyses performed for OFA fuel utilization:

1. A change in the $F_{\Delta H}$ limit formulation to $F^N_{\Delta H} \leq 1.58 \times [1+0.3(1-P)]$. Currently this formulation is $F^N_{\Delta H} \leq 1.58 \times [1+0.2(1-P)]$.

2. Use of the Relaxed Axial Offset Control (RAOC) strategy instead of the Constant Axial Offset Control method currently in use.

4. Use of 0.95 for Refueling K_{eff} instead of 0.90 which is currently being used.

5. Allowance for a small positive moderator temperature coefficient (+5 pcm/°F) for up to 70% power.

The analyses which were performed to provide these related Technical Specification changes employed the Westinghouse Improved Thermal Design Procedure (ITDP) methodology for the OFA fuel as presented in WCAP-8568, "Improved Thermal Design Procedure", Chelemer H., Boman L.H., Sharp D.R., July 1975. This procedure satisfies the thermal design basis that protects against a departure from nucleate boiling (DNB) in the core. The procedure employs statistical methods to combine variations in plant operating parameters, nuclear and thermal parameters and fuel fabrication parameters. The Westinghouse WRB-1 DNB correlation is used on the OFA fuel. For standard fuel in the transition cores, the Westinghouse W-3 DNB correlation is used.

Table 1 contains a list of significant OFA fuel assembly characteristics along with the standard fuel assembly characteristics for comparison. The OFA fuel is fully compatible with the Westinghouse standard design fuel assemblies. Our letter to you dated July 1, 1980 discussed our plans for loading OFA demonstration assemblies in the Unit 2 Cycle 8 core. Visual examination of the demonstration assemblies at the end of Cycle 8 demonstrated that the OFA fuel was behaving as expected. In addition, Westinghouse has completed an extensive testing program to verify mechanical and thermal-hydraulic characteristics of the fuel. Flow characteristics and thermal-hydraulic capability were determined by means of side-by-side tests at the Westinghouse Fuel Assembly Test System (FATS) facility.

The Technical Specification changes, as currently proposed, do not reflect later Loss of Coolant (LOCA) analyses which will be completed in the near future. Specifically, the following LOCA analyses are contemplated:

1. Incorporation of the Point Beach Upper Plenum Injection (UPI) model in the LOCA calculations for the large break sizes.

2. Employment of a Westinghouse computer code currently under NRC review for analysis of the "small break" LOCA's.

The OFA LOCA analyses currently applicable did not include an UPI model. Instead a penalty for the Peak Clad Temperature (PCT) was used to cover the effects of UPI. Our recent letter dated February 22, 1983 presented sample calculation results for the Westinghouse UPI model, assuming use of OFA fuel.

Performance of the "small break" LOCA analyses has been purposely delayed pending completion of NRC review of the Westinghouse "small break" LOCA model and computer codes. These analyses will be performed and their results incorporated in the Technical Specifications and the licensing documentation prior to loading of the first OFA reload region.

Calculations were performed to determine the thermal-hydraulic effects of OFA fuel on the spent fuel pool storage racks. The adequacy of the existing spent fuel pool heat removal system was verified. The effect of OFA fuel radiation dose rates on the spent fuel pool wall, the spent fuel storage racks and the rack poison materials was also quantified consistent with the previous licensing of the high density spent fuel storage racks.

A criticality analysis of the effects of storing OFA fuel in the new fuel vault and the spent fuel racks was performed by Pickard, Lowe and Garrick, Inc. The criticality analyses covered unirradiated OFA fuel of enrichments up to 4.0 weight percent of U-235 which corresponds to a U-235 loading of 39.4 grams per axial centimeter. A description and discussion of the results of analyses concerning storage of new and spent OFA fuel in the new fuel vault and in the spent fuel pool will be provided with the transition core licensing submittal.

The Technical Specification changes specifically required are listed in Attachment A. Attachment B contains the proposed technical specification page changes. Changes from current specifications and bases are identified by a solid line in the right hand margin. The Technical Specification page changes proposed are based upon analyses which bound the transition cores and full OFA fuel cores and, therefore, are applicable to all cores containing OFA fuel, except for the current cores containing up to four demonstration assemblies of OFA fuel. Use of demonstration OFA fuel is governed by current Technical Specifications. The bases for the Technical Specification changes have also been revised as appropriate to reflect the revisions to the specifications and to describe the purpose of the specification.

It is anticipated that the initial loading of OFA fuel will be inserted into Point Beach Unit 2 for Reload Cycle 11 beginning in the fall of 1984. The first reload of OFA fuel for Point Beach Unit 1 would follow in the spring of 1985. Since it is desired that Unit 1 continue to operate with the existing Technical Specifications until after OFA fuel is loaded in its core, it is requested that these proposed Technical Specification revisions be issued initially for Point Beach Unit 2 operation to be effective with the Cycle 11 startup. The specification revisions for Point Beach Unit 1 could then be issued at a later date, or issued together with the Unit 2 amendment, but made effective at a later date concurrent with the Unit 1 Reload Cycle 13 startup in the spring of 1985.

Although the first loading of reload OFA fuel is not scheduled until the fall of 1984, for Point Beach Unit 2 Cycle 11, we request that your review of these proposed Technical Specification changes begin as soon as possible. As mentioned earlier, licensing documentation in support of this application will be submitted by about July 1983.

In accordance with the schedule of amendment approval fees for reactor facility licenses listed in 10 CFR Part 170.22, Licensee has determined that this license amendment approval for Point Beach Unit 1 should be classified as a Class IV amendment. This classification is based on the premise that this application involves several different changes of the Class III type which are related to the single issue of use of OFA. While this may result in review of a more complex issue, we believe that these changes do not constitute a significant hazard consideration nor require an extensive environmental impact appraisal. The amendment approval for Point Beach Unit 2 is a duplicate of the Unit 1 review. Accordingly, a Class I approval fee is required. We have enclosed a check in the amount of $12,700 for payment of these approval fees.

As further specified in the Commission's regulations, we enclose herewith three signed originals and 40 copies of this license amendment application. Please contact Licensee if you have any questions concerning this submittal or schedule for noticing and licensing of OFA fuel utilization at Point Beach.

Very truly yours,

C. W. Fay

Vice President - Nuclear Power

Enclosures (Check No. 720546)

Copy to NRC Resident Inspector

Subscribed and sworn to before me
this 14th day of March 1983.

Dorothy Gleischmann
Notary Public, State of Wisconsin

My Commission expires July 1, 1984