

July 1, 1980

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

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

Gentlemen:

## DOCKET NO. 50-301 POINT BEACH NUCLEAR PLANT, UNIT 2 CYCLE 8 RELOAD OPTIMIZED FUEL DESIGN DEMONSTRATION PROGRAM

As you are aware, Point Beach Unit 2 is currently in its seventh cycle of operation. The refueling shutdown at the end of Cycle 7 is planned during March 1981. During the refueling, four demonstration assemblies of Westinghouse 14x14 optimized design will be loaded into the core along with 28 standard design 14x14 reload assemblies. The remainder of the core will be of standard 14x14 design Westinghouse fuel. This letter is to advise you of our plans in respect to the fuel design demonstration program which will utilize four 14x14 Optimized Fuel Assemblies (OFA's).

Since late 1979, Westinghouse has been accumulating operating experience with 17x17 demonstration OFA's. The Westinghouse OFA contains design features which improve neutron economy and reduce uranium and separative work requirements when compared to the Westinghouse standard fuel assembly. These savings are accomplished through a reduction in the fuel rod diameter and a change in spacer grid material from inconel to zircaloy in all but the top and bottom grid locations.

Demonstration 17x17 OFA's are currently nearing completion of their first cycle of operation in Farley Unit 1 and Salem Unit 1 and later this year will begin operation in Beaver Valley Unit 1. Incore performance of the demonstration assemblies has been routine in all respects.

In order to gain additional operating experience with OFA's, four demonstration fuel assemblies will be loaded in the Point Beach Unit 2, Cycle 8 core. These demonstration fuel assemblies will contain the same features as the Westinghouse 17x17 OFA's except the fuel rod array will be 14x14 to match the current Point Beach Unit 2 fuel assembly design. As in the

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previous Westinghouse OFA demonstration programs, these demonstration assemblies will be placed in core locations that prevent them from becoming lead assemblies during normal operation or from leading to more limiting conditions during transient conditions than analyzed for the standard design fuel assemblies.

To facilitate possible post-irradiation inspection, the assemblies will contain removable fuel rods and special thimble plug devices. These thimble plug devices and removable fuel rods are basically of the same design as used for test assemblies previously loaded in Point Beach Unit 1.

The Unit 2, Cycle 8 design will proceed as before except that criteria mentioned above will govern as to location of the demonstration assemblies in the Cycle 8 reload core. As with previous cycle designs, core characteristics will be less limiting than previously reviewed and accepted or, for those postulated accidents presented in the Final Facility Description and Safety Analysis Report (FFDSAR) which could be adversely affected by the reload core, re-evaluation will demonstrate that the results of postulated events are within allowable limits.

The Reload Safety Evaluation will be performed in accordance with the "Westinghouse Reload Safety Evaluation Methodology", WCAP-9272. A detailed technical review of the Westinghouse Reload Safety Evaluation for Point Beach Unit 2, Cycle 8 will be performed, including an assessment of the impact of the demonstration assemblies on the Cycle 8 core design and safety analyses.

It is anticipated that unreviewed safety questions as defined by 10 CFR 50.59 will not be involved and, therefore, applications for amendment to the Unit 2 Operating License or for a Technical Specification change are not expected to be necessary. However, should the results of our safety review identify unreviewed safety questions, the Commission will be notified consistent with the requirements of 10 CFR 50.59.

Verification of the core design will be performed by means of the standard startup physics tests normally performed at the start of each cycle. The rod exchange method of performing worth measurements, which has been employed in previous cycles, will be employed in the Unit 2, Cycle 8 startup physics test program.

Very truly yours,

C. W. Fay, Director Nuclear Power Department

Copies to: NRC Resident Inspector Point Beach Nuclear Plant

> Mr. B. D. McKenzie Westinghouse Electric Corporation