Babcock & Wilcox

a McDermott company

Nuclear Power Generation Division

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March 12, 1981

Mr. John S. Berggren
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Berggren:

Enclosed are 22 copies of B&W Generic Report BAW-1511P, "Irradiation-Induced Reduction in Charpy Upper-Shelf Energy of Reactor Vessel Welds." This report is being submitted, at the Staff's request, by B&W on behalf of the B&W Owners Group's Reactor Vessel Materials Subcommittee. This subcommittee is comprised of the following utilities:

Sacramento Municipal Utility District (Rancho Seco)

Arkansas Power & Light (ANO-1)

General Public Utilities (TMI-1/2)

Florida Power Corp. (Crystal River 3)

Duke Power Co. (Oconee 1/2/3)

One of the major goals of the Owners Group Program has been to determine the period of time the 177-fuel assembly reactor vessels can operate without violating the 50 ft-lb C_vUSE threshold.

The attached report describes the implementation of predictive methodology developed in this program to determine the service life to reach the 50 ft-lb C_vUSE threshold for each of the Owners Group reactor vessels. It was also necessary to establish a means of predicting the pre-service C_vUSE of each of the beltline region reactor vessel welds. The available C_vUSE data obtained from B&W-manufactured, early vintage welds (high-Cu MnMoNi/Linde 80 submerged-arc) were analyzed collectively for this purpose.

Based on the developed methods, all Owners Group reactor vessel welds are predicted to exhibit a C_vUSE of more than 50 ft-lb for 16 or more years. Completion of work in the other phases of the B&W Owners Group Program will provide the justification for plant operation for the 40-year design life.

Portions of this report contain information developed solely by B&W on behalf of the B&W Owners Group. The development methodology contained in this report is not available in the open literature and disclosure would provide knowledgeable individuals with information which might impair B&W's competitive position. This information has been held confidential within the company and has not been disclosed to any other person except on a proprietary basis. A non-proprietary version of this report will be supplied in the near future.

If you have any questions, we would be glad to discuss them at your convenience.

Very truly yours,

James H. Taylor
Manager, Licensing

JHT:vp

cc: R. B. Borsum