

Babcock & Wilcox

a McDermott company

Nuclear Power Generation Division

3315 Old Forest Road
P.O. Box 1260
Lynchburg, Virginia 24505
(804) 384-5111

Mr. James R. Miller
Standardization and Special Projects Branch
Division of Project Management
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555



Dear Mr. Miller:

Enclosed are 40 copies of B&W topical report BAW-10149, "POWER TRAIN — Hybrid Computer Simulation of a Babcock & Wilcox Nuclear Power Plant." This report describes the version of the POWER TRAIN code in present use at B&W. This code is used to provide results and inputs for accident analyses for FSAR Chapter 15 for all 205- and 145-fuel assembly plants.

POWER TRAIN is a real-time, on-line hybrid computer simulation of a typical Babcock & Wilcox nuclear power plant. POWER TRAIN is used to predict the performance and behavior of the major components in the NSS for a wide range of plant conditions and operation.

This topical report describes the scope of the simulation, the modeling assumptions, and the modeling equations. An overview is given of the method of implementation, the input requirements, and the output capabilities.

The report describes an improved version of the code described in an earlier topical report, BAW-10070, currently under review by your office. The earlier version of the code was used to provide Chapter 15 results and inputs for the 177-fuel assembly plants.

We plan to submit by the end of 1981 a revision to this report describing in more detail POWER TRAIN's application to accident analysis and providing benchmarking of this version against that described in BAW-10070. This report, along with the revision to be submitted later this year, will be used to address NRC questions of 4/4/79 on BAW-10070 in support of the Consumers Power Company Midland Plant operating licensing effort.

8109020318 810817
PDR TOPRP EMVBW PDR
C

To 10
5/1/80

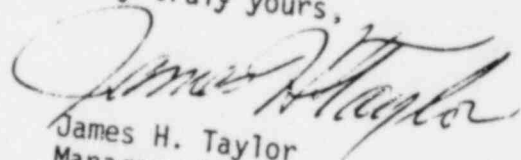
Babcock & Wilcox

- 2 -

August 17, 1981

A separate submittal will be made to Mr. Walton L. Jensen, Reactor Systems Branch of the Office of Nuclear Reactor Regulation, through Mr. Darl Hood, NRC Project Manager for Consumers Power Company Midland project, for this purpose.

Very truly yours,



James H. Taylor
Manager, Licensing

JHT:be

cc: R. B. Borsum, Bethesda Office, B&W
W. L. Jensen, NRC Reactor Systems Branch, NRR
Darl Hood, NRC Project Manager, Consumers Power Co.
Midland Project

BAW-10149

Topical Report
July 1981

— POWER TRAIN —

Hybrid Computer Simulation of a
Babcock & Wilcox Nuclear Power Plant