

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of
CONSUMERS POWER COMPANY
(Midland Plant, Units 1 & 2)

Docket Nos. 50-329
50-330

NRC STAFF TESTIMONY OF LAWRENCE P. CROCKER
RELATING TO THE POSSIBILITY OF CONSTRUCTING
A SMALLER NUCLEAR PLANT AT MIDLAND

Introduction:

In this testimony, I discuss the feasibility of constructing a smaller nuclear plant at the Midland site as a substitute for the nuclear plant now under construction.

Discussion:

The Midland Plant is to consist of two pressurized water reactors of Babcock & Wilcox design, each with a rated heat output of 2452 Megawatts, thermal. Unit 1 is to have an electrical output of about 460 Megawatts, electric, and, in addition, is to supply approximately 4,000,000 pounds per hour of process steam to the Dow Chemical Company plant. Unit 2 is to have an electrical output of 811 Megawatts, electric.

The design of the nuclear steam supply systems (NSSS) for plants of the Midland type was offered by the reactor vendor during the late-1960's. More recent NSSS designs offered by Babcock & Wilcox have been on the

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cost of capital, called the AFUDC rate, by the average construction work-in-progress. Therefore, the longer a project is in the construction work-in-progress stage and the higher the dollar value of that construction work-in-progress, the more AFUDC will be capitalized and the higher the amount which will eventually go into the rate base. This is essentially the explanation for the increased AFUDC of \$120 million. Consumers Power has already invested about \$400 million (see Exhibit 2 to Keeley Affidavit), and this amount will cumulate for an additional year or more at an AFUDC rate of 8.5% because of a nine-month suspension in construction. In addition, increased AFUDC will result because of a large amount of miscellaneous shutdown and startup expenses directly related to the suspension. Finally, the inflationary impact of the suspension on the remaining construction expenditures will also cause additional AFUDC to be recorded. The significant point to keep in mind with respect to AFUDC, however, is that the incremental amount resulting from a construction suspension will not necessarily involve an out-of-pocket expense borne by Consumers Power. Its economic impact will be felt primarily by the Company's ratepayers in the form of a higher price per kWh once the plant goes into operation. Up until that time, the incremental AFUDC is little more than an accounting procedure. This contrasts sharply with most of the other incremental costs resulting from a suspension, which will require the Company to actually expend more dollars over the balance of the construction period. This analysis does not consider the possibility that additional

securities will have to be issued to help finance the larger construction program or the somewhat more subtle point that financing costs may increase somewhat over the period of construction because of the presence of more non-cash AFUDC in reported earnings.

The suspension in construction for nine months will cause Bechtel's balance of plant costs to increase by almost \$47 million due to escalation alone. The escalation rate being used by Bechtel is 7% for the period beginning January 1, 1977. Even assuming a more favorable inflationary environment in the future than experienced in the recent past, such a rate appears reasonable when compared with the average annual increase of approximately 11% over the five years ended 1975 in the Handy-Whitman Construction Cost Index for the electric, light, and power industry. Aside from the \$8 million increase in Bechtel's contingency allowances, the remaining incremental costs, as shown on Exhibit 3, consist of various miscellaneous items, most of which can probably be attributed, either directly or indirectly, to shutdown and startup activities.

At the request of the NRC staff, Consumers Power Company submitted data presenting estimated annual expenditures under the present budget and with a nine-month suspension, both including and excluding AFUDC, as follows.

(Annual Expenditures in Millions)

<u>Date</u>	<u>Present Budget With AFUDC</u>	<u>Present Budget Without AFUDC</u>	<u>9-Month Suspen- sion With AFUDC</u>	<u>9-Month Suspen- sion Without AFUDC</u>
Thru 1976	\$ 430	\$ 368	\$ 430	\$ 368
1977	245	202	175	138
1978	310	248	278	226
1979	299	219	341	269
1980	220	127	268	177
1981	126	72	238	134
1982	40	32	147	67
1983	--	--	42	18
1984	--	--	1	1
Total	\$1,670	\$1,268	\$1,920	\$1,398

Since the dollars being expended by the Company occur over a number of years, one can get an improved perspective on the incremental costs of delay if the estimated annual expenditures under the present budget and with a nine-month suspension are discounted to present worth. In this way, future dollars can be converted into equivalent 1976 dollars. As previously mentioned, the incremental amount of AFUDC occasioned by a suspension will not necessarily result in more dollars being expended by the Company over the balance of the construction period. Consequently, I chose to discount the estimated annual expenditures excluding AFUDC

to isolate the impact a suspension will have on the Company's cash outflow. The Company's present plan shows total expenditures after 1976 of \$900 million, excluding AFUDC, and with a nine-month suspension, the total increases to \$1,030 million, or a difference of \$130 million. If these projected annual expenditures are discounted to present worth at a 10% rate, reflecting an assumed opportunity cost of capital, the expenditures come to \$703 million under the present plan and \$765 million with a nine-month suspension, or a difference of \$62 million. One should also consider that a portion of these projected expenditures represent contingency allowances and will therefore not necessarily result in cash expenditures.

However one might view the incremental costs of delay, it is apparent that they will be substantial. Although the increased financial burden will fall most directly on the Company over the period of construction, the Company's ratepayers will feel the impact for many years after the plant goes into commercial operation.

ARNOLD H. MELTZ

PROFESSIONAL QUALIFICATIONS

I am currently the Senior Financial Analyst at the U. S. Nuclear Regulatory Commission and am responsible for coordinating all financial qualifications review activities during the licensing process. In this regard, I plan and direct the staff financial evaluation of specific facility applications. These evaluations include a review of estimated construction costs or operating expenses, projected financing methods and underlying assumptions, regulatory trends, and money and capital market developments. I have also served as an expert witness in certain safety hearings before the Atomic Safety and Licensing Board when financial qualifications was a contested issue.

I was graduated from Boston University in 1965 with a B.S.B.A. in Finance and received an M.B.A. in Finance in 1966 and a J.D. in Law in 1969 from the University of California at Berkeley. I am a member of Beta Gamma Sigma, the national business administration honorary society, the New York Bar, and the American Bar Association and its Section of Public Utility Law.

Prior to joining the Nuclear Regulatory Commission in December 1974, I spent over two years with the New York Public Service Commission as a financial analyst in the Utility Finance Section of the Office of Accounting and Utility Finance. My responsibilities in this position included preparing testimony and exhibits in the cost of capital and rate of return areas and serving as an expert witness on these subjects in rate proceedings. I have testified in cases dealing with electric, gas, telephone, and water companies. My duties also involved making recommendations to the Commission on the suitability of utilities' financing petitions after an analysis of their financial condition, construction program, and ability to raise short and long-term capital.