

AFFIDAVIT

STATE OF MICHIGAN }
 } SS.
COUNTY OF JACKSON }

Before me, the undersigned authority, personally appeared William E. Keasler, who, being duly sworn according to law, deposes and says:

1. My name is William E. Keasler and I am employed by Consumers Power Company as Project Manager in charge of its Midland Project Department, which has overall responsibility for the licensing, design, construction, costs, scheduling and start-up of the Midland Nuclear Units. I have been associated with the project since December 1967, first as Project Engineer and now as Project Manager. As such I am familiar with all financing arrangements, capital costs and projected costs for the units.

2. The original projected capital cost of the Midland Units was three hundred forty-nine million dollars (\$349,000,000). The presently projected capital cost of the units is nine hundred forty million dollars (\$940,000,000).

3. The presently projected cost of fossil-fired alternatives to the Midland Units also greatly exceeds the estimated cost for such alternatives made at the time the Midland Units were originally evaluated. Attached is a table entitled "Midland Plant Alternatives" showing the 1979 present value, in millions of dollars, of the Midland Units and various alternatives. The first column shows the cost of the Midland Plant as presently designed. The second column shows the estimated cost

of the Midland Units without the process steam feature and utilizing natural draft cooling towers and a small storage pond rather than the planned cooling pond. The remaining three columns show the cost of various fossil-fired alternatives, also without the process steam feature and utilizing cooling towers for condenser cooling. A list of assumptions follows the table. As the table shows, the least costly fossil-fired alternative for an electric-only plant is almost twice as costly as an electric-only nuclear plant, and more expensive by more than eight hundred million dollars (\$800,000,000) than even the dual-purpose nuclear plant.

4. The presently projected capital cost for the Midland Units equals \$569 per kilowatt. This cost is comparable to the projected capital costs of similar nuclear units scheduled for initial production in the period 1978 to 1980. Based on estimates set forth in the Final Environmental Statements or Applicants' Environmental Reports, the estimated capital costs, in dollars per kilowatt, for several of these plants were as follows in mid-1973:

Philadelphia Electric Company, Limerick Units	\$480 ^(a)
Public Service of New Hampshire, Seabrook Units	507 ^(b)
Cleveland Electric Illuminating Company, Ferry Units	508 ^(c)

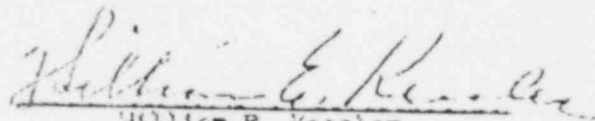
At about this same time, the cost of Midland was estimated to be about \$770 million, or about \$475/MW in 1979 dollars. Even barring scope changes

-
- (a) 2 1100 MWe units for Nov. 1978 and Nov. 1979 operation. The cost per kW does not include the cost of the cooling reservoir, and is expressed as 1978 present worth. AEC Draft Environmental Statement, August 1973.
- (b) 2 1140 MWe units for 1979-80 operation. Cost is expressed in 1980 dollars. Applicant's Environmental Report, June 1973.
- (c) 2 1210 MWe units for 1979-80 operation. Cost is expressed in 1980 dollars. Applicant's Environmental Report, June 1973.


for the other plants mentioned, I would expect their costs to have escalated by 5 to 10% in the intervening months.

5. In Supplemental Agreement No. 18, dated January 30, 1974, to the General Agreement between Consumers Power Company and The Dow Chemical Company, the parties agreed on a number of modifications to the General Agreement. Among these changes was the agreement to execute, on or before February 8, 1974, long-term contracts for the supply of process steam to Dow from the Midland Nuclear Units, for the supply of electric energy to Dow from Consumers Power Company's integrated electric system, and for Dow to undertake certain obligations to Consumers Power Company respecting the supply of water to Consumers Power Company's Midland Nuclear Plant. These contracts have all been signed by both parties.

Further deponent says not.


William E. Kessler

On this 4th day of February, 1974, before me, a Notary Public in and for said County, personally appeared William E. Kessler, to me known to be the same person described in and who executed the within instrument, who acknowledged the same to be his free act and deed.


Phyllis Bogart
Notary Public, Jackson County, Michigan
My Commission Expires April 20, 1974



MIDLAND PLANT ALTERNATIVES
(1979 Present Value in \$Millions)

	<u>Midland Nuclear Plant with Process Steam & Cooling Pond</u>	<u>Midland Nuclear Plant without Process Steam, with Natural Draft Cooling Towers, and with Small Storage Pond</u>	<u>Fossil Fuel Plants without Process Steam and with Cooling Towers</u>		
			<u>Coal-Fired Steam</u>	<u>Oil-Fired Steam^(a)</u>	<u>Oil-Fired Combined Cycle</u>
Capital Cost	340	785	585	330	250
Operating Cost	<u>364</u>	<u>467</u>	<u>1761</u>	<u>3975</u>	<u>4338</u>
Total	1504	1252	2346	4305	4588

(a) The oil-fired alternatives are shown for comparison purposes only. Due to the current oil supply situation, they are not viable alternatives.

The following assumptions were made in the preparation of this exhibit:

1. The discount rate is 9.25% per annum. The comparison in Table XI-1 of the Final Environmental Statement for Midland used 8.75%. The use of the higher rate penalizes the nuclear alternative relative to the fossil alternatives.
2. For comparison purposes, all units are given an 80% capacity factor based on 1300 MW electric output. A system economic dispatch study was used for XI-1. The oil-fired alternatives would not be run at an 80% capacity factor because of their high cost. However, it is appropriate to use 80% for all alternatives, since what is needed at Midland is a base-loaded plant with a capacity factor of 80% or better.
3. Heat rates for the fossil alternatives are:
 - a. High Sulfur Coal-Fired Steam Plant - 9000 BTU/kWh
 - b. Oil-Fired Steam Plant - 8950 BTU/kWh
 - c. Oil-Fired Combined Cycle Plant - 9000 BTU/kWh
4. Decommissioning costs for the Midland Nuclear Plant are estimated to be \$60 million.
5. The capital cost of the natural draft cooling towers plus storage pond for the electric-only nuclear alternative is assumed to be \$45 million.
6. Capital costs for the fossil units are:
 - a. High Sulfur Coal-Fired Steam Plant - \$450/kW
(includes \$85/kW for SO₂ removal equipment)
 - b. Oil-Fired Steam Plant - \$254/kW
 - c. Oil-Fired Combined Cycle Plant - \$192/kW
7. The cost of new high sulfur coal supplies is 7¢/MBTU in 1974 and is assumed to escalate at 5% per annum.
8. Current oil costs for the oil-fired steam plant and combined cycle plant are 19¢/MBTU and 20¢/MBTU, respectively. It is projected that these costs will escalate 15% in 1975, 10% in 1976 and 5% per annum thereafter.
9. The levelized cost of nuclear fuel is 3.2513 mills/kWh for Unit 1 and 3.1520 mills/kWh for Unit 2.
10. Insurance for the nuclear alternative is assumed to be \$2,049,000 in 1979 and is escalated at 3% per annum.

11. O & M costs are assumed to escalate at 8% in 1975, 6% in 1976, 4.5% between 1977 and 1980 and 3% per annum thereafter. The O & M costs in 1974 are assumed to be:

- | | |
|--|-----------------|
| a. Nuclear Steam Plant | - 1.0 mills/kWh |
| b. High Sulfur Coal-Fired Steam Plant
(includes 1.9 mills/kWh for
SO ₂ removal) | - 2.5 mills/kWh |
| c. Oil-Fired Steam Plant | - .6 mills/kWh |
| d. Oil-Fired Combined Cycle Plant | - 1.5 mills/kWh |
-