



UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)	
)	
The Cincinnati Gas & Electric)	Docket No. 50-358
Company, et al.)	
)	
(William H. Zimmer Nuclear)	
Power Station))	

APPLICANTS' SUPPLEMENTAL MEMORANDUM IN SUPPORT
OF THEIR MOTION FOR SUMMARY DISPOSITION RESPECTING
CERTAIN ADMITTED CONTENTIONS

I. Preliminary Statement

Applicants, The Cincinnati Gas & Electric Company, et al., incorporate Section I of "Applicants' Memorandum in Support of Their Motion for Summary Disposition Respecting Certain Admitted Contentions."

II. Statement of the Case

Applicants incorporate by reference Section II of "Applicants' Memorandum in Support of Their Motion for Summary Disposition Respecting Certain Admitted Contentions."

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III. Miami Valley Power Project's Contentions

Contention 11

Current data demonstrates that there is no need for the Zimmer plant at this time because Dayton Power and Light's peak demand is and will not be sufficient to justify the added power until after 1985.

The Zimmer Nuclear Power Station is owned by The Cincinnati Gas and Electric Company which has a 40% share, Columbus and Southern Ohio Electric Company which has a 28.5% share, and The Dayton Power and Light Company having a 31.5% share. The facility will be operated in accordance with the William H. Zimmer Unit 1 Operation Agreement ("Agreement")^{1/} which calls for the output to be distributed in proportion to the ownership interest of each of the participants [Agreement at 2]. Each owner is required to use its best efforts to schedule its undivided ownership share of the available capacity [Agreement at 7]. CG&E is required, as the operator, subject to plant safety and fuel performance criteria, to operate the facility so as to produce an output equal to the sum of the participants required scheduled generation [Agreement at 3] and to operate the plant at less than available capacity should one of the owners request less than their undivided ownership share of the available capacity [Agreement at 2].

^{1/} A draft dated January, 1979, of the Operation Agreement was transmitted to the Board and parties on January 9, 1979, as response to NRC Question 4 related to financial qualifications. The Agreement as signed on February 22, 1979 was substantially in the same form as submitted.

Thus, even assuming arguendo, that The Dayton Power and Light Company did not require any output from the facility until 1985, as alleged in the Project's Contention 11, CG&E would be obligated to operate the facility for the benefit of the other owners; the Project's Contention 11 does not dispute the other owners' need for the power from the facility. Of course, an adjustment would be made among the parties depending on energy usage of each owner (Agreement at 6-9).

Moreover, inasmuch as the Agreement requires each participant to use its best efforts to schedule output share, even if DP&L had no increase in load beyond its historic peak load for 1978 (or even in the hypothetical case that its peak would decrease), it would have to adhere to the provision of the Agreement to utilize its output share. Moreover, its self-interest would motivate it to cause it to utilize the energy generated by the Zimmer facility first. For The Dayton Power and Light Company, were the Zimmer Station delayed a year, additional fuel costs of \$30 million would be incurred [Affidavit of Allen M. Hill at Paragraph 5 (hereinafter "Hill, ¶____")]. The other owners would experience similar costs [Affidavits of Robert P. Wiwi at Paragraph 8 (hereinafter "Wiwi, ¶____") and W. Robert Kelley at Paragraph 2 (hereinafter "Kelley, ¶____")]. Thus to reduce its system operating costs, each utility would substitute the Zimmer Station for the output from the other stations. Since power produced by the Zimmer Station would displace power produced by the use of fossil fuels, including

oil, these resources would be saved [Wiwi, ¶8, Kelley, ¶2]. The demonstrated need for the substitution of the output from the nuclear-fueled unit for fossil-fired units is alone sufficient to justify the licensing of the Zimmer Station. Niagra Mohawk Power Corporation (Nine Mile Point Nuclear Station, Unit 2), ALAB-264, 1 NRC 347, 353-4 (1975).

In any event, The Dayton Power and Light Company does, in fact, need its output share of the Zimmer Station to meet its customer's increasing demands. As discussed in the Affidavit of Hill, The Dayton Power and Light Company has estimated its load growth over the next six years using econometric and other predictive techniques [Hill, ¶2]. If Zimmer is not on line to meet the summer peak of 1980, the generation reserves would fall to 16% for the summer peak, and 18% for the winter peak which fall below a reserve requirement which is acceptable [Hill, ¶3]. These evaluations assume that other units scheduled to begin operation during this time frame, in fact, came on line as scheduled [Hill, ¶4]. Thus, DP&L has shown a definite need for its share of the output of the facility.

This discussion is dispositive of Contention 11 as the need for power contention runs only to The Dayton Power and Light Company. However, it may be noted that the generation reserve levels without Zimmer installed for the summer of 1980 is 11.7% for CG&E [Wiwi, ¶6] and for the summer of 1981, the values are 16.4% for CG&E [Wiwi, ¶6] and 18.8% for Columbus & Southern Ohio Electric Company [Kelley, ¶5]. Installed reserve requirements for Columbus & Southern Ohio

Electric are approximately 5% higher than the other two companies [Kelley, ¶4]. It may be seen that without Zimmer, required reserves are not maintained. Thus the need for the Zimmer Station is established for CG&E and C&SOE.

For its part, the Project recites that by the year 2000, solar energy will provide 20% of the nation's energy needs.^{2/} Even if true, it is irrelevant to the issues before the Board. As discussed above, the Zimmer facility will be utilized to meet present demand of the Applicants' customers and increased solar use in the year 2000 is not a consideration in the licensing of Zimmer. The Project also points to an article in which it is claimed that photovoltaic cells and co-generating engines could be competitive with nuclear power.^{3/} It is clear from the face of the article that the alternatives proposed, photovoltaic cells and "a specially designed auto engine . . . which produces both electricity and hot water"^{4/} could not possibly supply electricity to meet the projected peaks in 1980 or 1981. The article admits that the initial year which either of such systems could conceivably be in operation would be 1987.^{5/} Thus, under applicable Commission precedents, both

^{2/} Response to Interrogatory 4, Miami Valley Power Project's Answers to Applicants' Second Set of Interrogatories dated February 23, 1979.

^{3/} An Economic Comparison of Three Technologies: Photovoltaics, Nuclear Power, Co-Generating Engines which is contained as Attachment 1 to Miami Valley Power Project's Answers to Applicants' Second Set of Interrogatories.

^{4/} Id. at 11.

^{5/} Id.

these "alternatives" are not viable alternatives to the Zimmer Station and need not even be considered.^{6/} It may be seen that such alternatives are based upon the most speculative of assumptions. In order for the photovoltaic cells to be at all competitive a drastic reduction in their price is required. It is sheer speculation that such reduction will occur or that technical problems of a grid of such admittedly unprecedented size will be solved, even by 1987. The article points out that the entire industry's present productive capacity of photovoltaic cells is 0.8 Mw per year, thus requiring a 1050 fold increase, merely to replace the Zimmer output.^{7/}

The assumptions regarding co-generation cannot stand scrutiny. It would require the installation of 56,000 such engines to replace the output of the Zimmer Station.^{8/} It is assumed that these engines burn natural gas and presumably that this fuel would be available for the intended use. In this regard, the assumption is made that there would be no fuel cost for the production of electricity, assigning the total cost of the fuel to heat production. However, such assumption completely neglects the fact that the utilities'

^{6/} Tennessee Valley Authority (Hartsville Nuclear Plants, Units 1A, 2A, 1B and 2B), ALAB-367, 5 NRC 92, 102 (1977), citing, inter alia, Carolina Environmental Study Group v. United States, 510 F.2d 796, 800-01 (D.C. Cir. 1975); Long Island Lighting Co. (Shoreham Nuclear Power Station), ALAB-156, 6 AEC 831, 855 (1973).

^{7/} Id. This is based upon 66,667 units to replace a 1,000 Mw central station.

^{8/} Id.

peak load occurs during the summer when residential heat production would not be required. Without pursuing the assumptions and methodology further, it is clear that no viable alternative to timely completion of the Zimmer Station has been presented.

Therefore, Applicants are entitled to summary disposition and Contention 11 should be dismissed.

2337 331

Contention 12

The Project alleges that the Applicants cannot guarantee an adequate supply of nuclear fuel for the plant in question. The Board construes this allegation to be that Applicants will not have an adequate fuel supply to operate the plant which is sought to be authorized for operation.

The question of the adequacy of the uranium fuel supply for the Zimmer facility is, to the extent that U₃O₈ has not already been purchased for the facility, a generic issue in that the U.S. total uranium resources and U₃O₈ requirements of operating plants, facilities under construction or on order must be examined. This generic matter has been considered and disposed of in a number of NRC proceedings, both by licensing and appeal boards. This portion of the motion for summary disposition will, rather than beginning anew, rely on the methodology and results already utilized and approved by the NRC, updating where necessary. In the Wolf Creek proceeding,^{9/} the Atomic Safety and Licensing Appeal Board saw no reason not to accept a similar generic determination made in the River Bend proceeding^{10/} with regard to certain aspects of the proceeding relating to uranium supply. Moreover, the Appeal Board has already found the witness used to support the findings in River Bend "was qualified by education and experience to make an informed,

^{9/} Kansas Gas and Electric Company (Wolf Creek Generating Station, Unit 1), ALAB-462, 7 NRC 320, 326 (1978).

^{10/} Gulf States Utilities Co. (River Bend Station, Units 1 and 2), ALAB-317, 3 NRC 175 (1976) and ALAB-444, 6 NRC 760 (1977).

expert judgment on the total amount of uranium which in all likelihood would be available over the next 40 years." ^{11/} Even then, the previous findings of the NRC were not taken uncritically. K. K. Chitkara, who is Manager of Nuclear Fuel and Advanced Engineering Projects for CG&E and, as shown in the Statement of Professional Qualifications which is attached to his affidavit, has expertise in matters related to fuel availability and the supply of uranium, has examined the Appeal Board and Licensing Board opinions and the underlying bases. In his expert opinion, he has found them to be reliable and conservative. As a result, he supports the findings of the Appeal Board made as discussed in his affidavit.

CG&E has a contract with Anaconda Company for the supply of U_3O_8 for the initial core and the first six reloads; following reload 6 and for the remainder of the life of the facility, it is expected that U_3O_8 will be obtained on the open market [Affidavit of K. K. Chitkara at Paragraph 3 (hereinafter "Chitkara, ¶__")].

In River Bend and Wolf Creek, the record established the number of existing and currently planned reactors to be 236 with a capacity of 236,000 Mw and the resultant requirements to be 1,577,000 of U_3O_8 tons [Chitkara, ¶¶ 6, 7]. Current estimates show that U_3O_8 requirements would total 1,075,000 tons corresponding to 199,100 MWe [Chitkara, ¶8]. Correcting

11/ River Bend, ALAB-317, 3 NRC at 181.

this estimate for various losses in processing, the requirements for the currently operating or planned reactors would be 1,134,000 tons. This was based upon an assumption of a transactional tails of 0.2% which is a reasonable one for the foreseeable future [Chitkara, ¶8]. However, even if a transactional tails analysis of 0.3% were used, as was assumed in 1975, the requirements for currently operating or planned reactors would be increased only by 20% to 1,361,000 tons [Chitkara, ¶8]. The Department of Energy's latest estimates of U.S. resources in the reserves and probable resources categories with forward costs of \$30 per pound is 1,760,000 tons [Chitkara, ¶9]. Even making a downward adjustment of 10% to account for mill losses, the U₃O₈ available would be 1,584,000 tons, thus demonstrating the existence of a sufficient quantity of uranium for the Zimmer plant as well as for the other reactors operating or planned, i.e., greater than the 1,361,000 tons requirements.

For its part, the Project apparently relies upon a number of books and newspaper articles to support its assertion that the amount of uranium is not sufficient.^{12/} It appears that the Project is attempting to utilize the same argument which has been previously rejected by the Appeal Board, i.e., that reliance should not be placed upon uranium resources not as yet shown to exist as a matter of virtual certainty. The Appeal Board rejected this argument in

^{12/} Miami Valley Power Project's Answers to Applicants' Third Set of Interrogatories served on April 11, 1979, Response to Interrogatory 4.

River Bend^{13/} and, after a fresh look, in the Wolf Creek proceeding.^{14/} There is no new information proffered which would cause this Board to reconsider the NRC's position. Moreover, the assertion made by the Project that the present contracts for uranium would be breached^{15/} is pure speculation and should be given no weight.

The Project asserts that the price of uranium has "risen dramatically in recent years." With regard to the supply of uranium such a factor would tend to increase the incentive to produce uranium and would increase the exploration for new reserves and thus would be a positive factor in increasing the supply.

The Project states that ERDA (now Department of Energy) was charging \$61.30 per Separative Work Unit (SWU) for enrichment and that private commercial enrichment would charge more. This argument is irrelevant to the availability of the uranium resource. This proceeding should not be permitted to become a forum for debate over the role of the government in enrichment. The only question is the sufficiency of the uranium supply for Zimmer. In any event, as of December 30, 1978, the DOE has raised the price per SWU to \$88.30. 43 Fed. Reg. 49831 (October 25, 1978).

^{13/} River Bend, ALAB-317, 3 NRC at 180-1.

^{14/} Wolf Creek, ALAB-462, 6 NRC at 324-5.

^{15/} Response at 14, Miami Valley Power Project's Answers to Applicants' Second Set of Interrogatories dated February 22, 1979.

It should be noted that many of the assertions used by the Project to support the lack of sufficient uranium involve supplies and requirements existing outside the United States. While the Applicants feel that the assertions made regarding world supply and requirements of uranium made by the Project are incorrect, their study has been limited to the United States and their findings regarding the availability of uranium are based on utilization and availability in this country.

For the foregoing reasons, Applicants are entitled to summary disposition regarding Contention 12.

2337 336

Contention 13

The equipment used in the construction and operation of the plant will be excessively costly and, in effect, beyond the financial capability of Applicants. Applicants are financially unqualified to operate the plant because of escalating costs.

In accordance with the requirements of 10 C.F.R. §50.33(f), and Appendix C to Part 50 and pursuant to the Commission's decision in Public Service Company of New Hampshire (Seabrook Station, Units 1 and 2), CLI-78-1, 7 NRC 1 (1978), a licensing board must find reasonable assurance that a utility is financially qualified. The Commission's Seabrook decision stresses that such a finding does not mean a demonstration of near certainty that an applicant will never be pressed for funds (7 NRC at 18). It does mean that an applicant must have a reasonable financing plan in the light of relevant circumstances (Id.). As discussed below, the finding of reasonable assurance of financial qualifications can be made.

The first part of the allegation of Contention 13, that the equipment used in the construction of the plant will be excessively costly deserves short shrift. The Zimmer Station is over 90% complete. The completion of the facility will be financed in a manner similar to the remainder of the construction and as a part of the construction program of the three owners.

The remaining cost to complete the Zimmer Station is only a small part of the funds to be committed in the con-

struction budgets of the Applicants over the next five years [Affidavit of William H. Zimmer, Jr. at Paragraph 2 (hereinafter "Zimmer, ¶__"), Affidavit of John M. Emery at Paragraph 2 (hereinafter "Emery, ¶__"), Affidavit of Paul E. Anderson at Paragraph 2 (hereinafter "Anderson, ¶__")]. Based upon the amount of remaining construction and an analysis of the various sources for construction funds available to the companies, taking into account the financial status of the owners and their previous demonstrated ability to raise capital, there is reasonable assurance that the remainder of construction can be financed [Zimmer, ¶¶3-8, Emery, ¶¶3-8, Anderson, ¶¶3-7].

With regard to construction costs, the Project only states that "[o]ther problems recently discovered by the NRC will probably increase those costs even further."^{16/} No specificity is given and no showing is made that the owners will be unable to finance its completion. This portion of the contention has no merit.

Appendix C to 10 C.F.R. Part 50 requires an applicant for an operating license to show that it possesses the funds necessary to cover estimated operating costs, or has reasonable assurances of obtaining the necessary funds or a combination of the two. In addition, an applicant is required to show that it possesses or has reasonable assurance of obtaining

^{16/} Miami Valley Power Project's Answers to Applicants' Second Set of Interrogatories dated February 23, 1979, Response to Interrogatory 16.

the funds necessary to pay the estimated costs of permanently shutting down the facility and maintaining it in a safe condition. Appendix C continues:

[I]t will ordinarily be sufficient to show at the time of filing of the application, availability of resources sufficient to cover estimated operating costs for each of the first 5 years of operation plus the estimated costs of permanent shutdown and maintenance of the facility in safe condition. It is also expected that, in most cases, the applicant's annual financial statements contained in its published annual reports will enable the Commission to evaluate the applicant's financial capability to satisfy this requirement.

The Applicants have already presented extensive evidence on the matter of their financial qualifications. The latest information was transmitted to the NRC on January 9, 1979 with copies to the Licensing Board and parties (hereinafter "Financial Submittal").^{17/} This submittal contains details of costs of operation and decommissioning and sources of revenue to cover these costs, and various submittals to the Securities and Exchange Commission and to rate-setting bodies. This submittal is referenced in the affidavits of the Company regarding Contention 13 and is incorporated by reference herein.

In conformance with the requirements of Appendix C discussed above, information on the estimated costs for the first five years of operation for various plant capacity

^{17/} Copies of the 1978 annual reports of the Applicants were sent to the Board and parties on March 26, 1979.

factors, including a capacity factor as low as 50% was submitted.^{18/} Considering these costs of operation over the first five years of operation and the capital structure and financial conditions of the owners and recent decision of The Public Utilities Commission of Ohio, there is reasonable assurance that each owner will be able to pay its share of costs associated with operation of the Zimmer Station [Zimmer, ¶9, Emery, ¶9, Anderson, ¶8].

The costs associated with decommissioning utilized by the Applicants were based upon a report published by the Atomic Industrial Forum (AIF), in November, 1976, entitled, "An Engineering Evaluation of Nuclear Power Reactor De-^{19/}commissioning Alternatives." This study provided cost estimates in 1975 dollars for several decommissioning alternatives for BWR plants of both 1160 MWe and 550 MWe sizes. The AIF study concluded that the most economical mode of decommissioning would be either temporary mothballing or temporary entombment for a cooling period of about 104 years, followed by dismantling and removal of the radioactive structures of the facility. If it is assumed that a security force will be required to guard a temporarily mothballed facility for the entire 104 year cooling period, then temporary entombment becomes the more economical choice. For purposes of the cost estimates, used by the Applicants,

^{18/} Financial Submittal, Response to Questions 1a and 1b.

^{19/} Id., Response to Questions 2 and 3.

it was assumed that such a security force would be required with temporary mothballing. The cost estimates presented are thus based on temporarily entombing the facility at the end of its 33 year life, allowing the radiation levels to decay for 104 years, then dismantling and removing only the contaminated structures.^{20/}

There are three components of total decommissioning cost: (1) initial entombment cost at the end of the 33 year life; (2) annual surveillance and maintenance costs for the next 104 years; and (3) cost of dismantling and removing contaminated structures at the end of the 104 year cooling period. The AIF estimates for these three components for an 1160 MWe BWR and for a 550 MWe BWR were interpolated between to obtain the estimates for the 800 MWe Zimmer plant. These estimates, in 1979 dollars, are:

a. Initial temporary entombment	\$8,555,348
b. Total surveillance and maintenance for 104 years	\$7,663,864
c. Dismantling and removal of contaminated structures after 104 years of cooling	\$1,645,639
Total decommissioning cost	\$17,864,851 ^{21/}

The Applicants presently plan on obtaining the funds required for decommissioning the plant by collecting from their customers through annual depreciation charges during

^{20/} Id.

^{21/} Id.

the service life of the facility amounts which will be deposited with a trustee. The sum of the amounts so deposited plus earnings thereon would be adequate to pay the decommissioning costs. Based on a 6% annual inflation rate from 1975 through the final dismantling/removal of contaminated structures in the year 2116 and a 5% tax-free interest rate on funds deposited with the decommissioning trustee, the annual payments to the decommissioning trustee over the 33 year plant life required to provide the necessary funds for each of the three components of decommissioning, as well as the total annual payment, are:

a. Initial temporary entombment	\$ 730, 963
b. 104 years of surveillance and maintenance	\$ 1,110,584
c. Dismantling and removal of con- taminated structures after 104 years of cooling	\$ 376,803
Total annual decommissioning fund deposit over 33 year operating lifetime	\$ 2,218,350 ^{22/}

This funding plan by the Applicants would require the approval of the Ohio Public Service Commission which has not yet been obtained. However, even in the absence of a plan specifically setting aside funds, based upon the established decommissioning costs relative to each of the Applicants

22/ Id.

financial resources, there is reasonable assurance that the Applicants could cover such costs [Zimmer, ¶9, Emery, ¶9, Anderson, ¶8].

The Project's arguments are to the effect that rate increases are necessary and cannot be assumed "because it would not be justified to pass onto the consumer inefficiency and cost overruns."^{23/} While the question of the rates to be charged customers of the Applicants is not a question before this agency, the Commission's Seabrook decision, makes clear that future rate increases may be taken into consideration in a positive finding on the issue of financial qualifications (7 NRC at 20).

In this regard, the Commission has stated that "[a]nticipated difficulties in raising funds are relevant to the reasonable assurance determination, but a showing of some potential difficulty would not necessarily preclude that determination, all other relevant factors being taken into account (Id. at 21)." In this case the Project has made no showing of any potential difficulty in raising funds.

Contention 13 has no merit, and the Applicants are entitled to summary disposition.

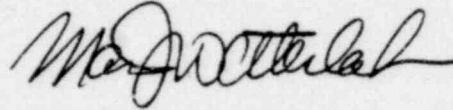
^{23/} Miami Valley Power Project's Answer to Applicants' Second Set of Interrogatories dated February 23, 1979, Response to Interrogatory 19.

IV. Conclusion

For the foregoing reasons, "Applicants' Supplemental Motion for Summary Disposition" should be granted.

Respectfully submitted,

CONNER, MOORE & CORBER

A handwritten signature in dark ink, appearing to read "Mark J. Wetterhahn", written in a cursive style.

Mark J. Wetterhahn
Counsel for the Applicants

April 23, 1979

2337 344

STATE OF OHIO)
) SS.
COUNTY OF HAMILTON)



AFFIDAVIT OF ROBERT P. WIWI

Robert P. Wiwi, being first duly sworn according to law comes forward and states:

1. My name is Robert P. Wiwi. I am employed by The Cincinnati Gas & Electric Company as Vice President of Electric Operations. In that position, I am responsible for among other duties the formulation of CG&E's long term energy and demand forecast and determination of additional generation capability so as to maintain adequate generating reserve margins. A statement of my professional qualifications is attached and incorporated by reference herein.

2. In determining the need for power or additional generating capacity several major factors are involved. The first is the forecast of future customers energy requirements and peak demands throughout the year with major emphasis being placed on forecasting the peak demands in the season likely to produce the greatest annual peak demand. For CG&E the peak season is the summer season because of the large amount of electric air conditioning installed by our customers.

3. The Cincinnati Gas & Electric Company (CG&E) updates its electric sales and load forecasts annually in the spring. Electric sales are forecast for each class of service fifteen

years into the future, the first three years of which are split up monthly by company for shorter term planning and revenue budgeting purposes. The methodology employed at CG&E involves a mix of forecasting techniques. The overall approach, however, is econometric in nature and results in a forecast of annual energy consumption by class of service which in turn derives a forecast of summer and winter peak demands.

4. Summer and winter peak loads are derived by applying load research based peak contribution factors to the disaggregated kWh forecast and summing the coincident peak contributions.

5. The forecasted peak loads in the following table reflect an anticipated annual compound growth rate of 4.6% over the projected peak that could have occurred in 1978 if we had experienced a typical Cincinnati "hot spell." This growth rate is consistent with projections being made by others not directly involved in the electric utility industry but who are interested in the electric utility sector of our economy and its future peak demands.

6. Another major factor in CG&E Co. generation expansion plans is the maintaining of a reserve margin of generation in the range of 18-25% at the time of the system peak. This reserve margin is necessary to provide a reliable source of power at peak times even in the event of forced outages of equipment or unanticipated electric demands in excess of the forecast. This reserve margin is also required throughout the year to permit

the removal of generating units from service for purposes of maintenance and inspection.

The following table of data for The Cincinnati Gas & Electric Company and Subsidiary Companies shows the effect of the Zimmer Nuclear Unit on the generation reserve margins for the next two years.

<u>Year</u>	<u>Summer Peak Forecast</u>	<u>Total CG&E *Generation</u>	<u>Reserve Margin</u>	<u>*Generation less Zimmer</u>	<u>Reserve less Zimmer</u>
1980	3218	3912	21.6	3595	11.7
1981	3352	4218	25.8	3901	16.4

* Generation based on net summer capability.

Without Zimmer Unit #1 being placed in service in early 1980, the reserve margins are not adequate for reliable service to our customers.

7. Prudent generation planning dictates that even with the desired reserve margins, some probability remains that a series of coincident forced outages of equipment will necessitate the purchase of emergency power from neighboring systems. If the reserve margin falls below the design range the probability of the need for emergency purchases of power greatly increase both as to frequency and magnitude and conceivably could exceed the amount available. If sufficient power could not be imported into the system the consequences could range from

(i) our customers being subjected to planned disconnection of service for several hours to

(ii) a total collapse of the system or blackout of southwestern Ohio. These consequences cannot be permitted to occur.

The social economic cost and potential costs of damage to the electric supply facilities of the company could approach 100's of millions of dollars. Therefore Zimmer Unit #1 must be placed in service in accord with its present in service date.

8. Notwithstanding the foregoing potential consequences of the delay in Zimmer station, the customers of the company would experience substantial increases in cost of energy because the energy that would have been produced by Zimmer would need to be produced by older less efficient coal and oil fired steam equipment and gas turbines as well as through the purchase of energy from others if available, such purchased energy being produced by similar less efficient and expensive generation equipment. An estimate of the fuel and purchase power penalty costs incurred by our customers in 1980 should the in service date of Zimmer Unit #1 be delayed from January 1, 1980 to January 1, 1981 is \$21,535,570 and using an additional 1,133,896 barrels of oil.

SWORN to before me this _____ day of _____, 1979.

Notary Public

2337 48

My Commission expires _____.

QUALIFICATIONS
ROBERT P. WIWI
VICE PRESIDENT - ELECTRIC OPERATIONS
THE CINCINNATI GAS & ELECTRIC COMPANY

My name is Robert P. Wiwi. My place of business is Fourth and Main Streets, Cincinnati, Ohio. I am Vice President of Electric Operations of The Cincinnati Gas & Electric Company.

I received a Bachelor of Science Degree in Electrical Engineering from the University of Cincinnati in 1964. I received a Master of Business Administration Degree from Xavier University in 1969. I also attended an Electric Utility Management Program at the University of Michigan in 1972. I have been employed by The Cincinnati Gas & Electric Company and its Subsidiaries since 1964. I have held various positions in the Electric Department in both the operating and planning divisions. I was Manager of the Electric Operations Department from May, 1972 until May, 1976 when I became Vice President of Electric Operations.

I am a member of the Institute of Electrical and Electronic Engineers, the Association of Edison Illuminating Companies and the Coordination Review Committee of East Central Area Reliability (ECAR).

2337 349

STATE OF OHIO }
 }
COUNTY OF FRANKLIN } SS.

AFFIDAVIT OF W. ROBERT KELLEY

W. ROBERT KELLEY, being first duly sworn according to law comes forward and states:

1. My name is W. Robert Kelley. I am employed by Columbus and Southern Ohio Electric Company as Vice President - Electric Operations. In that position, I am responsible for the generation design, operation, and maintenance; system operations; and substation operation and maintenance. A statement of my professional qualifications is attached and incorporated by reference herein.¹

2. ZPS-1 will supply C&SOE with its lowest incremental cost energy. Fuel cost for energy from ZPS-1 for the year 1980 is expected to be about 4.40 mills/kwh. The next least expensive energy will be from base-load, coal-fired units at a fuel cost of about 11.50 mills/kwh. With ZPS-1 in service in 1980, total C&SOE fuel costs are expected to be 145.1 million dollars. Without ZPS-1, these total fuel costs would be expected to rise to 155.3 million dollars. ZPS-1 is therefore expected to reduce fuel costs for C&SOE by 10.2 million dollars in 1980.

3. Without ZPS-1 in service, fuel oil usage by C&SOE would probably increase by about 94,000 barrels in 1980 over usage which would be expected with ZPS-1 in service.

4. Installed reserve requirements for C&SOE are approximately 5% higher than the other two companies. The generation reserve

criterion for C&SOE is based on the Daily Capacity Margins technique recommended by the ECAR Generation Reserve Panel of which C&SOE is a member. In this procedure, a yearly level of reliability is determined by analyzing daily reserve margins which take into account daily peak loads and related available generating capabilities. The reliability level used by C&SOE in forecasting reserve requirements is based on the most recent seven year system performance which portrayed a system acceptable reliability level. For this report, required installed reserve levels are expressed as a percent of peak load demand.

5. Without XPS-1 for years 1980 and 1981, C&SOE's projected installed reserve would deteriorate from a level of 34.5% in 1979 to 28.8% in 1980 and to 18.8% in 1981. No new units are planned by C&SOE during this time frame.

6. The above projected reserve levels are based upon the most recent C&SOE load forecast, which indicates anticipated summer and winter peaks for 1980 and 1981 as listed below:

	Summer Peak Demand (MW)	Winter Peak Demand (MW)
1980	2121	2026
1981	2219	2068

The above forecast includes the assumption that the City of Columbus would have their proposed generating station in operation for the winter season of 1981. If this project would not meet this schedule, then the forecasted C&SOE winter peak demand in 1981 would increase to 2126 MW.

7. The basic methodology used for the C&S&E load forecast is econometric modeling. Economic and demographic data was utilized in multiple regression equations to forecast energy consumption for the three major customer sectors and to forecast summer and winter peak demands. An analysis of load factor is also incorporated into the projection of peak demands.

WR Kelly

SWORN to before me this _____ day of _____, 1979

Notary Public

My Commission expires _____

2337 552

QUALIFICATIONS

W. ROBERT KELLEY
VICE PRESIDENT - ELECTRIC OPERATIONS
COLUMBUS AND SOUTHERN OHIO ELECTRIC COMPANY

My name is W. Robert Kelley. My business address is 215 North Front Street, Columbus, Ohio 43215. I am Vice President - Electric Operations for the Columbus and Southern Ohio Electric Company. In that position, I am responsible for generation design, operation, and maintenance; system operations; and substation operation and maintenance.

I attended the College of Engineering at Ohio State University in Columbus, Ohio, and received a B.S.E.E. Degree in 1962. In addition, I attended the Public Utilities Executive Training Course at the University of Michigan Graduate Business School in 1978.

In 1962, I was hired as a Substation Engineer by Columbus and Southern Ohio Electric Company. I was promoted to Assistant Supervisor of Test Procedures in 1966; and in 1968, became Supervisor of Test Procedures. I was promoted to Director of System Operations Analytical Area in 1973; and in 1974 was promoted to Manager of System Operations. I was elected Vice President of Electric Operations in 1976.

I am a member of the Institute of Electrical and Electronic Engineers; the East Coast Area Reliability, Coordination and Review Committee; the Ohio Valley Electric Corporation, Operating Committee; The Ohio State University, Mechanical Engineering Advisory Committee; the Electric Power Research Institute, Advisory Committee of Fossil Fuel and Advanced Systems Division; and the Edison Electric Institute,

2337 553

STATE OF OHIO)
) ss
COUNTY OF MONTGOMERY)

AFFIDAVIT OF ALLEN M. HILL

1. Allen M. Hill, being duly cautioned and sworn, deposed and says that he is Manager of Planning for The Dayton Power and Light Company and, as such, is responsible for the planning of future generation facilities, as well as the forecast of future peak demand and energy requirements. A statement of my professional qualifications is attached and incorporated by reference herein. The forecast of the demands is based upon econometric modeling techniques which were developed and tested for sales by customer class as well as for both summer and winter peak demand. The forecast, prepared in late 1978 was made based upon long run economic expectations.

2. The following are the projected demands through 1985:

<u>SUMMER</u>		<u>WINTER</u>	
	MW		MW
1980	2192	1980-81	2438
1981	2268	1981-82	2553
1982	2349	1982-83	2669
1983	2422	1983-84	2783
1984	2494	1984-85	2895
1985	2566	1985-86	3006

3. Based on these projections, if the Zimmer Station is not available for service in the summer of 1980, The Dayton Power and Light Company would have 16% reserve margin. Without the Zimmer Station in service by the following winter (1980-1981), an 18% reserve margin would result. These reserve margins do not provide acceptable levels of reliability.

4. It should be noted that these margins assume that East Bend Unit No. 2 will be on line as scheduled in January of 1981. With any slippage of this unit the reserve margins will be further reduced.

2337 354

5. If the Zimmer Station were delayed one year, additional fuel costs of \$30 million would be incurred.

6. Therefore, the timely completion of Zimmer Station is in the best interest of The Dayton Power and Light Company and its customers.

SWORN to before me this ____ day of _____, 1979.

Notary Public

My Commission expires _____.

2337 355

QUALIFICATIONS

ALLEN M. HILL

MANAGER - PLANNING

THE DAYTON POWER AND LIGHT COMPANY

My name is Allen M. Hill. My business address is Courthouse Plaza S.W., P. O. Box 1247, Dayton, Ohio 45401. I am the Manager of Planning and, as such, am responsible for the planning of future generation, transmission, and distribution facilities, as well as the forecasts of future peak demand and energy requirements.

I received a Bachelor of Science Degree in Electrical Engineering and a Master of Business Administration in 1967 and 1972 respectively, from the University of Dayton. Since that time I have been continuously employed by The Dayton Power and Light Company in various positions including: Electrical Engineer, System Planning Engineer, Valuation Engineer, Coordinator of Rate Design, Supervisor of Gas Services, and most recently, Manager of Planning.

POOR ORIGINAL

2337 556

STATE OF OHIO)
) SS.
COUNTY OF HAMILTON)

AFFIDAVIT OF KRISHAN K. CHITKARA

KRISHAN K. CHITKARA being first duly sworn according to law comes forward and states:

1. My name is Krishan K. Chitkara. I am employed by The Cincinnati Gas & Electric Company as Manager, Nuclear Fuel and Advanced Engineering Projects. My responsibilities in that position include nuclear fuel procurement for the Wm. H. Zimmer Nuclear Power Station. I have been involved in matters related to the availability and supply of uranium for The Cincinnati Gas & Electric Company. A statement of my professional qualifications is attached and incorporated by reference herein.

2. Project's Contention 12 reads:

The Project alleges that the Applicants cannot guarantee an adequate supply of nuclear fuel for the plant in question. The Board construes this allegation to be that Applicants will not have an adequate fuel supply to operate the plant which is sought to be authorized for operation.

I have the following response to the above contention of the Project:

3. The Applicants have a contract with Anaconda Company for the supply of U₃O₈ for the initial core and the first six reloads. Following reload 6 and for the remainder of the life of the Zimmer Station, it is expected that U₃O₈ will be obtained on the open market.

2337 357

4. The adequacy of the uranium supply for the Zimmer Station depends upon the total uranium resources and the U₃O₈ requirements of the nuclear plants operating, under construction and on order in the United States. As discussed below, considering the available resources and requirements, there is reasonable assurance that sufficient uranium will be available to fuel the Zimmer Station over its operating lifetime.

5. The matter of uranium supply and requirements has been already considered in a number of previous NRC proceedings, most notably the River Bend and Wolf Creek decisions.^{1/} Inasmuch as the issue is a generic one, for my analysis regarding sufficiency of the supply of uranium I have used the methodology utilized in those proceedings, updating the information, as necessary. Even though the uranium availability matter was reviewed and accepted by two different licensing boards and the NRC's Atomic Safety and Licensing Appeal Board, I have not accepted the methodology or assumptions uncritically. I have reviewed, as appropriate, the underlying testimony and can state that, in my opinion, the methodology and assumptions utilized lead to conservative statements of the requirements and availability of uranium.

6. In the Wolf Creek and River Bend proceedings, total uranium resources in the U.S. were evaluated in relationship to the lifetime requirements of the 236 reactors operating, under construction, or on order as of March 31, 1975. This

2337 58

^{1/} Kansas Gas and Electric Company (Wolf Creek Generating Station, Unit 1), ALAB-462, 7 NRC 320, 326 (1978) and LBP-77-3, 5 NRC 301 (1977). Gulf States Utilities Co. (River Bend Station, Units 1 and 2), ALAB-317, 3 NRC 175 (1976) and ALAB-444, 6 NRC 760 (1977) and LBP-75-30, 2 NRC 419 (1975) and LBP-77-6, 5 NRC 446 (1976).

population of 236 reactors having a total electrical capacity of 234,900 megawatts, included the Zimmer Station Unit 1.^{2/}

7. Assuming no recycle, and 0.3% tails assay, and accounting for process losses in conversion (0.5%) and burnup uncertainty (5%) in the fuel utilization, the total lifetime U₃O₈ requirements for 236 reactors were calculated to be 1,577,000 tons.^{3/} At that time it was shown that 1,980,000 tons would be available from reserves and probable resources.^{4/} Making a downward adjustment of 10% of mill losses, 1,782,000 tons of U₃O₈ would be available.^{5/} It is clear that 1,577,000 tons required for 236 reactors was within the total of 1,782,000 tons available within the U.S. as predicted by the Department of Energy at that time.

8. The data presented above regarding U₃O₈ requirements has been updated as a result of a decrease in the reactor population since 1975. More current estimates show that the lifetime requirements for 199,100 megawatts of electric capacity as of August, 1978, amount to 1,075,000 tons for the no recycle and

^{2/} Wolf Creek, ALAB-462, 7 NRC at 323 and River Bend, ALAB-317, 3 NRC 175 (1976).

^{3/} Table 23a of the NRC Staff Testimony on Uranium Fuel Efficiency Present by P. M. Wood and addenda thereto. Following Tr. 2041 in the River Bend proceeding (hereinafter "Wood at ") as approved by the Appeal Board in ALAB-444, 6 NRC at 788-90.

^{4/} Wood at 23 and River Bend, ALAB-317, 3 NRC 175, 181 (1975). See also River Bend, LBP-75-50, 2 NRC 419, 453 (1975).

^{5/} Wood at 23 and Wolf Creek, ALAB-467, 7 NRC at 325-6. The enrichment tails assay was assumed to be 0.3% in calculating the required amount of U₃O₈.

a 0.2% tails assay.^{6/} I have concluded that this tails assay is a reasonable value for the foreseeable future. Correcting for process losses in conversion (0.5%) and burnup uncertainty (5%) in the fuel utilization in the same manner as done previously, the requirements would be 1,134,000 tons. Even if a tails assay of 0.3% were used, I have calculated that the requirements would be increased only by 20% to 1,361,000 tons.

9. I have also taken into account more recent information related to uranium supplies in the United States. The Department of Energy's estimates of U₃O₈ resources (with forward costs of \$30 per pound) within the United States as of January, 1978, amount to 1,755,000 tons, considering only the reserves and probable resource categories.^{7/} Making a downward adjustment of 10% to account for mill losses, as was previously done in River Bend,^{8/} the amount of U₃O₈ available would be 1,580,000 tons. It should be observed that the requirements of 1,134,000 (and even 1,361,000 tons required if the conservative assumption of 0.3% tails is utilized) for the updated reactor population is well within the total of 1,580,000 tons available within the United States. As the Zimmer Station Unit 1 is included in this updated reactor population, I can conclude that a sufficient quantity of uranium will be available to operate the plant over its lifetime.

^{6/} "March 1979 - A Reassessment of U.S. Breeder Reactor Policy," Atomic Industrial Forum at 8 (copy attached).

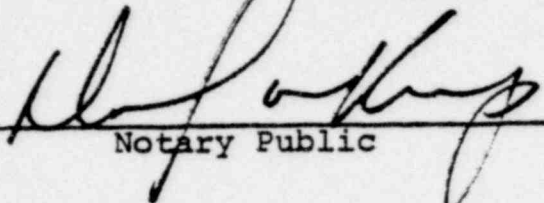
^{7/} Id. at 9.

^{8/} Wood at 23.

10. Thus, Contention 12 has no merit.

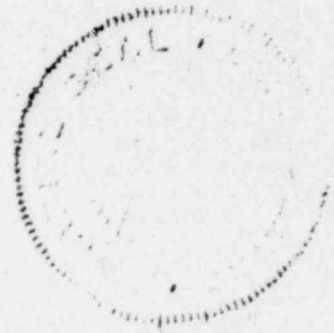
Krishan K. Chittara

SWORN to before me this 20th day of April, 1979.


Notary Public

My Commission expires _____.

DANIEL W. KEMP, Attorney at Law
Notary Public, State of Ohio
My Commission has no expiration date
Section 147.03 R. C.



2337 361

QUALIFICATIONS
KRISHAN K. CHITKARA
MANAGER - NUCLEAR FUEL & ADVANCED ENGINEERING PROJECTS
THE CINCINNATI GAS & ELECTRIC COMPANY

My name is Krishan K. Chitkara. My business address is 4th & Main Streets, Cincinnati, Ohio.

I graduated from Punjab University, India in 1963 with a Bachelor of Science (Honors) in Physics. I received my M.Sc. (Honors) in Physics from Punjab University in 1964. I served as Lecturer in the Department of Physics, Kurukshetra University, India for two years before coming to the U.S.A. to pursue graduate studies. I received my Ph.D. in Nuclear Engineering from the University of Cincinnati in 1972.

I joined Southern California Edison in August, 1972, as Associate Engineer in the Fuel Supply Department. In this position, I gained experience in the areas of nuclear fuel contracts and economics. In March, 1973, I was appointed Group Leader of the Core & Fuel Analysis group, where I was responsible for core operational analysis and fuel management of San Onofre Unit 1. In addition, the group performed nuclear analyses for San Onofre Units 2 & 3.

In March, 1974, I joined General Electric Company as a Senior Engineer in the Nuclear Energy Division. I was primarily involved in the nuclear design of BWR-6 and retrofit of various advanced concepts to earlier product lines.

In February, 1976, I joined The Cincinnati Gas & Electric Company as Head of the Nuclear Fuel Group. In this position, I was responsible for nuclear fuel procurement, contract administration, and economics. In addition, I was involved in the development of nuclear analytical capability in the areas of core management, fuel performance, and safety analysis. I directed a project dealing with long-run incremental costs of electric supply and was involved in the generation planning studies performed within the Company.

In September, 1978, I was appointed Manager, Nuclear Fuel & Advanced Engineering Projects. In this position, I am responsible for managing activities in the areas of nuclear fuel, nuclear systems technology, generation planning, and coordination with the Electric Power Research Institute (EPRI).

I am a member of the American Nuclear Society. In addition, I am a member of the Edison Electric Institute's Nuclear Fuels Committee and EPRI's Safety & Analysis Task Force.

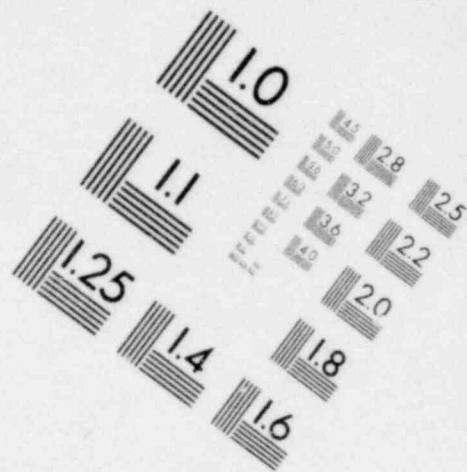
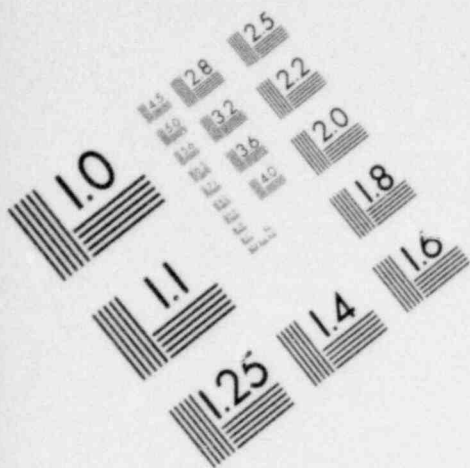
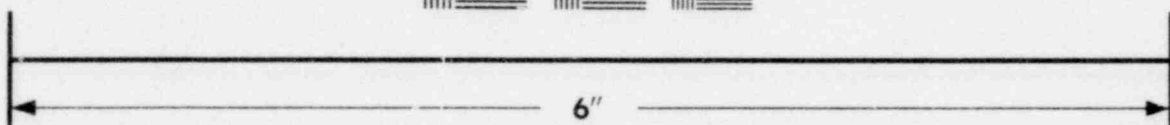
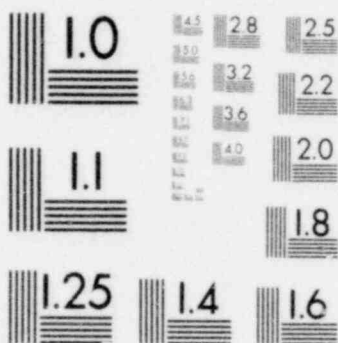
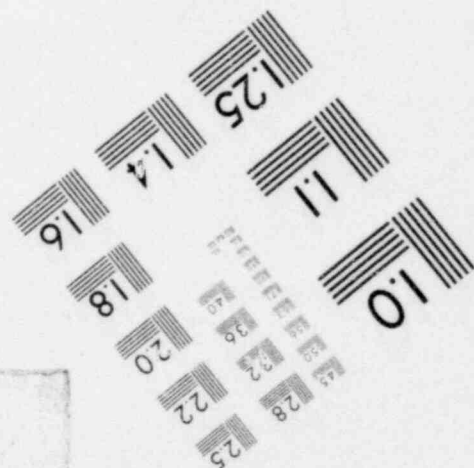
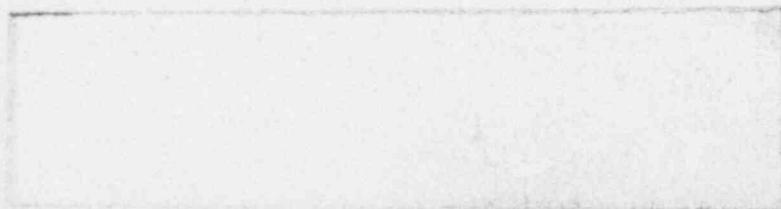
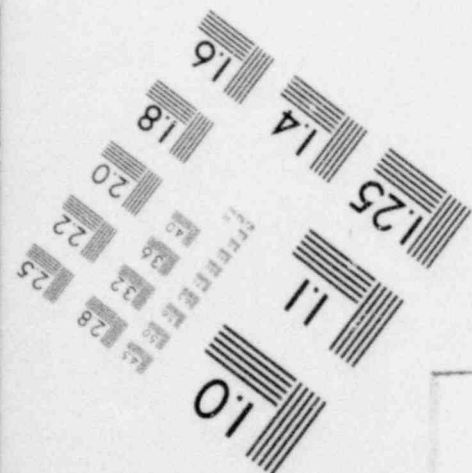


IMAGE EVALUATION TEST TARGET (MT-3)



MICROCOPY RESOLUTION TEST CHART



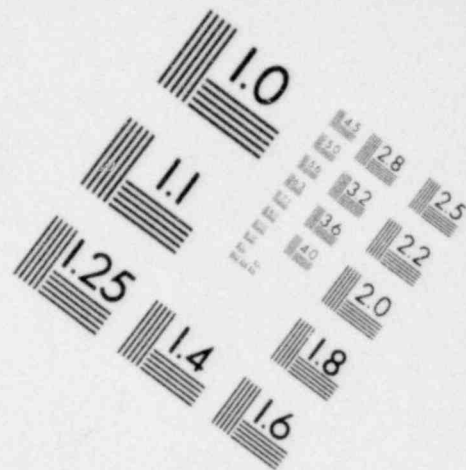
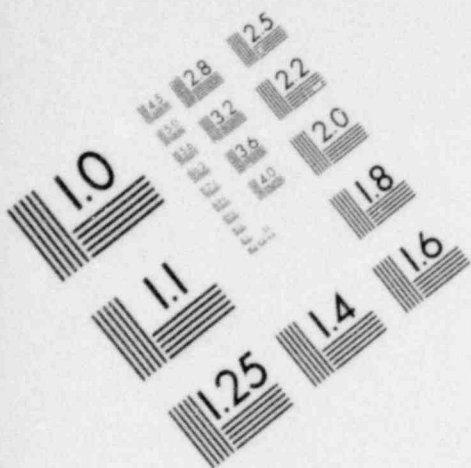
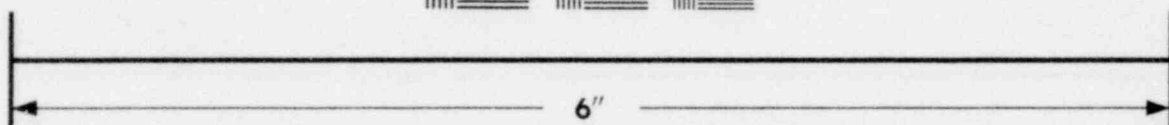
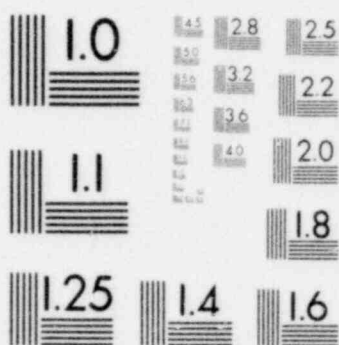


IMAGE EVALUATION TEST TARGET (MT-3)



MICROCOPY RESOLUTION TEST CHART

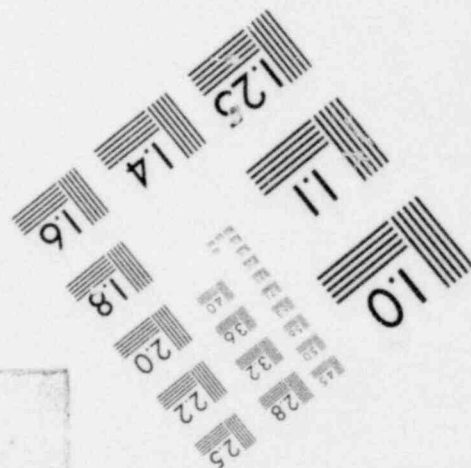
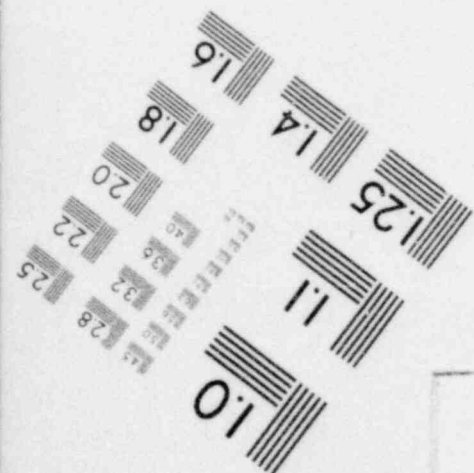


TABLE 1
U.S. URANIUM RESOURCES IN THOUSANDS OF TONS
OF U₃O₈ AS OF JANUARY 1978

\$/lb. U ₃ O ₈ Estimated Production Cost	Reserves		Probable		Possible		Speculative		Total	
	Jan. 1975	Jan. 1978	Jan. 1975	Jan. 1978	Jan. 1975	Jan. 1978	Jan. 1975	Jan. 1978	Jan. 1975	Jan. 1978
\$8	200,000	-	300,000	-	200,000	-	30,000	-	730,000	-
\$8 to 10	115,000	-	160,000	-	190,000	-	80,000	-	545,000	-
\$10	315,000	-	460,000	-	390,000	-	110,000	-	1,275,000	-
\$10 to 15	105,000	-	220,000	-	250,000	-	100,000	-	675,000	-
\$15	420,000	360,000	680,000	560,000	640,000	485,000	210,000	165,000	1,950,000	1,570,000
\$15 to 30	180,000	330,000	460,000	505,000	700,000	635,000	200,000	260,000	1,640,000	1,720,000
\$30	600,000	690,000	1,140,000	1,065,000	1,340,000	1,120,000	410,000	415,000	3,490,000	3,290,000
\$30 to 35	-	185,000	-	385,000	-	350,000	-	155,000	-	1,075,000
\$50	-	875,000	-	1,450,000	-	1,470,000	-	570,000	-	4,365,000
TOTAL	600,000	875,000	1,140,000	1,450,000	1,340,000	1,470,000	410,000	576,000	3,490,000	4,365,000

Source: U.S. Department of Energy

2338 001

TABLE 2
URANIUM REQUIREMENTS TO MEET CURRENT COMMITMENTS (8/78)

	Capacity	U ₃ O ₈ Requirements, tons*		
		Recycle U & Pu	Recycle U	No Recycle
Operating	51,400 MWe	175,300	223,200	277,300
Under Construction	104,000 MWe	354,900	452,100	581,600
On Order	<u>43,700 MWe</u>	<u>149,200</u>	<u>190,100</u>	<u>238,100</u>
Total	199,100 MWe	679,400	865,400	1,075,000

*Based on 30-year operating life and 60% capacity factor (18 fpy), 0.2% tails.

2338 002

Additionally, while I have indicated that the analytical techniques which are used to produce nuclear fuel designs are highly sophisticated and supported by a large body of experimental data, uncertainties in burnup of 5% and in spent fuel compositions of 1-3% could be expected. As I indicated in my testimony, these uncertainties could increase uranium requirements for the case with uranium recycle by 4%, 3% due to burnup uncertainty and 1% due to spent fuel composition uncertainty. Thus, for conservation due to these uncertainties, uranium requirements should be adjusted further upward by 4% resulting in uranium requirements for the uranium recycle case of 1,328,000 short tons U_3O_8 .

For the case of no uranium recycle, the adjustments to requirements are somewhat different. Beginning with the basic ERDA forecast numbers of 1,240,000 short tons U_3O_8 , this is adjusted upward by ^{20.5% *} ~~33%~~, a conservative estimate based on my testimony of the impact of not recycling uranium. Thus, ^{1,494,200*} ~~1,649,200~~ short tons would be required. But further adjustments need to be made. A 0.5% increase adjusts for the omitted conversion step in the ERDA forecast. And a 5% increase is needed for design burnup uncertainty. Note that for the non-recycle case, neither the fuel composition uncertainty nor the U-236 effect is of significance as it is assumed that spent fuel is discarded. Combining these effects, ^{1,577,900*} ~~1,739,300~~ short tons uranium requirements for the non recycle case come to ~~1,739,300~~ short tons U_3O_8 .

*CHANGES PER RIVER BEND TR. 2040

2338 003

To place these numbers in proper perspective, they should be compared to the quantities of uranium available. Mr. Patterson has testified to a uranium availability of 1,980,000 tons of U_3O_8 that can be mined. These resources must be adjusted to affect losses in material at the mill site where the ore is refined to yellowcake. Mr. Wilde, in his testimony, has indicated that mill losses may conservatively be taken at 10%. Hence uranium available consists of 1,782,000 short tons of U_3O_8 . Therefore, after conservative adjustments have been made at each step of the fuel cycle, as regards both uranium requirements and uranium requirements for both the recycle and non-recycle case are below uranium resources available, indicating an adequate fuel supply for the lifetime of the River Bend Units. These results are most clearly summarized in Table 23 below. It should be emphasized that these requirements estimates for both the recycle and non-recycle of uranium represent the combination of many conservatisms considered together.

2338 004

Table 23a

Uranium Requirements

	<u>Recycle</u>	<u>Non-Recycle</u>
ERDA Forecast (Short tons U_3O_8)	1,240,000	--
20.5% Adjustment for non-recycle	(None)	1,494,200
Conversion Adjustment (1/2 percent)	1,246,000	1,501,700
U-236 Adjustment (2.4 percent)	1,276,000	(None)
Burnup Uncertainty (5% non-recycle) (3% recycle)	1,315,000	1,577,000
Fuel Composition Uncertainty (1%)	1,328,000	(None)
Total Requirements (Short tons U_3O_8)	1,328,000	1,577,000
Total Uranium Available after MIT Losses (Short tons U_3O_8)	1,782,000	1,782,000
Excess Uranium Available (Short tons U_3O_8)	454,000	205,000

2338 005

STATE OF OHIO)
) SS.
COUNTY OF HAMILTON)

AFFIDAVIT OF WILLIAM H. ZIMMER, JR.

WILLIAM H. ZIMMER, JR., being first duly sworn
according to law comes forward and states:

1. My name is William H. Zimmer, Jr. I am employed by
The Cincinnati Gas & Electric Company as Vice President and
Treasurer. In that position, I am responsible for the
formulation of CG&E's financing program (including the sale of
securities), cash management and control and various financial
studies. A statement of my professional qualifications is
attached and incorporated by reference herein.

2. The Cincinnati Gas & Electric Company and subsidiary
companies have budgeted \$1,077.8 million for construction
expenditures in the period 1979-1983. Included in this budget
is \$32.9 million, representing CG&E's share of the expenditures
necessary to complete Zimmer Station. Thus, only 3.1% of CG&E's
five-year construction budget is for the completion of Zimmer
Station.

3. CG&E obtains the funds necessary to construct new
facilities from internal sources and from the public sale of
securities. Over the last five years, CG&E obtained 39% of its
requirements for its construction program from internal sources.

2338 006

4. Rates increases will be sought as required and justifiable. Section 4909.15 of the Ohio Revised Code provides, in part, that The Public Utilities Commission, when fixing rates, shall determine:

(1) The valuation of property used and useful in rendering the public utility service, plus an allowance for working capital and at its discretion, permit an allowance for construction work in progress,

(2) a fair and reasonable rate of return to the utility,

(3) the dollar annual return to which the utility is entitled by applying the fair and reasonable rate of return determined in 2 above to the valuation determined in 1 above, and

(4) the cost to the utility of rendering the public utility service for the test period.

5. CG&E's construction program cannot be totally financed with internally generated funds. CG&E expects to obtain the remainder of its construction cash requirements from the sale of securities. On March 21, 1979, CG&E sold \$100 million of First Mortgage Bonds, and the proceeds will be used to partially finance its construction program. Moody's rated these Bonds Aa.

6. Additional securities (bonds, preferred stock and common stock) will be sold when necessary in order to obtain the funds required and in a proportion to maintain CG&E's strong, capital structure.

2338 007

7. It is my professional opinion, considering all the above factors, that CG&E will be able to finance its portion of the construction costs for the Zimmer Station.

8. Extensive updated financial information related to operation and decommissioning was submitted to the NRC on January 9, 1979, with copies to the Licensing Board and parties. As that submittal applies to CG&E, I incorporate it by reference herein.

9. I have reviewed the costs of operation of the Wm. H. Zimmer Nuclear Power Station Unit 1 over the first five years as presented in response to Question 1.a of the January 9, 1979 submission, and the costs of decommissioning discussed in response to Questions 2 and 3 in that submission. Based upon my knowledge of the capital structure and financial condition of the Company and recent decisions of the Public Utilities Commission of Ohio, there is reasonable assurance that the Company will be able to pay its share of costs associated with operation of the unit and decommissioning costs.

SWORN to before me this _____ day of _____, 1979.

Notary Public

My Commission expires _____.

2338 008

QUALIFICATIONS

WILLIAM H. ZIMMER, JR.
VICE PRESIDENT AND TREASURER
THE CINCINNATI GAS & ELECTRIC COMPANY

My name is William H. Zimmer, Jr. My business address is 139 E. Fourth Street, Cincinnati, Ohio 45202. I am Vice President and Treasurer for The Cincinnati Gas & Electric Company. In that position, I am responsible for the formulation of CG&E's financing program (including the sale of securities), cash management and control and various financial studies.

In 1952, I received a Bachelor of Science Degree from the Ohio State University, School of Commerce, Accounting Sequence.

For a short period of time I worked for the General Electric Company in their Accounting Department after which I was hired by The Cincinnati Gas & Electric Company as a Staff Assistant. After holding various positions in the Accounting and Treasurer's Departments, I was elected Assistant Treasurer of CG&E and its subsidiary companies in 1959, Treasurer in 1963, Secretary and Treasurer in 1975, and Vice President and Treasurer in 1978.

I am a member of the Executive Committee of the Edison Electric Institute Finance Committee and a member of the Cincinnati Society of Security Analysts.

2338 009

STATE OF OHIO)
) SS.
COUNTY OF FRANKLIN)

AFFIDAVIT OF JOHN M. EMERY

JOHN M. EMERY, being first duly sworn according to law comes forward and states:

1. My name is John M. Emery. I am employed by Columbus and Southern Ohio Electric Company as Vice President and Treasurer. In that position, I am responsible for C&SOE's financial planning, sale of securities, cash management and control, contacts with investors and various financial studies and analyses.

2. Columbus and Southern Ohio Electric Company has budgeted cash expenditures of \$501 million for construction of electric facilities in the period 1979 - 1983. Included in this budget is \$11.3 million, representing C&SOE's share of the expenditures necessary to complete Zimmer Station. Thus, only 2.3% of C&SOE's five-year construction budget is for the completion of Zimmer Station.

3. C&SOE obtains the funds necessary to construct new facilities from internal sources and from the public sale of securities. Over the last five years, C&SOE obtained 17% of its requirements for its construction program from internal sources.

4. C&SOE applied for a permanent rate increase on March 1, 1979 which, if granted, will provide \$126 million of

2338 010

additional revenues annually. Additional rate increases will be sought as required and justifiable. Section 4909.15 of the Ohio Revised Code provides, in part, that The Public Utilities Commission, when fixing rates, shall determine:

(1) The valuation of property used and useful in rendering the public utility service, plus an allowance for working capital and at its discretion, permit an allowance for construction work in progress,

(2) a fair and reasonable rate of return to the utility,

(3) the dollar annual return to which the utility is entitled by applying the fair and reasonable rate of return determined in 2 above to the valuation determined in 1 above, and

(4) the cost to the utility of rendering the public utility service for the test period.

5. C&SOE's construction program cannot be totally financed with internally generated funds. Funds not generated internally will be obtained from the sale of securities to provide the remainder of the construction cash requirements. C&SOE expects to sell common shares and first mortgage bonds in the latter half of 1979, the proceeds of which will be used for the construction program. C&SOE's bonds are rated A by Moody's.

6. Additional securities (bonds, preferred stock and common stock) will be sold when necessary in order to obtain the additional funds required and in a proportion to maintain C&SOE's strong capital structure.

2333 011

7. It is my professional opinion, considering all the above factors, that C&SOE will be able to finance its portion of the construction costs for the Zimmer Station.

8. Extensive updated financial information related to operation and decommissioning was submitted to the NRC on January 9, 1979, with copies to the Licensing Board and parties. As that submittal applies to C&SOE, I incorporate it by reference herein.

9. I have reviewed the costs of operation of the Wm. H. Zimmer Nuclear Power Station Unit 1 over the first five years as presented in response to Question 1.a of the January 9, 1979 submission, and the costs of decommissioning discussed in response to Questions 2 and 3 in that submission. Based upon my knowledge of the capital structure and financial condition of the Company and recent decisions of the Public Utilities Commission of Ohio, there is reasonable assurance that the Company will be able to pay its share of costs associated with operation of the unit and decommissioning costs.

John M. Emery

SWORN to before me this 20th day of April, 1979.

Sandra L. Witte
Notary Public

2338 012

My Commission expires 2-22-84.

SANDRA L. WITTE
NOTARY PUBLIC - STATE OF OHIO
MY COMMISSION EXPIRES FEB. 22, 1984

QUALIFICATIONS

JOHN M. EMERY
VICE PRESIDENT AND TREASURER
COLUMBUS AND SOUTHERN OHIO ELECTRIC COMPANY

My name is John M. Emery. My business address is 215 North Front Street, Columbus, Ohio 43215. I am Vice President and Treasurer for Columbus and Southern Ohio Electric Company. In that position, I am responsible for C&SOE's financial planning, sale of securities, cash management and control, contacts with investors and various financial studies and analyses.

In 1942 I received a Bachelor of Business Administration degree from Western Reserve University. I also attended Harvard Graduate School of Business Administration in 1943.

From 1945 until 1952 I was employed by the auditing firm of Arthur Andersen & Company. I was employed by C&SOE in 1952 and performed various functions in the Accounting and Treasury Organization until 1963 when I was elected Assistant Treasurer.

I became Assistant Vice President in 1968, Treasurer and Assistant Secretary in 1973, Treasurer and Secretary in 1976, and Vice President and Treasurer in later 1976.

I am a member of the American Institute of Certified Public Accountants, the Edison Electric Institute Financial Committee, and Financial Analysts Federation.

2338 013

STATE OF OHIO)
) SS.
COUNTY OF MONTGOMERY)

AFFIDAVIT OF PAUL E. ANDERSON

PAUL E. ANDERSON, being first duly sworn according to law comes forward and states:

1. My name is Paul E. Anderson. I am employed by The Dayton Power and Light Company as Treasurer. In that position, I am responsible for the formulation of the Company's financing program (including the sale of securities), cash management and control and various financial studies. A statement of my professional qualifications is attached and incorporated by reference herein.

2. The Dayton Power and Light Company has estimated its construction expenditures to be \$1,018 million for 1979-1983. Included in this budget is \$29 million for the Company's share of the expenditures necessary to complete Zimmer Station, representing only 2.9% of the five-year construction budget.

3. The Company obtains the funds necessary to construct new facilities from internal sources and from external sources which includes the public sale of securities. Over the last five years, the Company obtained 20% of its requirements for its construction program from internal sources.

4. On March 9, 1979, the Company was granted a permanent rate increase of approximately \$10.5 million annually over the then existing emergency level of rates. The Company will seek additional rate increases as required and justifiable. Section 4909.15 of the Ohio Revised Code provides, in part, that The Public Utilities Commission, when fixing rates, shall determine:

2338 014

(1) The valuation of property used and useful in rendering the public utility service, including an allowance for working capital and, at its discretion, an allowance for construction work in progress,

(2) a fair and reasonable rate of return to the utility,

(3) the dollar annual return to which the utility is entitled by applying the fair and reasonable rate of return determined in 2 above to the valuation determined in 1 above, and

(4) the cost to the utility of rendering the public utility service for the test period.

5. The Company's construction program cannot be totally financed with internally generated funds. The Company expects to obtain the remainder of its construction cash requirements from external sources, including the sale of securities when necessary to obtain the funds required.

6. It is my professional opinion, considering all the above factors, that the Company will be able to finance its portion of the construction costs for the Zimmer Station.

7. Extensive updated financial information related to operation and decommissioning was submitted to the SEC on January 9, 1979, with copies to the Licensing Board and parties. As that submittal applies to the Company, I incorporate it by reference herein.

8. I have reviewed the costs of operation of the Wm. H. Zimmer Nuclear Power Station Unit 1 over the first five years as presented in response to Question 1.a of the January 9, 1979 submission, and the costs of decommissioning discussed in response to Questions 2 and 3 in that submission. Based upon all the above factors and my knowledge of the capital structure and financial

2338 015

condition of the Company and recent decisions of The Public Utilities Commission of Ohio, it is reasonable to assume that the Company will be able to pay its share of costs associated with operation of the unit and decommissioning costs.

SMOKED to before me this ____ day of _____, 1979.

Notary Public

My Commission expires _____

2338 016

QUALIFICATIONS

PAUL R. ANDERSON

TREASURER

THE DAYTON POWER AND LIGHT COMPANY

My name is Paul R. Anderson. My business address is Courthouse Plaza S.W., P. O. Box 1267, Dayton, Ohio 45401. I am the Treasurer of The Dayton Power and Light Company's financing program (including the sale of securities), cash management and control and various financial studies.

I received a bachelor of Science degree in Accountancy and a Master of Accounting Science degree in 1963 and 1964, respectively, from the University of Illinois. From 1964 until 1978, except for two years of military service, I was employed by Arthur Andersen & Co., an international public accounting firm, in the public utility audit division, working in the areas of financial audits, rate proceedings, financings, and special matters. I joined The Dayton Power and Light Company as Treasurer in June 1978.

I am a certified public accountant and a member of the American Institute of Certified Public Accountants, the Ohio Society of Certified Public Accountants and the Financial Executives Institute.

2338 017

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION



In the Matter of)
)
The Cincinnati Gas & Electric) Docket No. 50-358
Company, et al.)
)
(William H. Zimmer Nuclear)
Power Station))

CERTIFICATE OF SERVICE

I hereby certify that copies of the following documents:

1. "Applicants' Supplemental Motion for Summary Disposition"
2. "Applicants' Statement of Material Facts As to Which There is no Genuine Issue to be Heard"
3. "Applicants' Supplemental Memorandum in Support of Their Motion for Summary Disposition Respecting Certain Admitted Contentions"

all dated April 23, 1979, in the captioned matter, were served upon the following by deposit in the United States mail this 23rd day of April, 1979:

Charles Bechhoefer, Esq.
Chairman, Atomic Safety and
Licensing Board
U.S. Nuclear Regulatory
Commission
Washington, D. C. 20555

Dr. Frank F. Hooper, Member
Atomic Safety and Licensing
Board
School of Natural Resources
University of Michigan
Ann Arbor, Michigan 48109

Richard S. Salzman, Esq.
Chairman, Atomic Safety and
Licensing Appeal Board
U.S. Nuclear Regulatory
Commission
Washington, D. C. 20555

Dr. Lawrence R. Quarles
Atomic Safety and Licensing
Appeal Board
U.S. Nuclear Regulatory
Commission
Washington, D. C. 20555

2338 018