

*Exhibit with letter 10-17-75  
From: Ray P. Perry  
ELD*

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION  
BEFORE THE  
ATOMIC SAFETY AND LICENSING BOARD

In the Matter of

The Toledo Edison Company and  
The Cleveland Electric Illuminating  
Company

Docket Nos. 50-346A, 50-440A,  
50-441A, 50-500A,  
and 50-501A

Davis-Besse Nuclear Power Station, Units 1, 2, and 3  
and  
The Cleveland Electric Illuminating  
Company, et al  
Perry Nuclear Power Plant, Units 1 and 2

PREPARED DIRECT TESTIMONY OF

J. D. GUY, Ph.D., P.E.  
Electrical Engineer

Office of Antitrust and Indemnity  
Nuclear Reactor Regulation  
Nuclear Regulatory Commission

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1. Q. Please state your name and position?

A. My name is J. D. Guy and I am employed by the Office of Antitrust and Indemnity, Nuclear Reactor Regulation, Nuclear Regulatory Commission. My title is Electrical Engineer, Power Supply Analysis Branch, and I have been in this position since March, 1974.

2. Q. Please summarize your educational and professional experience.

A. I received a B.S. in Electrical Engineering from Texas A & M University in 1963, a M.S. in Electrical Engineering from the University of New Mexico in 1965 and a PhD. in Electrical Engineering from Texas A & M in 1969. During the years of my graduate study at Texas A. & M I was associated with the Electric Power Institute, a university related organization which was sponsored by a group of investor owned utilities in Texas. During my association with the Institute I contributed to an extensive research program concerning electric power system reliability calculation techniques. This research effort led to the completion in 1969 of my doctoral dissertation entitled "Short-term Generator Commitment to Establish a Desired System Reliability while Minimizing System Fuel Costs." I also have authored or coauthored two papers both of which are concerned with power system reliability.

1           These are:

- 2           1.   "Evaluation and Comparison of Some Methods for  
3           Calculating Generating System Reliability," A. K. Ayoub,  
4           J. D. Guy, A. D. Patton, IEEE Transactions, PAS-89,  
5           No. 4, April 1970, pp. 521-527.  
6           2.   "Security Constrained Unit Commitment," J. D. Guy,  
7           IEEE Transactions, PAS-90, No. 3, May/June 1971,  
8           pp. 1385-1390.

9           Between 1969 and until I joined the staff of NRC in 1974, I  
10           was employed by Houston Lighting and Power Company as Head  
11           of the Generation Planning Section.

- 12           1.   As Head of the Generation Planning Section, I was  
13           responsible for determining future system generation  
14           requirements and developing optimized techniques for  
15           determining appropriate mixes of generation types for  
16           that utility.  
17           2.   At this time I also developed or assisted in the  
18           development of computerized programs to aid in the  
19           selection of optimum investment alternatives and was  
20           subsequently assigned for six months as a technical  
21           advisor to the Corporate Model Staff in the Accounting  
22           Department.  
23           3.   As technical consultant to the Engineering Department,  
24           I was responsible for any required special studies  
25           which included studies of interconnected system operat

1 Studies which were completed under my direction  
2 included (1) development of an optimized cold system  
3 start-up procedure; (2) determination of electric  
4 interference in railway communication systems; and (3)  
5 the numerical solution of differential equations to  
6 determine bus stress factors during system fault  
7 conditions.

8 During my years in Houston I attended numerous symposia and  
9 technical meetings and actively participated as a member and  
10 officer in the Power Group Chapter of the Institute of  
11 Electrical & Electronic Engineers (IEEE). I am a registered  
12 professional Engineer in the State of Texas, Certificate  
13 No. 34127.

14 As a power system analysis engineer with NRC, my  
15 responsibilities include the following:

- 16 1. Investigation, analysis and evaluation of electric  
17 power supply planning, operations, and coordinating  
18 activities of applicants for nuclear facility licenses
- 19 2. In connection with certain applications noticed for  
20 antitrust hearings, prehearing preparations including  
21 examination of discovery documents and assistance in  
22 evidentiary hearings.

23 3. Q. What is the scope of your testimony?

24 A. I describe the physical and electrical characteristics of  
25 each of the Applicant's systems in terms of 1973 installed

1 generating capacity, actual electric generation and  
2 transmission of 66 kilovolts (kV) or greater. I also  
3 describe the nature of certain contractual relationships  
4 existing between each of the Applicants and the other  
5 electric entities situated in the respective Applicant's  
6 geographical area. I refer to those other entities in the  
7 Applicants' service territories, (taken collectively) as  
8 the non-Applicant entities and to the combined territories  
9 of the Applicants as the Combined CAPCO Company Territory  
10 (CCCT).

11 4. Q. What sources of information have you used in preparing your  
12 testimony?

13 A. I have relied on public documents filed by the Applicants  
14 with the Federal Power Commission (FPC), namely Forms 1 and  
15 '12, for the year 1973 and contracts and/or rate schedules  
16 filed with the FPC. In addition, I have used materials  
17 supplied the Nuclear Regulatory Commission by Applicants in  
18 the Construction Permit Applications for the various nuclear  
19 plants, material produced by Applicants during the discover  
20 phase of this proceeding, as well as technical engineering  
21 data supplied to Staff by non-Applicant municipal entities  
22 concerning the electric systems of such entities.

23 5. Q. Have you prepared an exhibit depicting the geographic  
24 relationships among the Applicants and between the Applicant  
25 and the non-Applicant entities?

- 1 A. Yes, Exhibit NRC 101 is a map produced by the Cleveland  
2 Electric Illuminating Company in response to Q.8 in the  
3 Information Required by the Attorney General submitted as  
4 part of the application for a construction permit for the  
5 Perry Nuclear Power Plant. The map indicates that it was  
6 prepared by the Duquesne Light Company. I have indicated  
7 by red dividing lines the borders of each of the Applicants  
8 in this proceeding. I have also shown on this map using  
9 colored dots the approximate geographical locations of each  
10 of the non-Applicant municipal entities. The rural electric  
11 cooperative entities are not so shown because they are  
12 individually dispersed over a relatively large area and  
13 have many points of delivery service.
- 14 6. Q. Looking first at Cleveland Electric Illuminating Company  
15 (CEI), would you describe the electrical parameters of its  
16 bulk power system?
- 17 A. CEI is an electric utility serving generally in the area  
18 shown on Exhibit NRC 101. As a part of my testimony I have  
19 prepared Exhibit JDG-5 which includes, among other things,  
20 data describing the installed capacity in MW, electric  
21 generation in MWh and transmission line mileages, for the  
22 year 1973, for all Applicants.
- 23 7. Q. As to the geographical areas in which CEI serves, are there  
24 other electric entities selling power at retail within the  
25 area bounded by CEI's geographical boundary?

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A. Yes, the City of Painesville and the City of Cleveland operate municipal electric systems in this area. My Exhibit JDG-1 describes electrical characteristics of the electric systems of these cities.

8. Q. Are you aware of any contractual relationships existing between CEI and either Painesville or Cleveland?

A. Yes, I know that CEI and Painesville signed and executed an interconnection agreement on January 13, 1975, but to my knowledge a physical interconnection between CEI and Painesville does not exist at this time. I also know that an interconnection agreement was signed and executed between CEI and Cleveland on April 17, 1975 and that these parties are presently operating in parallel pursuant to the terms of the agreement. Those contracts are contained in Exhibit NRC 234 and 235.

9. Q. Are you prepared to discuss the various provisions contained in either of the interconnection agreements referred to in your answer to Q.8?

A. No. It is my understanding that witness Mozer has familiarized himself with these agreements, among others, and is prepared to address himself to their provisions.

10. Q. Can you now describe the electrical parameters of Ohio Edison Company's (OE) bulk power system?

A. OE is an electric utility serving generally in the areas shown on Exhibit NRC 101., and data are contained in my



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Exhibit JDG-5 describing its electric system.

11. Q. As to the geographical areas served by OE, are there other electric entities selling electric power at retail within the area bounded by OE's geographical boundary?

A. Yes. According to OE's response to Q.9 of the Information Required by the Attorney General submitted as part of the application for Perry Nuclear Power Plant, there are 31 such electric systems, 24 of which are municipal systems, located within the area so described. The municipal systems are listed and described on my Exhibit JDG-2 and located on Exhibit NRC 101. The remaining systems consisting of 7 Distribution Rural Electric Cooperatives which are listed on Exhibit JDG-2 but are not located on Exhibit NRC 101.

12. Q. Do you have knowledge of the source of power supply for each of the electric entities referred to in your response to Q.11?

A. Yes, according to the FPC Form 1 supplied to the FPC by OE for the year 1973, OE served all but 5 of the municipal systems at "full requirements wholesale," that is, they purchase all their power requirements from OE. Of those remaining 5 municipals, Oberlin purchased partial requirements from OE. East Palestine, Newton Falls and Orrville operated independently with isolated self-generation to supply their full requirements. The remaining municipal, Marshallville, purchased its full requirements from the

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Orrville municipal system. Concerning the rural electric cooperatives, it is my understanding that they purchase their full requirements from Buckeye Power, Inc. and the power is delivered to the cooperatives by OE pursuant to an agreement reached between OE and Ohio Power.

13. Q. Do the municipals purchasing full or partial requirements wholesale power from OE do so under a contract with OE?

A. Yes, each municipal has a contract which has been filed with the FPC. Exhibits NRC 102 through 121 contain each of these filed contracts.

14. Q. Are you familiar with the terms, conditions and services provided for in these contracts?

A. I am generally familiar with them.

15. Q. Could you describe the provisions of a typical one of these contracts?

A. Using the contract between OE and City of Amherst as an example (Exhibit NRC 102), I find the following provisions. The contract was entered into on December 30, 1965 and provides for electric service from OE to be delivered at 69,000 volts. The term of the contract is 10 years with a 2 year notice of cancellation right to either party. Other provisions include specification of the point of delivery, adjustment of billing dates and incorporation of the applicable rate schedule by reference.

16. Q. Are there any significant differences between the Amherst

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contract and contracts between OE and its other municipal customers?

A. No. there are no significant differences. As could be expected the contracts in some instances specify different dates and service voltages. However, I could find no substantive differences between any of these contracts and the previously discussed Amherst contract.

17. Q. Have you examined the agreement between OE and the Ohio Power Company (OP) providing for the delivery of power to the cooperatives?

A. No. I am aware in a general nature of its existence sufficient to identify the contract as pertaining to a bulk power relationship between OE and OP. It is my understanding that witness Mozer has examined this contract and will discuss its content.

18. Q. Turning now to the Pennsylvania Power Company, can you describe the electrical parameters of its bulk power system?

A. Pennsylvania Power Company (PP) is an electric utility serving generally in the area shown on Exhibit NRC 101. My Exhibit JDG-5 contains data for PP similar to that discussed in my response to Q.6.

19. Q. As to the area served by PP, are there other electric entities selling power at retail in the area bounded by PP's geographical boundaries?

- 1 A. Yes, according to PP's response to Q.9 of the Information  
2 Requested by the Attorney General submitted as part of the  
3 application for Perry Nuclear Power Plant, there are 5  
4 municipals operating electric systems within this area.  
5 These are Wampum, Zelienople, New Wilmington, Grove City  
6 and Ellwood City, all of which are located in Pennsylvania.
- 7 20. Q. Do you know how these municipalities obtain their bulk  
8 power supply?
- 9 A. Yes, according to Form 1 of PP's 1973 submittal to the FPC,  
10 they are all served by PP under a full requirements whole-  
11 sale power contract.
- 12 21. Q. Are you familiar with the terms, conditions and services  
13 provided for in these contracts?
- 14 A. I am generally familiar with the provisions of these  
15 contracts. The contracts are shown under Exhibits NRC 122  
16 through 126.
- 17 22. Q. Could you summarize the provisions of a typical one of  
18 these contracts?
- 19 A. Using the contract between PP and the Borough of Grove City  
20 as an example, (Exhibit NRC 123), the contract and its  
21 provisions can be summarized as follows. The contract is  
22 dated May 1, 1967 and provides for a term of 10 years with  
23 a bilateral right of cancellation after giving two years  
24 notice. Other paragraphs provide for such things as  
25 metering accuracy, point of service, location of meters,

1 mutual indemnification of any claims or charges brought by  
2 a third party, and proper phase balancing by customers of  
3 the municipal system. In addition it is important to note  
4 that paragraph 5, page 2 provides:

5 "Except with the written consent of the Company,  
6 service furnished hereunder shall not be resold for use at  
7 any premises now or hereafter being furnished electric  
8 service directly by the Company. Except with the written  
9 consent of the Municipality or upon the order of a public  
10 authority having jurisdiction, the Company will provide no  
11 direct service for use at any premises now or hereafter  
12 being furnished electric service directly by the Municipali  
13 Any request from the Company or the Municipality for the  
14 consent of the other to serve premises now or hereafter  
15 being served by the other shall be in writing. The Company  
16 or the Municipality shall respond in writing within 15 days  
17 after receipt of such request. If no response is made with  
18 such period, consent shall be presumed given."

19 23. Q. Have you examined the contracts between PP and the other  
20 four municipalities mentioned in your response to Q.19?

21 A. Yes.

22 24. Q. Are there significant differences between any of these and  
23 the one between PP and the Borough of Grove City?

24 A. No, the contracts were essentially the same. One contract,  
25 Exhibit NRC 122 (Ellwood City) contains an attachment of

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waivers by PP allowing Ellwood City to serve certain customers located in the Borough of Ellwood City which at that time were being served by PP.

25. Q. Have you prepared an exhibit showing the electrical characteristics of the five municipal entities served by PP?

A. Yes, these appear on my Exhibit JDG-3.

26. Q. Turning now to The Toledo Edison Company, can you describe the electrical characteristics of its bulk power system?

A. Toledo Edison Company (TE) is an electric utility serving generally in the area shown on Exhibit NRC 101. My Exhibit JDG-5 contains data for TE similar to that discussed in my response to Q.6.

27. Q. Turning now to the area served by TE, are there other electric entities selling power at retail in the area bounded by TE's geographical boundaries?

A. Yes, in 1973 there were 16 municipal electric systems and 5 distribution electric cooperatives serving at retail within this area.

28. Q. Do you know how these various entities obtain their bulk power supply?

A. Yes, of the municipal electric systems, 13 purchased full requirements from TE, two purchased partial requirements from TE and one purchased full requirements from the Bowling Green Municipal System. The cooperatives purchased their full requirements from Buckeye Power, Inc. and these

1 requirements are delivered to the cooperatives by TE  
2 pursuant to an agreement between TE, Buckeye Power Inc. and  
3 The Ohio Power Company.

4 29. Q. Are the municipals purchasing full or partial requirements  
5 from TE doing so under a contract?

6 A. Yes, the contracts are filed with the FPC and are contained  
7 in Exhibits NRC 127 through 141.

8 30. Q. Are you familiar with the terms, conditions and services  
9 provided for pursuant to these agreements?

10 A. Yes, I am generally familiar with the provisions of these  
11 contracts.

12 31. Q. Could you summarize the provisions of a typical one of  
13 these contracts?

14 A. Using the contract between TE and the Village of Woodville  
15 (Exhibit NRC 141) as an example, the contract provisions  
16 can be summarized as follows. The contract contains  
17 language similar to that discussed previously in reference  
18 to contracts between the other Applicants and their whole-  
19 sale customers. There is also a noteworthy provision  
20 (Paragraph 8, page 2), which provides:

21 "The Edison Company agrees that they will not; without  
22 the written consent of the Village, or by order of a duly  
23 constituted public authority; furnish service to: (a) any  
24 premises now receiving electric service from the Village,  
25 or, (b) any premises located within the corporate limits of

1 the Village as they exist as of the date of this contract,  
2 except those customers or premises which are now serviced  
3 from the present lines of the Edison Company.

4 Any request by the Edison Company for the consent of the  
5 Village to serve any premises shall be in writing. The  
6 Village shall respond in writing within fifteen (15) days  
7 after receiving such request. If there is no response  
8 within this period, it will be assumed that consent has  
9 been given.

10 The Village agrees that they will not, without the  
11 written consent of the Edison Company, supply electric  
12 energy (a) for resale to customers located outside the  
13 present corporate limits of the Village, except those  
14 customers which are now serviced from the present lines,  
15 (b) for use at any premises now being furnished electric  
16 service directly by the Company, (c) for use at any premises  
17 located outside the corporate limits of the Village as they  
18 exist as of the date of this contract, and not being  
19 supplied electric service by the Village on such date,  
20 except those premises which can be served by the secondary  
21 distribution facilities of the Village without the extension  
22 of its present primary distribution facilities. Any request  
23 by the Village for the consent of the Edison Company to  
24 serve any premises shall be in writing. The Edison Company  
25 shall respond in writing within fifteen (15) days after



1 receiving such request. If there is no response within  
2 this period, it will be assumed that consent has been  
3 given.

4 However, the parties hereto recognize that the Village  
5 may, under applicable provisions of Ohio law, serve customers  
6 in any annexed territory requesting such electric service."

7 32. Q. Have you examined the contracts between TE and the other  
8 municipalities mentioned in your response to Q.28?

9 A. Yes.

10 33. Q. Are there significant differences between any of these and  
11 the one between TE and the Village of Woodville?

12 A. For the most part, no. The contracts may vary slightly due  
13 to minor language differences reflecting the fact that the  
14 contracts were not all written at the same time. There  
15 does exist, however, a distinctly different type of contract  
16 pursuant to which partial requirements service was supplied  
17 to the cities of Napoleon and Bryan.

18 34. Q. How do the contracts with Napoleon and Bryan differ from  
19 the contract with Woodville?

20 A. The contracts with Napoleon and Bryan (Exhibits NRC 137 &  
21 129) provide for and require a minimum demand of 1000 kVA  
22 and 300,000 kWh of energy to supplement the self-generation  
23 of these municipal systems. There is also a provision for  
24 "Emergency Service" which states that when an emergency  
25 situation exists which causes the Company to supply more

1 than that normally supplied, that excess shall be deemed to  
2 be "Emergency Service" and shall be billed under a prorated  
3 daily rate and the minimum energy delivery requirement will  
4 be waived. Also the contract with Napoleon and Bryan do  
5 not contain the prohibiting provision on service referred  
6 to my response to Q.31.

7 35. Q. Have you prepared an exhibit depicting the electrical  
8 characteristics of those entities referred to in your  
9 response to Q.27?

10 A. Yes, my Exhibit JDG-4 shows the relevant data for the  
11 individual municipals. The individual cooperative data do  
12 not appear because, as stated previously, their full  
13 requirements are obtained from sources outside TE's system  
14 and because load data were not available on an individual  
15 basis.

16 36. Q. Are you aware of an affidavit of William M. Lewis, Jr.,  
17 subscribed and sworn January 19, 1973?

18 A. Yes, it is identified as Exhibit NRC 143.

19 37. Q. In what context and in what forum did this affidavit first  
20 appear?

21 A. It was filed as Appendix A to a Petition to Intervene by  
22 the Cities of Bowling Green, Ohio, Bryan, Ohio and Napoleon  
23 Ohio, in a TE rate hearing before the Federal Power Com-  
24 mission, Docket No. E-7929.

25 38. Q. Have you reviewed the contents of this affidavit?

1 A. Yes.

2 39. Q. What is the general nature of the contents of the affidavit?

3 A. In the affidavit Mr. Lewis relates certain events which  
4 took place at 3 different meetings at which Mr. Lewis,  
5 representatives of the City of Napoleon, and representatives  
6 of TE were present. The meeting dates were September 2,  
7 1971, January 24, 1972, and March 6, 1972.

8 40. Q. What events does Mr. Lewis relate in the affidavit?

9 A. On the occasion of each meeting Mr. Lewis requested that TE  
10 establish a delivery point at Napoleon for the purpose of  
11 the Tri-County Cooperative selling supplemental power to  
12 the Napoleon municipal system. The Tri-County Cooperative  
13 is a member of Buckeye Power, Inc., has principal offices  
14 in Napoleon and sells power at retail in areas near the  
15 city of Napoleon.

16 41. Q. According to the affidavit, what were the responses of TE  
17 to these requests for the establishment of a delivery  
18 point?

19 A. The responses were consistently negative and can be sum-  
20 marized by a statement made by Mr. Cloer of TE and found on  
21 Page 4 of the affidavit. Mr. Cloer said, "We are not going  
22 to wheel power for you."

23 42. Q. Dr. Guy, are you aware of any other requests for TE to  
24 establish a delivery point for Tri-County Cooperative at  
25 Napoleon?

- 1 A. Yes, on May 2, 1973, Howard Cummins, Executive Manager of  
2 Buckeye Power, Inc., on behalf of Tri-County and Napoleon,  
3 requested in a letter to Mr. Marvin Keck (Chief, System  
4 Development Engineer, TE) that TE establish a delivery point  
5 at Napoleon. The letter containing this request is identified  
6 as Exhibit NRC 144.
- 7 43. Q. Are you aware of any response by TE to this request?  
8 A. Yes, in a letter from Mr. Keck to Mr. Cummins dated May 23,  
9 1973 and identified as Exhibit NRC 145, Mr. Keck indicated  
10 that the delivery point could be established assuming Napoleon  
11 would disconnect from TE and operate on an isolated self-  
12 sustaining basis for 90 days.
- 13 44. Q. Did Napoleon ever seek to have TE waive the 90 day require-  
14 ment?  
15 A. Yes, in a letter from Mr. M. R. Dorsey, Manager of Utilities  
16 City of Napoleon to Mr. John Cloer, Toledo Edison Company,  
17 dated July 16, 1973, Mr. Dorsey requested a waiver on the  
18 basis that the requirement "is unnecessary, unreasonable and  
19 will cause inutile hardship on the City of Napoleon." This  
20 letter is identified as Exhibit NRC 146.
- 21 45. Q. Was there a response to the request?  
22 A. In a letter dated July 19, 1973 and identified as Exhibit  
23 NRC 147, Mr. Cloer responded negatively to Mr. Dorsey's  
24 request.
- 25 46. Q. Did Napoleon disconnect from TE for the 90 days pursuant

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to the requirement?

A. No, on the eve of the disconnection period, Napoleon apparently decided to continue receiving service from TE.

47. Q. Do you know why this action was taken by Napoleon?

A. According to a newspaper account, Exhibit NRC 148, apparently published sometimes between August 21, 1973 and August 31, 1973, Mr. Dorsey was quoted as saying that the disconnection had been delayed indefinitely because (1) a record heat wave had taxed the capacity of the municipal system and (2) TE had reduced their proposed rate increase from 32% to 16%.

48. Q. Do you know if Napoleon subsequently disconnected from TE?

A. It is my understanding that Napoleon has not disconnected from TE to this time and has instead chosen to purchase their full power requirements from TE.

49. Q. Turning now to Duquesne Light Company, can you describe the electrical parameters of its bulk power system?

A. Duquesne Light Company (DL) is an electric utility serving generally in the area shown on Exhibit NRC 101. My Exhibit JDG-5 contains data for DL similar to that discussed in my response to Q.6.

50. Q. As to the areas served by DL, are there other electric entities selling power at retail in the area bounded by DL's geographical boundaries?

A. Yes, there is one municipality, the Borough of Pitcairn, operating an electric system within this area.

1 51. Q. Do you know how Pitcairn obtains its bulk power supply?

2 A. Yes, according to DL's 1973 FPC Form 1, Acct No. 447, the  
3 bulk power supply for Pitcairn is supplied by DL pursuant  
4 to a contract filed with the FPC, shown in Exhibit NRC 142.

5 52. Q. Are you familiar with the terms, conditions and services  
6 provided for in this contract?

7 A. I am generally familiar with the provisions of this contract.

8 53. Q. Could you summarize its provisions?

9 A. Because this contract was a result of a negotiated settlement  
10 of a 1971 private civil antitrust action in the U.S. District  
11 Court for the Western District of Pennsylvania, it is  
12 entitled a Settlement Agreement and contains various recitals  
13 pertaining to the settlement of the suit. The Appendix 1  
14 of the Agreement contains the terms and conditions of  
15 service to be provided by DL, and contains one service  
16 schedule providing for bulk power for resale. The term of  
17 the agreement is initially 3 yrs from the date of execution  
18 on October 13, 1971 with a year to year extension after  
19 that term. The precise language is

20 "This Contract shall continue in force for three years  
21 from the effective date of the Rate Schedule filed with the  
22 Federal Power Commission, in connection with this contract  
23 as provided under the rules and regulations of the Federal  
24 Power Commission, and thereafter from year to year until  
25 thirty (30) days' notice in writing to terminate this

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contract as of the end of any Contract year on an anniversary date thereof."

54. Q. Did you prepare an exhibit showing the relevant electrical and geographical characteristics of the Pitcairn System?

A. No, because there was only one system. In 1973, Pitcairn had an electrical demand of approximately 2000 kW, had no installed capacity, had no generation and had no transmission lines of 66 kV or higher.

ELECTRIC ENTITIES LOCATED WITHIN  
CLEVELAND ELECTRIC ILLUMINATING'S GEOGRAPHIC AREA

1973

<u>Municipal</u>	<u>Maximum Electrical Demand (kW)</u>	<u>Net System Dependable Capacity (kW)</u>	<u>Net System Generation (kWh)</u>	<u>Transmission Mileage [66 kV and above]</u>
Cleveland, Ohio*	111,750 <sup>(a)</sup>	193,600 <sup>(a)</sup>	476,733,200 <sup>(a)</sup>	21 <sup>(d)</sup>
Painesville, Ohio*	25,000 <sup>(b)</sup>	38,000 <sup>(b)</sup>	133,895,000 <sup>(c)</sup>	0 <sup>(e)</sup>
Totals	<u>126,750</u>	<u>231,600</u>	<u>610,628,200</u>	<u>21</u>

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\*Self-Generating Systems

- Sources: (a) City of Cleveland's 1973 FPC Form 12, Schedules 13, 16 and 14 respectively.  
 (b) Personal Correspondence From C.E. Cannon, Painesville to B.H. Vogler, NRC  
 (c) 1974-75 Electrical World Directory of Electrical Utilities, page 624.  
 (d) Phone Correspondence between G. Pofok, Cleveland and R. Meister, NRC  
 (e) Phone Correspondence between J. Pandy, Painesville and R. Meister, NRC



ELECTRIC ENTITIES LOCATED WITHIN OHIO EDISON CO'S GEOGRAPHICAL AREA

1973

<u>Electric Entity</u>	<u>Maximum Electrical Demand (kW) (a)</u>	<u>Net System Dependable Capacity (kW) (i)</u>	<u>Net System Generation (kWh) (i)</u>	<u>Transmission Mileage [66kV &amp; above] (i)</u>
<u>Municipals<sup>3/</sup></u>				
Amherst	9,330	0	0	0 (h)
Beach City	1,098	0	0	0
Brewster	1,826	0	0	0
Columbiana	4,680	0	0	0 (h)
Cuyahoga Falls,	55,095	0	0	0 (h)
East Palestine <sup>2/</sup>	6,200 (c)	16,500 (b)	30,478,000 (d)	0
Galion	20,280	0	0	0 (h)
Grafton	1,488	0	0	0
Hubbard	6,880	0	0	0 (h)
Hudson	13,149	0	0	0
Lodi	3,459	0	0	0
Lucas	572	0	0	0
Marshallville <sup>4/</sup>	580	0	0	0
Milan	4,740	0	0	0
23 Monroeville	2,551	0	0	0
Newton Falls <sup>2/</sup>	4,060 (e)	8,273 (e)	19,977,580 (e)	0
Niles	32,520	0	0	0 (h)
Oberlin <sup>1/</sup>	11,388 (f)	12,873 (f)	39,019,900 (f)	0 (h)
Orrville <sup>2/</sup>	27,500 (g)	39,200 (g)	132,758,640 (g)	0 (h)
Prospect	1,268	0	0	0
Seville	2,451	0	0	0
South Vienna	480	0	0	0
Wadsworth	19,087	0	0	7 (h)
Wellington	7,763	0	0	0 (h)
Municipal Totals	<u>238,225</u>	<u>76,846</u>	<u>222,234,120</u>	<u>7</u>
<u>Distribution Cooperatives</u>				
Delaware				
Firelands				
Hancock-Wood				
Holmes-Wayne	76,000 (a)	0	0	0
Lorain-Medina				
Marion				
Morrow				
GRAND TOTALS	<u>314,225</u>	<u>76,846</u>	<u>222,234,120</u>	<u>7</u>

Note: See Exhibit JDG-2b for footnotes

- 1/ Partial requirements customer of Ohio Edison
- 2/ Self-Generating Entity
- 3/ All municipals are located in the state of Ohio
- 4/ Served by City of Orrville, Demand data obtained from Orrville's 1973 FPC Form 12, Schedule 16.

- Sources:
- (a) Ohio Edison's 1973 FPC Form 1, Sales for Resale (Acct. 447), page 412.
  - (b) East Palestine's 1972 FPC Form 12, Schedule 1, Page 2, column (10).
  - (c) Based on East Palestine's 1972 FPC Form 12 data. 1972 peak, from Schedule 13 - 6,000 kW, multiplied by the estimated rate of load growth, from Schedule 19 - 4% rounded to the nearest 100 Kilowatts.
  - (d) Based on East Palestine's 1972 FPC Form 12 data. 1972 total net system generation - 29,305,800 Kwhrs, multiplied by the estimated rate of load growth, from Schedule 19 - 4%, rounded to the nearest 100 kWh.
  - (e) Newton Falls' 1973 FPC Form 12, Schedules 1 and 14.
  - (f) Oberlin's 1973 FPC Form 12, Schedules 14 and 16.
  - (g) Orrville's 1973 FPC Form 12, Schedules 13, 16 and 14 respectively.
  - (h) Phone Correspondence between entity representative and R. Meister, NRC
  - (i) 1974-75 Electric World, Directory of Electric Utilities, pages 615-628.

ELECTRIC ENTITIES LOCATED WITHIN  
PENNSYLVANIA POWER CO'S GEOGRAPHIC AREA

1973

<u>Municipal</u>	<u>Maximum Electrical Demand (kW) (a)</u>	<u>Net System Dependable Capacity (kW) (b)</u>	<u>Net System Generation (kWh) (b)</u>	<u>Transmission Mileage [66 kV and above] (b)</u>
Ellwood City, Penn.	8,616	0	0	0 (c)
Grove City, Penn.	6,408	0	0	0 (c)
New Wilmington, Penn.	2,192	0	0	N.A.
Wampum, Penn.	576	0	0	0
Zelienople, Penn.	3,104	0	0	0
	<hr/>	<hr/>	<hr/>	<hr/>
Totals	20,896	0	0	0

Sources: (a) Pennsylvania Power Co's. 1973 FPC Form 1, Sales for Resale (Acct. 447), page 412.  
 (b) 1974-75 Electrical World, Directory of Electric Utilities, page 686  
 (c) Phone correspondence between entity representative and R. Meister, NRC.

ELECTRIC ENTITIES LOCATED WITHIN TOLEDO EDISON CO'S GEOGRAPHIC AREA

1973

<u>Electric Entity</u>	<u>Maximum Electrical Demand (kW) (a)</u>	<u>Net System Dependable Capacity (kW) (c)</u>	<u>Net System Generation (kWh) (c)</u>	<u>Transmission Mileage [66kV &amp; above] (c)</u>
<u>Municipals<sup>1/</sup></u>				
Bowling Green	37,071	0	0	4 (d)
Bradner	898	0	0	0
Bryan <sup>2/</sup>	22,300 (b)	23,750 (b)	40,917,400 (b)	0 (d)
Custar	510	0	0	0
Edgerton	2,845	0	0	0
Elmore	1,232	0	0	0
Genoa	2,256	0	0	0
Haskins	359	0	0	0
Liberty Center	993	0	0	0
Montpelier	6,230	0	0	0 (d)
Napoleon <sup>2/</sup>	17,400 (b)	17,500 (b)	59,052,100 (b)	0 (d)
Oak Harbor	2,807	0	0	0
Pemberville	1,949	0	0	0 (d)
Pioneer	1,218	0	0	0
Tontogany <sup>3/</sup>	N.A.	0	0	0
Woodville	1,731	0	0	0
<b>Municipal Totals</b>	<b>99,799</b>	<b>41,250</b>	<b>99,969,500</b>	<b>4</b>
<u>Distribution Cooperatives</u>				
Hancock-Wood Southeastern Mich.	10,400 (e)	0	0	0
Tri-County Northwestern North Central	31,560 (f)			
<b>Grand Totals</b>	<b>141,759</b>	<b>41,250</b>	<b>99,969,500</b>	<b>4</b>

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- 1/ All are located in the State of Ohio.
- 2/ Partial Requirements customer of Toledo Edison Company
- 3/ Served by Bowling Green Municipal System

- Sources:
- (a) 1973 TE FPC Form 1, Sales for Resale (Acct. 477).  
Page 412.
  - (b) 1973 FPC Form 12, Schedules 14 and 16 for each entity.
  - (c) 1974-75 Electrical World, Directory of Electric  
Utilities, pages 615-628.
  - (d) Phone Correspondence between entity representative  
and R. Meister, NRC.
  - (e) Demand calculated from energy figures given in  
Toledo Edison 1973 Form 1, Sales for Resale  
(Acct. 477) Pages 412 and 413.
  - (f) Demand calculated from energy figures given in Buckeye  
Power Inc. 1973 Form 12, Schedule 8, Page 20(e).

STRUCTURAL DATA

	<u>Net Dependable Capacity</u>		<u>Net Generation</u>		<u>Transmission [66kV and above]</u>	
	<u>MW(a)</u>	<u>%</u>	<u>MWh(a)</u>	<u>%</u>	<u>pole-miles(b)</u>	<u>%</u>
CEI	3896	94.4	17,326,640	96.6	632	96.8
Others (d)	232	5.6	610,628	3.4	21	3.2
	<u>4128</u>	<u>100.0</u>	<u>17,937,268</u>	<u>100.0</u>	<u>653</u>	<u>100.0</u>
OE	3658	97.9	18,285,054	98.8	2795	99.8
Others (d)	77	2.1	222,235	1.2	7	.2
	<u>3735</u>	<u>100.0</u>	<u>18,507,289</u>	<u>100.0</u>	<u>2802</u>	<u>100.0</u>
TE	1045	96.1	5,376,325	98.2	493	99.2
Others (d)	42	3.9	99,969	1.8	4	0.8
	<u>1087</u>	<u>100.0</u>	<u>5,476,294</u>	<u>100.0</u>	<u>497</u>	<u>100.0</u>
DL	2528	100	12,978,538	100	380	100
Others (d)	0	0	0	0	0	0
	<u>2528</u>	<u>100.0</u>	<u>12,978,538</u>	<u>100.0</u>	<u>380</u>	<u>100.0</u>
PP	608	100	2,830,947	100	453	100
Others (d)	0	0	0	0	0	0
	<u>608</u>	<u>100.0</u>	<u>2,830,947</u>	<u>100.0</u>	<u>453</u>	<u>100.0</u>
CAPCO(c)	11735	97.1	56,797,504	98.4	4753	99.3
Others	351	2.9	932,832	1.6	32	.7
	<u>12086</u>	<u>100.0</u>	<u>57,730,336</u>	<u>100.0</u>	<u>4785</u>	<u>100.0</u>

Sources: (a) 1973 FPC Form 12, Schedules 16 and 14, for each Applicant  
(b) 1973 FPC Form 1, page 442, for each Applicant  
(c) Summations of Data given for each Applicant  
(d) Taken from Exhibits JDG 1, 2, 3 and 4 and response to Q.54 of my testimony.