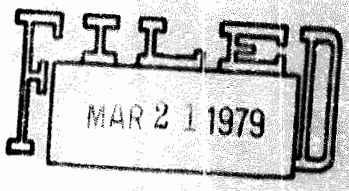
BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of the Application of)
UNION ELECTRIC COMPANY for permission)
and authority to construct, operate) Case No. EA-79-119
and maintain two combustion turbine)
generating units in the State of)
Missouri.)



ANSWERS OF UNION ELECTRIC COMPANY
TO INTERROGATORIES OF PUBLIC COUNSEL

1. See Attachment #1. Please note that Company data has been furnished in lieu of Native System data, which is not available at this time; however, the two are nearly identical.

2. The information requested is not available on a Missouri electric retail jurisdictional basis.

3. See Attachment #2.

4. The information requested is not available on a Missouri electric retail jurisdictional basis.

   The answers to questions 5, 6, 7, 8 and 9 do not include data on a Missouri electric retail jurisdictional basis, which is unavailable. The numbers are net native integrated system (MW). Since the peak forecast is based on normal weather, the projected temperature corrected peak demand and the projected peak load demand are equal. The peak forecast is rounded to the nearest 10 MW. In answer #8, the forecast for 1977-1986 was prepared in February 1977.

		1976	1977	1978
5. a.	Base load	2770	2917	2925
b.	Heat sensitive	2510	2583	2685
c.	Temp. corrected peak	5280	5500	5610
d.	Actual peak	5236	5476	5474
		1979	**1980**	**1981**
6. a.	Projected base load	3030	3145	3268
b.	Projected heat sensitive	2766	2846	2929
c.&d.	Peak demand forecast	5800	5990	6200
7. a.	Projected base load	3167	3301	3439
b.	Projected heat sensitive	2754	2840	2928
c.&d.	Peak demand forecast	5920	6140	6370
8. a.	Projected base load	3195	3329	3469
b.	Projected heat sensitive	2794	2889	2986
c.&d.	Peak demand forecast	5990	6220	6460
9. a.	Projected base load	3344	3550	3788
b.	Projected heat sensitive	3119	3238	3362
c.&d.	Peak demand forecast	6460	6790	7150

10. The UE temperature correction process is designed to determine the expected load at an 88° two-day weighted temperature. It is performed for each summer by plotting weekday peak loads against the corresponding two-day weighted temperature. A curve is drawn through the points and, if necessary, extrapolated to 88°. The 88° is based on analysis of historical data, which shows that 88° was achieved or exceeded in 50% of the summers. Also, the curve shape is checked with curve shapes from past summers and with various computer analyses.

11. Following is a definition of the term "all time native system net integrated hour peak demand" as used on page 3 of Company's amended application. "All time" in this context refers to the highest value ever experienced. "Native system" is defined to include Union Electric Company and subsidiary loads except for some relatively small service areas which are routinely served by contractual arrangements with others. "Net" excludes use by Company generating stations. "Integrated hour" refers to the average during a 1-hour period. "Peak" refers to the highest value during a given time period; in this case, all time is included. "Demand" refers to the electric load which is measured in megawatts in this instance.

12. a. 1976 6481 MW
1977 6643 MW
1978 6609 MW

b. 1976:

Labadie	Keokuk
Sioux	Taum Sauk
Rush Island	Venice CT
Meramec	Howard Bend CT
Cahokia	Meramec CT
Ashley	Missouri Power & Light
Venice	Missouri Utilities
Osage	Joppa

1977: Same as 1976 - minus Cahokia.

1978: Same as 1977 - plus Mexico,* Moreau and Moberly CTs.

* Mexico CT was not released for commercial operation until after the 1978 peak.

13.

		a.)	b.)	c.)	d.)
1976	Labadie	2300	Base	8784	12,434,608,000
	Sioux	904	"	7795	4,207,307,000
	Rush Island	575	"	6315	2,602,780,000
	Meramec	881	Inter	8784	4,134,897,000
	Cahokia	122	Peak	322	20,200,000
	Ashley	69	"	333	-1,094,900
	Venice	442	Inter-Peak	7544	728,950,100
	Osage	212	Peak	5488	268,319,600
	Keokuk	119	Base	8784	632,522,000
	Taum Sauk	300	Peak	805	114,393,800
	Venice CT	25	"	85	1,244,200
	Howard Bend CT	43	"	169	4,969,000
	Meramec CT	55	"	30	3,254,800
	Joppa	310	Inter	NA	801,700,241 *
	M.P.&L.	97	Peak	NA	18,751,758
	M.U.	27	"	NA	282,240

* Kwhrs received from Joppa (EEInc.)

13. (Contd.)

		a.)	b.)	c.)	d.)
1977	Labadie	2220	Base	8760	11,597,951,000
	Sioux	904	"	8416	4,406,569,000
	Rush Island	1150	"	8661	5,926,550,000
	Meramec	880	Inter	8760	3,732,102,000
	Ashley	69	Peak	772	8,054,500
	Venice	231	Inter-Peak	3594	425,307,700
	Osage	212	Peak	5718	300,638,700
	Keokuk	119	Base	8760	770,234,200
	Taum Sauk	300	Peak	835	125,766,200
	Venice CT	25	"	315	5,695,000
	Howard Bend CT	43	"	396	11,744,000
	Meramec CT	55	"	554	15,098,160
	Joppa	310	Inter	NA	810,821,974 *
	M.P.&L.	98	Peak	NA	24,227,565
	M.U.	27	"	NA	750,340
1978	Labadie	2220	Base	8760	12,044,355,000
	Sioux	904	"	7872	3,831,441,000
	Rush Island	1150	"	8621	6,140,995,000
	Meramec	881	Inter	8760	3,260,354,000
	Ashley	69	Peak	495	-513,300
	Venice	232	Inter-Peak	2368	293,646,700
	Osage	210	Peak	6408	407,370,300
	Keokuk	119	Base	8760	912,832,200
	Taum Sauk	300	Peak	340	43,179,900
	Venice CT	25	"	236	3,998,400
	Howard Bend CT	43	"	311	8,650,000
	Meramec CT	55	"	302	12,012,000
	Mexico CT	55	"	132	4,559,276
	Moberly CT	55	"	191	6,658,575
	Moreau CT	55	"	150	5,707,714
	Joppa	110	Inter	NA	331,883,468 *
	M.P.&L.	99	Peak	NA	12,302,457
	M.U.	27	"	NA	1,318,700

* Kwhrs received from Joppa (EEInc.)

14. The answers are essentially the same as those listed in the answers to interrogatory 13 for 1978, except that Meramec capacity is reduced by 145 MW and Labadie capacity is reduced by 275 MW.

15. and 16.

	15b	15a, 16a	16b	16c	16d
1979	Labadie	2120	Base	8760	11,932 x 10^6
	Sioux	904	"	7920	4,327 x 10^6
	Rush Island	1150	"	8760	5,897 x 10^6
	Meramec	735	Inter	8760	3,210 x 10^6
	Ashley	69	Peak	127	9 x 10^6
	Venice	441	Inter-Peak	998	370 x 10^6
	Osage	212	Peak	2826	438 x 10^6
	Keokuk	119	Base	8760	806 x 10^6
	Taum Sauk	300	Peak	442	77 x 10^6
	Venice CT	25	"		
	Howard Bend CT	43	"		
	Meramec CT	55	"	$\sum$ 406 *	60 x 10^6 *
	Mexico CT	55	"		
	Moberly CT	55	"		
	Moreau CT	55	"		
	M.P.&L.	98	"		
	M.U.	27	"		
	Joppa	110	Inter	NA	385 x 10^6

15. and 16. (Contd)

	15b	15a, 16a	16b	16c	16d
1980	Labadie	2120	Base	8784	$12,367 \times 10^6$
	Sioux	904	"	7728	$3,882 \times 10^6$
	Rush Island	1150	"	8448	$6,321 \times 10^6$
	Meramec	735	Inter	8784	$3,635 \times 10^6$
	Ashley	69	Peak	127	9×10^6
	Venice	441	Inter-Peak	998	440×10^6
	Osage	212	Peak	2850	440×10^6
	Keokuk	119	Base	8784	808×10^6
	Taum Sauk	300	Peak	159	28×10^6
	Venice CT	25	")		
	Howard Bend CT	43	")		
	Meramec CT #1	55	")		
	Meramec CT #3	51	")		
	Sioux CT	51	")	$\sum$ 406 *	70×10^6 *
	Mexico CT	55	")		
	Moberly CT	55	")		
	Moreau CT	55	")		
	M.P.&L.	98	")		
	M.U.	27	")		
	Joppa	110	Inter	NA	363×10^6
1981	Labadie	2120	Base	8760	$13,012 \times 10^6$
	Sioux	904	"	8068	$4,105 \times 10^6$
	Rush Island	1150	"	8592	$6,352 \times 10^6$
	Meramec	735	Inter	8760	$3,668 \times 10^6$
	Ashley	69	Peak	127	9×10^6
	Venice	441	Inter-Peak	998	440×10^6
	Osage	212	Peak	2881	438×10^6
	Keokuk	119	Base	8760	806×10^6
	Taum Sauk	300	Peak	402	70×10^6
	Venice CT	25	")		
	Howard Bend CT	43	")		
	Meramec CT #1	55	")		
	Meramec CT #3	51	")		
	Sioux CT	51	")	$\sum$ 406 *	75×10^6 *
	Mexico CT	55	")		
	Moberly CT	55	")		
	Moreau CT	55	")		
	M.P.&L.	77	")		
	M.U.	27	")		
	Joppa	110	Inter	NA	429×10^6

* This data is projected only on a composite basis.

17. a) Projected Fuel Costs: 1980 - 5.34¢/kWh
1981 - 6.00¢/kWh

b) Projected Maintenance Costs: 1980 - 0.61¢/kWh
1981 - 0.65¢/kWh

c) During 1980 and 1981 these units are expected to operate 200 to 400 hours per year; however, operation outside of this range is possible, depending on system operating conditions.

d) During 1980 and 1981 these units are expected to generate 10,200,000 kWhrs to 20,400,000 kWhrs per year; however, generation outside of this range is possible, depending on system operating conditions.

18. The source of the 1980 power purchase referenced on page 4 of the Amended Application is Electric Energy, Incorporated (EEInc). The purchase amounts and associated capacity charges are as follows:

1980	MW	Projected Capacity Charge $/MW
Jan	200	1,750
Feb	200	1,750
Mar	200	1,750
Apr	200	1,750
May	200	1,750
June	360	2,270
July	360	2,290
Aug	360	1,990
Sep	360	1,970
Oct	350	1,450
Nov	350	1,450
Dec	350	1,450

The projected 1980 kilowatthour usage is approximately 1,113,868,000 kWh. The projected average cost per kilowatthour is 15.3 mills, comprised of .8 mills for maintenance and 14.5 mills for fuel.

19. Union Electric Company analyzes feasible alternative capacity addition plans based on the discounted present worth of capital and operating expenditures. Various utility planning methods are utilized in the analysis, including generation simulation models and evaluation of system duration curves. The plans are reviewed for operability and financing constraints.

20. The Company's current method for allocating generating plant to Missouri retail electric operations is the "12 CP" method. That is, the ratio of the average demands of the Missouri ultimate consumers to the average system monthly demands (exclusive of interruptible, run-of-river and supplemental demands adjusted for losses) occurring at the time of Union Electric's 12 system monthly peaks. This is the same method as employed in all UE electric rate cases in all regulatory jurisdictions since at least 1968.

21. As of December 31, 1978 the total investment in generating property and plant was $987,690,392, of which $659,579,644 or 66.78% was allocable to Missouri retail operations.

22. This information is not available.

23. There are three basic reasons for the cost differences. First, the actual escalation rate of the equipment costs was higher than originally estimated. Secondly, the Sioux site requires additional site fill and fuel storage facilities that will not be required on the Meramec site. Thirdly, there are a number of additional costs incurred as a result of having two sites in lieu of one, such as installation and engineering costs.

24. The Powerplant and Industrial Fuel Use Act specifically makes provisions for the installation and operation of peaking type power plants such as the two combustion turbines that Union Electric is proposing to install in 1980. However, since the regulations for implementing the Powerplant and Industrial Fuel Use Act of 1978 have not been published in their final form, it would be premature at this point to attempt to enumerate the steps that Union Electric Company intends to take regarding these units. Union Electric has taken an active role in this rulemaking proceeding, in conjunction with the Edison Electric Institute and other utility companies, by supplying written and oral comments to the Economic Regulatory Administration (ERA).

25. The amount of construction time expected from initial site preparation until the unit is fully operational is 9 months for the Meramec unit and 12 months for the Sioux unit. Some generation from each of these units is expected during testing and start-up, prior to commercial operation.

UNION ELECTRIC COMPANY

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I hereby certify that copies of the foregoing Answers of Union Electric Company to Interrogatories of Public Counsel were mailed this 20th day of March, 1979, to:

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