DOE/IE-0003/1

Staff Report
Electric Power Supply and Demand for the Contiguous United States 1985-1994

May 1985

U.S. Department of Energy
Assistant Secretary for International Affairs
and Energy Emergencies

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memorandum

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DATE: MAY 3 1 1985

REPLY TO ATTN OF: IE-24

SUBJECT: "Electric Power Supply and Demand for the Contiguous United States 1985-1994"; Staff Report

TO: Barton R. House, IE-20

Attached is a copy of the staff report "Electric Power Supply and Demand for the Contiguous United States, 1985-1994". This report is based upon analysis of Form IE-411 data submitted in April 1985 by each of the nine regional councils of the North American Electric Reliability Council.

This annual staff report is used by the Office of Energy Emergencies in its analyses of the adequacy of national and regional electric power supply. The results of these analyses are compared to various industry reviews and are used in risk and reliability assessments, particularly in the national security and defense areas. This report is apparently used by many persons in the private sector since many requests for copies are received in addition to the initial distribution.

I am proud of the efforts of the personnel in this office who work on this project and will continue to seek ways in which to improve the effort.

Richard E. Weiner
Director
Office of Energy Emergency Operations

Attachment

ELECTRIC POWER SUPPLY AND DEMAND FOR THE CONTIGUOUS UNITED STATES 1985-1994

(report on TAPS disk under Introduction)

INTRODUCTION

This report reviews the bulk electric power supply and demand situation projected by the electric utility industry for the contiguous U.S. in the decade 1985-1994.

The review is based primarily on the April 1, 1985, Regional Reliability Council Coordinated Bulk Power Supply Program Reports (IE-411 reports) submitted to the Department of Energy by each of the nine Regional Electric Reliability Councils. Other sources of information have also been used. The first map in Appendix 1 shows the geographic areas covered by each council.

Six Council areas are subdivided into a total of 23 Regions to give a better understanding of the power supply situation. Three Council areas (ERCOT, MAAC and MAPP) are each considered as a single Electrical Region. Including the three councils considered as Regions, there are 26 Electric Regions discussed in this report. These Regions are shown on the second map in Appendix 1. Appendix 3 lists the utilities in each Region for which data are included in this report.

Brief discussions are provided for each Council and each Region, with tabulated data providing the quantitative basis for the analyses.

GENERAL CONCLUSIONS

1. The projected annual growth rate of electric power demand for the period 1985-1994 is little different from the growth rate projected a year earlier for the period 1984-1993.

2. The projected annual increase in generating capacity for the period 1985-1994 is less than that projected a year earlier for the period 1984-1993.

3. Bulk power supply in general, for the period 1985-1994, is projected to be adequate for meeting projected peak demands. While the DOE analysis indicates some potential for inadequate power supply in some Electric Regions, measures can be taken by the utilities affected to minimize the effect of such inadequacy.

4. Continued reliability of power supply depends upon adherence by the electric power industry to current schedules for the construction of new generating units and transmission facilities and the continued utilization of sound system operating practices by the electric utilities. System reliability could be adversely affected by unforeseen extreme weather conditions, or large-scale interruptions of fuel supplies.

5. Adequacy of power supply for meeting projected demands also depends on the accuracy of the peak load forecasts. Actual peak loads in excess of those currently forecast could cause power supply problems in some areas that now appear to have an adequate electric power supply.

6. Transmission system loading, on the average, for the U.S. as a whole, has doubled over the last 3 decades. The heavier loading of transmission to distribute lower-cost generation over larger areas may result in temporary service problems in some areas.

A. Contiguous United States Electric Power Projections

The projected growth rates of electric energy requirements and winter peak demand for the contiguous United States, for the period 1985-1994, are fractionally less than projected a year earlier 1/ for the period 1984-1993. The projected growth rate of summer peak demand is a trifling amount more than the year-earlier projection. Table A compares the April 1, 1984 projections with those of April 1, 1985. These data reflect summaries of the projections made by the nine councils for their individual areas. 2/ 3/

Table A - Electric Power Supply & Demand Contiguous U.S.

	10-Year Average Annual Percent Increase	
	Projected 4/1/85 For 1985-1994	Projected 4/1/84 For 1984-1993
Annual Energy Requirement	2.38	2.65
Summer Peak Demand	2.33	2.27
Winter Peak Demand	1.94	2.22
Summer Net Capability	1.65	1.77
Winter Net Capability	1.50	1.61

The growth rates shown in Table A are composites of the growth rates projected for the nine council areas in the contiguous U.S. Each council area's growth rates, in turn, reflect projections made by the individual electric utilities composing that council. 4/ Table A then reflects a general consensus among electric utilities that annual electric energy requirements and winter peak demand will grow during the next decade at a slightly smaller average annual rate than was forecast for each of these quantities a year earlier, while the summer peak demand projection is practically unchanged.

1/ Office of Energy Emergency Operations staff report "Electric Power Supply and Demand for the Contiguous United States 1984-1993," dated June 1984, page 3.

2/ See Map in Appendix 1.

3/ Approximately 95% of electric power supply and demand in the contiguous U.S. is reflected in the IE-411 Reports. The data for small systems, not included in those reports, would not significantly change the growth rate projections.

4/ These projections do not necessarily reflect the diversity in peak load of the electric utilities within a council. See Appendix 3 for the reporting utilities.

The average annual growth rate of generating capability is projected as being less than the growth rate of the demand for electricity, resulting in a gradual decrease of installed reserve margins during the next decade. While this decrease in reserve margin from 1985 to 1994 is large for the 7-Council interconnection as a whole, no resulting reliability problems attributable to lack of generating capacity, for that group, are foreseen by the DOE staff's analysis.

The installed reserve margins for WSCC and ERCOT do not change significantly during the study period, and no generating capacity problems appear evident.

Table B shows the growth rate of projected electric energy requirements by Reliability Council, and Table C shows the projected growth rate of summer peak demand for each Council area. Tables 1 through 7, at the end of this section, provide year-by-year projections of energy, peak demands, reserve margins and capacity margins for each Council area.

Table B - Growth of Net Energy Requirements
As Projected by the Regional Councils
In April 1984 and April 1985

Council	10-Year Average Annual Percent Increase Projected April 1, 1985 For 1985-1994	Projected April 1, 1984 For 1984-1993
ECAR	1.96	2.35
MAAC	1.68	1.63
MAIN	1.92	2.03
MAPP 1/	2.57	2.80
NPCC 1/	1.69	1.77
SERC	2.85	2.94
SPP	2.49	2.93
Sub-Average 2/	2.25	2.45
ERCOT	3.70	4.24
WSCC 1/	2.29	2.74
Overall Average 3/	2.38	2.65

Table B shows that each Council area except MAAC projects an average annual increase in energy requirements less than was projected a year earlier. MAAC projects a very minor increase.

1/, 2/, 3/ - See footnotes to Table C.

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Table C - Growth of Summer Peak Demands
As Projected by the Regional Councils
In April 1984 and April 1985

Council	10-Year Average Annual Percent Increase Projected April 1, 1985 For 1985-1994	Projected April 1, 1984 For 1984-1993
ECAR	2.12	1.85
MAAC	1.15	1.29
MAIN	1.42	1.48
MAPP 1/	2.54	2.55
NPCC 1/	1.76	1.58
SERC	2.78	2.30
SPP	2.69	2.54
Sub-Average 2/	2.20	2.00
ERCOT	3.59	4.13
WSCC 1/	2.26	2.52
Overall Average 3/	2.33	2.27

1/ U.S. portion only.

2/ This is the composite 10-yr. average growth rate of the sum of the peak demands of the seven Council areas that are strongly inter-connected. It is not the average of the growth rates of the seven Councils.

3/ This is the composite 10-yr. average growth rate of the sum of the peak demands of the 9 Councils in the contiguous U.S. It is not the average of the growth rates of the 9 Council areas.

The reporting schedule for the IE-411 reports allows sufficient time for obtaining the actual peak demand for summer of the year preceding the date of the report. However, the actual peak of the winter season does not necessarily occur in all areas prior to January 1 of the reporting year. For that reason, the winter "actual" peak reported in Item 1 may be less than the peak of January or February. ECAR and MAAC had winter peaks that occurred after the data in the 1985 IE-411 were processed. These larger, actual peaks have been incorporated in Tables 3, 6, and 7.

TABLE 1

ACTUAL AND PROJECTED GROWTH OF NET ANNUAL ENERGY REQUIREMENTS
AS REPORTED APRIL 1, 1985 BY THE REGIONAL ELECTRIC RELIABILITY COUNCILS 1/
CONTIGUOUS UNITED STATES

MEGAWATT-HOURS (000)

	ACTUAL 1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
ECAR 2/	383029	391000	397910	405360	416650	426220	433550	441630	449430	457130	465020
MAAC	186034	188274	191443	192725	196609	200431	204256	208105	211969	215810	219663
MAIN	170930	174550	177993	181313	184560	188077	191786	195528	199187	202899	206640
MAPP 3/	105378	109224	112458	114852	117819	120722	123872	126750	129750	132839	135780
NPCC 3/	216533	220705	225249	227790	231276	234176	237579	242091	247011	250851	255987
SERC	493916	517079	530580	544081	564095	579042	596754	610890	625694	639583	654286
SPP	226062	228628	233333	239117	245715	252709	259642	266594	274605	281812	288941
SUBTOTAL	1781882	1829460	1868966	1905238	1956724	2001377	2047439	2091588	2137646	2180924	2226317
ERCOT	185283	193347	199590	204543	212127	220366	229187	238149	247401	256875	266528
WSCC 3/	468937	476608	490553	504263	516154	526927	539604	551054	563913	575907	588150
U.S. TOTAL	2436102	2499415	2559109	2614044	2685005	2748670	2816230	2880791	2948960	3013706	3080995

ANNUAL PERCENT INCREASE OVER PRECEDING YEAR

												AVG. INCREASE 4/ (%)
ECAR 2/	5.08	2.08	1.77	1.87	2.79	2.30	1.72	1.86	1.77	1.71	1.73	1.96
MAAC	3.36	1.20	1.68	0.67	2.02	1.94	1.91	1.88	1.86	1.81	1.79	1.68
MAIN	2.99	2.12	1.97	1.87	1.79	1.91	1.97	1.95	1.87	1.86	1.84	1.92
MAPP 3/	2.78	3.65	2.96	2.13	2.58	2.46	2.61	2.32	2.37	2.38	2.21	2.57
NPCC 3/	2.96	1.93	2.06	1.13	1.53	1.25	1.45	1.90	2.03	1.55	2.05	1.69
SERC	0.62	4.69	2.61	2.54	3.68	2.65	3.06	2.37	2.42	2.22	2.30	2.85
SPP	3.85	1.14	2.06	2.48	2.76	2.85	2.74	2.68	3.00	2.62	2.53	2.49
SUBTOTAL	2.89	2.67	2.16	1.94	2.70	2.28	2.30	2.16	2.20	2.02	2.08	2.25
ERCOT	6.87	4.35	3.23	2.48	3.71	3.88	4.00	3.91	3.88	3.83	3.76	3.70
WSCC 3/	7.59	1.64	2.93	2.79	2.36	2.09	2.41	2.12	2.33	2.13	2.13	2.29
U.S. TOTAL	4.06	2.60	2.39	2.15	2.71	2.37	2.46	2.29	2.37	2.20	2.23	2.38

1/ AS REPORTED IN ITEM 1 OF THE IE-411 REPORTS. NET ENERGY IS THE ELECTRIC ENERGY REQUIRED FROM ALL SOURCES DURING THE REPORT PERIOD TO SATISFY THE ENERGY REQUIREMENTS OF CUSTOMERS AND SUPPLY LOSSES IN THE TRANSMISSION AND DISTRIBUTION SYSTEM. IT INCLUDES THE NET ENERGY FROM INSTALLED POWER SOURCES AND ENERGY SUPPLIED BY OTHER SOURCES SUCH AS INTERCONNECTED UTILITY SYSTEMS AND INDUSTRIAL SOURCES. IT DOES NOT INCLUDE THE ENERGY REQUIRED FOR PUMPING OF PUMPED STORAGE PLANTS.
2/ TOTAL OF BULK POWER AND LIAISON SYSTEM MEMBERS FROM VOL. II, NOT VOL. I.
3/ U.S. PORTION OF COUNCIL ONLY.
4/ AVERAGE OF TEN ANNUAL INCREASES FROM (1985/1984) TO (1994/1993).

TABLE 2

ACTUAL AND PROJECTED GROWTH OF SUMMER PEAK DEMANDS
AS REPORTED APRIL 1, 1985 BY THE REGIONAL ELECTRIC RELIABILITY COUNCILS 1/
CONTIGUOUS UNITED STATES

(MEGAWATTS)

	ACTUAL 1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
ECAR 2/	65851	68222	69591	70851	72577	74199	75507	76910	78303	79704	81174
MAAC	35442	36042	36472	36782	37222	37582	37972	38342	38772	39232	39732
MAIN	35186	35155	35662	36207	36801	37380	37975	38609	39235	39852	40498
MAPP 3/	20666	21813	22395	22878	23407	23964	24530	24948	25460	25983	26538
NPCC 3/	38144	39522	40207	40565	41213	41801	42410	43202	44004	44560	45390
SERC	92668	97317	100086	101913	105344	108045	110831	113415	116125	119028	121894
SPP	45751	47698	48763	49894	51222	52632	54024	55530	56854	58208	59623
SUBTOTAL	333708	345769	353176	359090	367786	375603	383249	390956	398753	406567	414849
ERCOT	36851	38464	39663	40809	42372	43917	45446	46969	48660	50612	52408
WSCC 3/	80048	81399	83151	85834	87657	89558	91658	93556	95734	97865	100125
U.S. TOTAL	450607	465632	475990	485733	497815	509078	520353	531481	543147	555044	567382

ANNUAL PERCENT INCREASE OVER PRECEDING YEAR

												AVG. INCREASE 4/ (%)
ECAR 2/	-0.16	3.60	2.01	1.81	2.44	2.23	1.76	1.86	1.81	1.79	1.84	2.12
MAAC	1.89	1.69	1.19	0.85	1.20	0.97	1.04	0.97	1.12	1.19	1.27	1.15
MAIN	1.39	-0.09	1.44	1.53	1.64	1.57	1.59	1.67	1.62	1.57	1.62	1.42
MAPP 3/	-0.57	5.55	2.67	2.16	2.31	2.38	2.36	1.70	2.05	2.05	2.14	2.54
NPCC 3/	1.66	3.61	1.73	0.89	1.60	1.43	1.46	1.87	1.86	1.26	1.86	1.76
SERC	-4.70	5.02	2.85	1.83	3.37	2.56	2.58	2.33	2.39	2.50	2.41	2.78
SPP	-0.28	4.26	2.23	2.32	2.66	2.75	2.64	2.79	2.38	2.38	2.43	2.69
SUBTOTAL	-0.94	3.61	2.14	1.67	2.42	2.13	2.04	2.01	1.99	1.96	2.04	2.20
ERCOT	5.37	4.38	3.12	2.89	3.83	3.65	3.48	3.35	3.60	4.01	3.55	3.59
WSCC 3/	5.91	1.69	2.15	3.23	2.12	2.17	2.34	2.07	2.33	2.23	2.31	2.26
U.S. TOTAL	0.71	3.33	2.22	2.05	2.49	2.26	2.21	2.14	2.19	2.19	2.22	2.33

1/ AS REPORTED IN ITEM 1 OF THE IE-411 REPORTS. THE PEAK DEMANDS OF THE COUNCILS ARE NOT NECESSARILY COINCIDENT IN TIME. THE ACTUAL 7-COUNCIL SUBTOTALS AND THE U.S. TOTALS WILL BE LESS THAN THE TOTALS SHOWN HERE BECAUSE THE COUNCIL PEAKS OCCUR AT DIFFERENT TIMES. THE TOTALS ARE SHOWN ONLY TO INDICATE THE APPROXIMATE LEVEL OF 7-COUNCIL AND NATIONAL PEAK POWER USE. THE DEMANDS INCLUDE INTERRUPTIBLE LOADS AND EXCLUDE INTERREGIONAL PURCHASES AND SALES. THE COUNCIL DESIGNATION IS "PEAK HOUR DEMAND".

2/ TOTAL OF BULK POWER AND LIAISON SYSTEM MEMBERS.

3/ U.S. PORTION OF COUNCIL ONLY.

4/ AVERAGE OF TEN ANNUAL INCREASES FROM (1985/1984) TO (1994/1993).

TABLE 3

ACTUAL AND PROJECTED GROWTH OF WINTER PEAK DEMANDS
AS REPORTED APRIL 1, 1985 BY THE REGIONAL ELECTRIC RELIABILITY COUNCILS 1/
CONTIGUOUS UNITED STATES

(MEGAWATTS)

	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95
ECAR 2/	67349a	66671	68042	69728	71496	72958	74501	76047	77529	79065	80544
MAAC	33384a	32262	32812	33522	34312	34992	35672	36312	36962	37602	38212
MAIN	27796	28896	29442	30103	30769	31442	32152	32841	33519	34233	34958
MAPP 3/	18989	19607	19960	20458	21078	21617	22099	22578	23096	23623	24051
NPCC 3/	37321	37982	38327	38715	39173	39731	40290	41061	41809	42460	43263
SERC	99921	95964	97773	100491	102527	104699	106796	109593	111997	114613	117088
SPP	35224	35828	36779	37731	38846	40928	41177	42221	43304	44416	45537
SUBTOTAL	319984	317210	323135	330748	338201	346367	352687	360653	368216	376012	383653
ERCOT	31937	29828	30595	32049	33564	35068	36745	38441	40052	41859	43581
WSCC 3/	77120	76340	78387	80814	82457	84254	85942	88055	90155	92071	92348
U.S. TOTAL	429041	423378	432117	443611	454222	465689	475374	487149	498423	509942	519582

ANNUAL PERCENT INCREASE OVER PRECEDING YEAR

												AVG. INCREASE 4/ (%)
ECAR 2/	5.53	-1.01	2.06	2.48	2.54	2.04	2.11	2.08	1.95	1.98	1.87	1.81
MAAC	10.73	-3.36	1.70	2.16	2.36	1.98	1.94	1.79	1.79	1.73	1.62	1.37
MAIN	-1.29	3.96	1.89	2.25	2.21	2.19	2.26	2.14	2.06	2.13	2.12	2.32
MAPP 3/	0.97	3.25	1.80	2.49	3.03	2.56	2.23	2.17	2.29	2.28	1.81	2.39
NPCC 3/	4.46	1.77	0.91	1.01	1.18	1.42	1.41	1.91	1.82	1.56	1.89	1.49
SERC	9.25	-3.96	1.89	2.78	2.03	2.12	2.00	2.62	2.19	2.34	2.16	1.62
SPP	-1.61	1.71	2.65	2.59	2.96	5.36	0.61	2.54	2.57	2.57	2.52	2.61
SUBTOTAL	5.28	-0.87	1.87	2.36	2.25	2.41	1.82	2.26	2.10	2.12	2.03	1.84
ERCOT	7.49	-6.60	2.57	4.75	4.73	4.48	4.78	4.62	4.19	4.51	4.11	3.21
WSCC 3/	0.07	-1.01	2.68	3.10	2.03	2.18	2.00	2.46	2.38	2.13	0.30	1.83
U.S. TOTAL	4.47	-1.32	2.06	2.66	2.39	2.52	2.08	2.48	2.31	2.31	1.89	1.94

1/ AS REPORTED IN ITEM 1 OF THE IE-411 REPORTS. THE PEAK DEMANDS OF THE COUNCILS ARE NOT NECESSARILY COINCIDENT IN TIME. THE ACTUAL 7-COUNCIL SUBTOTALS AND THE U.S. TOTALS WILL BE LESS THAN THE TOTALS SHOWN HERE BECAUSE THE COUNCIL PEAKS OCCUR AT DIFFERENT TIMES. THE TOTALS ARE SHOWN ONLY TO INDICATE THE APPROXIMATE LEVEL OF 7-COUNCIL AND NATIONAL PEAK POWER USE. THE DEMANDS INCLUDE INTERRUPTIBLE LOADS AND EXCLUDE INTERREGIONAL PURCHASES AND SALES. THE COUNCIL DESIGNATION IS "PEAK HOUR DEMAND".
2/ TOTAL OF BULK POWER AND LIAISON SYSTEM MEMBERS.
3/ U.S. PORTION OF COUNCIL ONLY.
4/ AVERAGE OF TEN ANNUAL INCREASES FROM (1985-86/1984-85) TO (1994-95/1993-94).
a REVISED PER DATA RECEIVED AFTER PUBLICATION OF IE-411.

TABLE 4

ACTUAL AND PROJECTED GROWTH OF SUMMER NET DEPENDABLE CAPABILITIES AS REPORTED APRIL 1, 1985 BY THE REGIONAL ELECTRIC RELIABILITY COUNCILS 1/ CONTIGUOUS UNITED STATES

(MEGAWATTS)

	* 1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
ECAR 2/	91034	94864	97625	97775	99386	100026	101004	102451	102666	103940	104781
MAAC 5/	45431	46316	47501	48474	48471	48212	48211	49065	49585	50210	50044
MAIN	42573	45684	45659	48830	49943	49953	49966	49982	49865	49880	49862
MAPP 3/	28703	28628	29057	29144	29819	29809	29870	29735	29779	29654	30065
NPCC 3/	50791	51084	53052	55059	54989	54939	54928	55341	55200	56099	55949
SERC **	128993	130155	133414	136973	139705	144265	144421	148533	149213	151932	152888
SPP	60424	65089	67036	66759	66874	66604	66952	68957	69457	71326	72490
SUBTOTAL	447949	461820	473344	483014	489187	493808	495352	504064	505765	513041	516079
ERCOT	44866	44368	46784	50496	51759	53276	54877	56608	58226	60596	62442
WSCC 3/	111605	112657	118861	121523	124166	125460	126130	128175	130379	131277	133414
U.S. TOTAL	604420	618845	638989	655033	665112	672544	676359	688847	694370	704914	711935

ANNUAL PERCENT INCREASE OVER PRECEDING YEAR

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	AVG. INCREASE 4/ (%)
ECAR 2/	4.21	2.91	0.15	1.65	0.64	0.98	1.43	0.21	1.24	0.81	1.42
MAAC	1.95	2.56	2.05	-0.01	-0.53	-0.00	1.77	1.06	1.26	-0.33	0.98
MAIN	7.31	-0.05	6.94	2.28	0.02	0.03	0.03	-0.23	0.03	-0.04	1.63
MAPP 3/	-0.26	1.50	0.30	2.32	-0.03	0.20	-0.45	0.15	-0.42	1.39	0.47
NPCC 3/	0.58	3.85	3.78	-0.13	-0.09	-0.02	0.75	-0.25	1.63	-0.27	0.98
SERC **	0.90	2.50	2.67	1.99	3.26	0.11	2.85	0.46	1.82	0.63	1.72
SPP	7.72	2.99	-0.41	0.17	-0.40	0.52	2.99	0.73	2.69	1.63	1.86
SUBTOTAL	3.10	2.50	2.04	1.28	0.94	0.31	1.76	0.34	1.44	0.59	1.43
ERCOT	-1.11	5.45	7.93	2.50	2.93	3.01	3.15	2.86	4.07	3.05	3.38
WSCC 3/	0.94	5.51	2.24	2.17	1.04	0.53	1.62	1.72	0.69	1.63	1.81
U.S. TOTAL	2.39	3.26	2.51	1.54	1.12	0.57	1.85	0.80	1.52	1.00	1.65

1/ AS REPORTED IN ITEM 3-A OF THE IE-411 REPORTS. NET DEPENDABLE CAPABILITY IS THE STEADY HOURLY OUTPUT WHICH GENERATING EQUIPMENT IS EXPECTED TO SUPPLY TO SYSTEM LOAD, EXCLUSIVE OF AUXILIARY POWER. FOR THE PURPOSES OF THIS TABLE "NET DEPENDABLE CAPABILITY" INCLUDES PUMPED STORAGE UNITS AND OTHER SOURCES WHICH MAY HAVE LIMITED ENERGY SUPPLY, BUT WHICH ARE EXPECTED TO BE AVAILABLE DURING THE PEAK DEMAND PERIOD.

2/ BULK POWER AND LIAISON MEMBER TOTAL. DIFFERS FROM THE IE-411 BY EXCLUSION OF BATH COUNTY UNITS 1, 2 AND 3 IN SUMMER 1985.

3/ U.S. PORTION OF COUNCIL ONLY.

4/ AVERAGE OF TEN ANNUAL INCREASES FROM (1985/1984) TO (1994/1993).

5/ EXCLUDES TMI-1 ONLY FOR THE SUMMER OF 1985. TMI-2 EXCLUDED IN ALL YEARS, AS REPORTED BY MAAC.

* CAPABILITY IN THIS COLUMN IS AS PROJECTED IN THE 1984 EP-411 REPORTS. ACTUAL CAPABILITY IS NOT REPORTED.

** DIFFERS FROM IE-411 IN SUMMER 1985 BY EXCLUSION OF BATH COUNTY UNITS 1, 2 AND 3 AND INCLUSION OF CATAWBA 1.

TABLE 5

ACTUAL AND PROJECTED GROWTH OF WINTER NET DEPENDABLE CAPABILITIES AS REPORTED APRIL 1, 1985 BY THE REGIONAL ELECTRIC RELIABILITY COUNCILS 1/ CONTIGUOUS UNITED STATES

(MEGAWATTS)

	1984-85 *	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95
ECAR 2/	95548	98306	99225	100002	101562	102360	102475	104029	105094	106281	106771
MAAC 5/	49172	49317	49739	50806	50803	50496	51550	51339	51865	52490	52315
MAIN	44610	46473	49760	50897	50914	50890	50940	50836	50837	50852	50834
MAPP 3/	29475	29442	30099	30636	30668	30719	30773	30729	30648	30648	31048
NPCC 3/	52864	53647	56814	56676	56663	56673	56746	56904	56844	57681	57406
SERC	132320	135334	137115	140456	143322	145101	146605	150563	151956	153984	155551
SPP	61531	66880	67113	67036	66785	66553	67156	69429	70691	72246	72671
SUBTOTAL	465520	479399	489865	496509	500717	502792	506245	513829	517935	524182	526596
ERCOT	45965	45834	47651	50961	52189	54311	55640	57696	59568	61662	63924
WSCC 3/	113178	116219	120765	124937	126060	127148	127676	129414	132261	134223	134571
U.S. TOTAL	624663	641452	658281	672407	678966	684251	689561	700939	709764	720067	725091

ANNUAL PERCENT INCREASE OVER PRECEDING YEAR

												AVG. INCREASE 4/ (%)
ECAR 2/	2.52	2.89	0.93	0.78	1.56	0.79	0.11	1.52	1.02	1.13	0.46	1.12
MAAC	0.33	0.29	0.86	2.15	-0.01	-0.60	2.09	-0.41	1.02	1.20	-0.33	0.63
MAIN	0.98	4.18	7.07	2.28	0.03	-0.05	0.10	-0.20	0.00	0.03	-0.04	1.34
MAPP 3/	0.04	-0.11	2.23	1.78	0.10	0.17	0.18	-0.14	-0.26	0.0	1.31	0.52
NPCC 3/	0.69	1.48	5.90	-0.24	-0.02	0.02	0.13	0.28	-0.11	1.47	-0.48	0.84
SERC	3.52	2.28	1.32	2.44	2.04	1.24	1.04	2.70	0.93	1.33	1.02	1.63
SPP	-1.69	8.69	0.35	-0.11	-0.37	-0.35	0.91	3.38	1.82	2.20	0.59	1.71
SUBTOTAL	1.48	2.98	2.18	1.36	0.85	0.41	0.69	1.50	0.80	1.21	0.46	1.24
ERCOT	4.59	-0.28	3.96	6.95	2.41	4.07	2.45	3.70	3.24	3.52	3.67	3.37
WSCC 3/	-0.82	2.69	3.91	3.45	0.90	0.86	0.42	1.36	2.20	1.48	0.26	1.75
U.S. TOTAL	1.27	2.69	2.62	2.15	0.98	0.78	0.78	1.65	1.26	1.45	0.70	1.50

1/ AS REPORTED IN ITEM 3-A OF THE IE-411 REPORTS. NET DEPENDABLE CAPABILITY IS THE STEADY HOURLY OUTPUT WHICH GENERATING EQUIPMENT IS EXPECTED TO SUPPLY TO SYSTEM LOAD, EXCLUSIVE OF AUXILIARY POWER. FOR THE PURPOSES OF THIS TABLE "NET DEPENDABLE CAPABILITY" INCLUDES PUMPED STORAGE UNITS AND OTHER SOURCES WHICH MAY HAVE LIMITED ENERGY SUPPLY, BUT WHICH ARE EXPECTED TO BE AVAILABLE DURING THE PEAK DEMAND PERIOD.

2/ TOTAL OF BULK POWER AND LIAISON SYSTEM MEMBERS.

3/ U.S. PORTION OF COUNCIL ONLY.

4/ AVERAGE OF TEN ANNUAL INCREASES FROM (1985-86/1984-85) TO (1994-95/1993-94).

5/ TMI-1 IS INCLUDED BEGINNING IN WINTER 1985-86 AND TMI-2 IS EXCLUDED FOR ALL YEARS OF THE PERIOD, AS REPORTED BY MAAC.

* CAPABILITY IN THIS COLUMN IS AS PROJECTED IN THE 1984 EP-411 REPORTS. THE COUNCILS DO NOT REPORT TOTAL CAPABILITY FOR THE YEAR PRECEDING THE REPORTING YEAR.

TABLE 6

ACTUAL AND PROJECTED SUMMER AND WINTER INSTALLED RESERVE MARGINS
AS REPORTED APRIL 1, 1985 BY THE REGIONAL ELECTRIC RELIABILITY COUNCILS
CONTIGUOUS UNITED STATES

% RESERVE MARGIN AT TIME OF SUMMER PEAK DEMAND 1/

	ACTUAL 1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
ECAR 2/	38.24	39.05	40.28	38.00	36.94	34.81	33.77	33.21	31.11	30.41	29.08
MAAC	28.18	28.51	30.24	31.79	30.22	28.28	26.96	27.97	27.89	27.98	25.95
MAIN	20.99	29.95	28.03	34.86	35.71	33.64	31.58	29.46	27.09	25.16	23.12
MAPP 3/	38.89	31.24	29.75	27.39	27.39	24.39	21.77	19.19	16.96	14.13	13.29
NPCC 3/	33.16	29.25	31.95	35.73	33.43	31.43	29.52	28.10	25.44	25.90	23.26
SERC	39.20	33.74	33.30	34.40	32.62	33.52	30.31	30.96	28.49	27.64	25.43
SPP	32.07	36.46	37.47	33.80	30.56	26.55	23.93	24.18	22.17	22.54	21.58
SUBTOTAL 4/	34.23	33.56	34.02	34.51	33.01	31.47	29.25	28.93	26.84	26.19	24.40
ERCOT	21.75	15.35	17.95	23.74	22.15	21.31	20.75	20.52	19.66	19.73	19.15
WSCC 3/	39.42	38.40	42.95	41.58	41.65	40.09	37.61	37.00	36.19	34.14	33.25

% RESERVE MARGIN AT TIME OF WINTER PEAK DEMAND 1/

	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95
ECAR 2/	41.87	47.45	45.83	43.42	42.05	40.30	37.55	36.80	35.55	34.42	32.56
MAAC	47.29	52.86	51.59	51.56	48.06	44.31	44.51	41.38	40.32	39.59	36.91
MAIN	60.49	60.83	69.01	69.08	65.47	61.85	58.43	54.79	51.67	48.55	45.41
MAPP 3/	55.22	50.16	50.80	49.75	45.50	42.11	39.25	36.10	32.70	29.74	29.09
NPCC 3/	41.65	41.24	48.23	46.39	44.65	42.64	40.84	38.58	35.96	35.85	32.69
SERC	32.42	41.03	40.24	39.77	39.79	38.59	37.28	37.38	35.68	34.35	32.85
SPP	74.68	86.67	82.48	77.67	71.92	62.61	63.09	64.44	63.24	62.66	59.59
SUBTOTAL 4/	45.48	51.13	51.60	50.12	48.05	45.16	43.54	42.47	40.66	39.41	37.26
ERCOT	43.92	53.66	55.75	59.01	55.49	54.87	51.42	50.09	48.73	47.31	46.68
WSCC 3/	46.76	52.24	54.06	54.60	52.88	50.91	48.56	46.97	46.70	45.78	45.72

1/ % RESERVE MARGIN = $\frac{\text{NET DEPENDABLE CAPABILITY - PEAK DEMAND}}{\text{PEAK DEMAND}} \times 100$

2/ TOTAL OF BULK POWER AND LIAISON SYSTEM MEMBERS.

3/ U.S. PORTION OF COUNCIL ONLY.

4/ THIS INFORMATION IS MEANINGFUL TO SOME DEGREE, BECAUSE THE SEVEN COUNCIL AREAS ARE INTERCONNECTED. IT IS NOT HOWEVER, IMPLIED THAT THESE RESERVES CAN BE FREELY EXCHANGED AMONG ALL REGIONS OR IN ALL CASES WITHIN A REGION.
WSCC HAS ONLY MINOR INTERCONNECTION CAPACITY WITH OTHER COUNCILS.
ERCOT HAS A 200 MW DC TIE WITH SPP AND A 500 MW TIE IS PLANNED FOR COMPLETION IN 1989. DC TIES PERMIT ASYNCHRONOUS TRANSFERS OF POWER.

TABLE 7

ACTUAL AND PROJECTED SUMMER AND WINTER INSTALLED CAPACITY MARGINS AS REPORTED APRIL 1, 1985 BY THE REGIONAL ELECTRIC RELIABILITY COUNCILS CONTIGUOUS UNITED STATES

% CAPACITY MARGIN AT TIME OF SUMMER PEAK DEMAND 1/

	ACTUAL 1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
ECAR 2/	27.66	28.08	28.72	27.54	26.97	25.82	25.24	24.93	23.73	23.32	22.53
MAAC	21.99	22.18	23.22	24.12	23.21	22.05	21.24	21.85	21.81	21.86	20.61
MAIN	17.35	23.05	21.89	25.85	26.31	25.17	24.00	22.75	21.32	20.10	18.78
MAPP 3/	28.00	23.81	22.93	21.50	21.50	19.61	17.88	16.10	14.50	12.38	11.73
NPCC 3/	24.90	22.63	24.21	26.32	25.05	23.91	22.79	21.93	20.28	20.57	18.87
SERC	28.16	25.23	24.98	25.60	24.60	25.11	23.26	23.64	22.18	21.66	20.27
SPP	24.28	26.72	27.26	25.26	23.41	20.98	19.31	19.47	18.15	18.39	17.75
SUBTOTAL 4/	25.50	25.13	25.39	25.66	24.82	23.94	22.63	22.44	21.16	20.75	19.62
ERCOT	17.86	13.31	15.22	19.18	18.14	17.57	17.19	17.03	16.43	16.48	16.07
WSCC 3/	28.28	27.75	30.04	29.37	29.40	28.62	27.33	27.01	26.57	25.45	24.95

% CAPACITY MARGIN AT TIME OF WINTER PEAK DEMAND 1/

	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95
ECAR 2/	29.51	32.18	31.43	30.27	29.60	28.72	27.30	26.90	26.23	25.61	24.56
MAAC	32.11	34.58	34.03	34.02	32.46	30.70	30.80	29.27	28.73	28.36	26.96
MAIN	37.69	37.82	40.83	40.86	39.57	38.22	36.88	35.40	34.07	32.68	31.23
MAPP 3/	35.58	33.40	33.69	33.22	31.27	29.63	28.19	26.53	24.64	22.92	22.54
NPCC 3/	29.40	29.20	32.54	31.69	30.87	29.89	29.00	27.84	26.45	26.39	24.64
SERC	24.49	29.09	28.69	28.45	28.46	27.84	27.15	27.21	26.30	25.57	24.73
SPP	42.75	46.43	45.20	43.72	41.83	38.50	38.68	39.19	38.74	38.52	37.34
SUBTOTAL 4/	31.26	33.83	34.04	33.39	32.46	31.11	30.33	29.81	28.91	28.27	27.14
ERCOT	30.52	34.92	35.79	37.11	35.69	35.43	33.96	33.37	32.76	32.12	31.82
WSCC 3/	31.86	34.31	35.09	35.32	34.59	33.74	32.69	31.96	31.84	31.40	31.38

1/ % CAPACITY MARGIN = $\frac{\text{NET DEPENDABLE CAPABILITY - PEAK DEMAND}}{\text{NET DEPENDABLE CAPABILITY}} \times 100$

2/ TOTAL OF BULK POWER AND LIAISON SYSTEM MEMBERS.

3/ U.S. PORTION OF COUNCIL ONLY.

4/ THIS INFORMATION IS MEANINGFUL TO SOME DEGREE, BECAUSE THE SEVEN COUNCIL AREAS ARE INTERCONNECTED. IT IS NOT HOWEVER, IMPLIED THAT THESE MARGINS CAN BE FREELY EXCHANGED AMONG ALL REGIONS OR IN ALL CASES WITHIN A REGION.
WSCC HAS ONLY MINOR INTERCONNECTION CAPACITY WITH OTHER COUNCILS.
ERCOT HAS A 200 MW DC TIE WITH SPP AND A 500 DC TIE IS PLANNED FOR COMPLETION IN 1989. DC TIES PERMIT ASYNCHRONOUS TRANSFERS OF POWER.

B. Reliability, Reserve Margins and Capacity Margins

1. Reliability

Reliability of electric power supply is, from the users' viewpoint, the uninterrupted supply of electric energy to meet their needs, at normal voltage and frequency. The concept implies freedom from excessive fluctuation of voltage and frequency, from requests by the utility to reduce the use of power and from utility-initiated voltage reductions and curtailments of power (however temporary they may be). Also implied in the users' view of reliability is the freedom to increase demand and energy requirements as needs dictate. When faced with the unavoidable trade-offs between reliability and the cost of providing and maintaining it, users may have second thoughts about the level of service continuity they actually need. However, reliable service as a concept is still the ideal situation; its cost may be an unpleasant compromise with reality.

The North American Electric Reliability Council (NERC) has developed three related but separate concepts that express how the utility system sees the "Reliability" that customers look for: Reliability, Adequacy, Security. 1/ These concepts are the obverse of the user's Reliability coin. They reflect the utility industry's knowledge of how systems grow, operate and interrelate.

For the purposes of this brief report, reliability is discussed only in terms of the sufficiency of generating capacity to meet projected demands. That sufficiency can be approximately measured in terms of the difference between the capacity and the largest seasonal or annual demand. This aspect of reliability is discussed below under "Reserve Margins" and "Capacity Margins". A second aspect of reliability is the sufficiency of the transmission system with respect to the power (capacity and energy) it must be able to move between and among generating plants, substations, different utilities and the users of electricity. This feature of the power system is discussed only briefly, in Section C (Transmission Considerations).

1/ Reliability Concepts. North American Electric Reliability Council, Feb. 1985.

2. Reserve Margins

Planned reserve margins 1/ for each Council area and each Electric Region have been computed from the projected net dependable capacity and peak demand data contained in the IE-411 reports of April 1, 1985. These margins, as projected for the summer and winter peak periods 1985 through 1994-95 are in most instances in excess of the margins that have historically been considered adequate. In order to examine more closely the suitability of the margins, DOE staff has estimated the magnitude of generating capacity that may be unavailable 2/ because of scheduled maintenance, forced outages and other reasons, and has factored in the effects of scheduled inter-regional capacity transfers. An "adjusted reserve margin" 3/ has then been computed. This value can be considered as the anticipated reserve that may be available at the time of the seasonal peak after outages have taken place, and integrating the effects of currently scheduled purchases and sales of capacity.

Caution is advised in the use of reserve margins (planned or adjusted) to evaluate power supply reliability. The reserve margin is a measure of the relationship of capacity to load only at the time of peak load (the largest annual or seasonal load). It is usually assumed that if the margin at the time of occurrence of the largest load is adequate, it will be adequate at all other times. However, it is possible that when loads are less than the peak loads, capacity unavailability for reasons of maintenance or forced outage could be greater than at the time of peak load, resulting in lower reserve margins than at peak load time. Again, even if primary energy supply (fuel, water, etc.) is sufficient to operate all available generating capacity, the

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1/ Planned reserve margin is the difference between generating capability and peak demand; it is usually expressed in megawatts and as a percentage of peak demand.

2/ This estimate is not intended to be the result of rigorous analysis of generating capacity availability. It is intended as a sensitivity measure, to indicate possible problem areas requiring further analysis. A low adjusted reserve margin does not mean that a region will necessarily experience blackouts or brownouts. A low margin may be considered as an indication that a region may not be able to satisfy all of its customers' demands without assistance from other regions. See Appendix 2.

3/ See Tables C1 through C9 at the end of this section for installed and adjusted reserves by Council area and Tables ER1 through ER27 for installed and adjusted reserves by Electric Region.

magnitude of reserve margin is not the sole determinant of reliability. Geographic distribution of generating capacity and customer loads, individual unit reliability, and the configuration, type, size and condition of transmission facilities, all have a strong effect on reliability. Other important factors are the distribution facilities, the minute-to-minute operation of system facilities under control of utility system load dispatchers, and the complex inter-actions of automatic control and protective devices.

The seasonal and annual peak demands of each utility do not always occur at the same hour, on the same day, or even in the same month, for all systems in a region. Even when systems are adjoining, their individual load characteristics, and differing weather patterns, may result in a time difference between occurrence of their peak demands. This phenomenon allows capacity to be shifted between systems to meet peak loads as they occur. While superficial consideration may give the appearance of "double-counting" of capacity, realistic appraisal shows that "the same capacity" may indeed be used twice, by different systems at different times. However, the use of capacity in this manner cannot be relied on absolutely, because large-area weather phenomena or other events may make it unavailable. A wide-spread heat wave, for instance, may cause simultaneous peaking of several adjoining utilities that would normally be expected to experience their peaks at different times. This type of situation makes experienced judgment by system operators an important factor in maintaining reliable operation, and makes utility planning and operation more than just an exercise in computing reserve margins.

Analyses of generating capacity requirements usually distinguish between short-term adequacy and long-term adequacy. The possibility of inadequate power supply in the short term is treated as an operating problem, to be met by short-term purchases of capacity from other systems, revision of maintenance schedules, acceleration of construction of facilities nearing completion or other measures.

There is no well-defined division between "short-term" and "long-term". The lead time necessary to install generating capacity, under existing constraints, would normally be the determining factor in a decision to invoke operating measures or planning changes 1/. If the inadequacy is expected to occur

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1/ Constraints may be physical, in that no suitable site is available for additional generating capacity; or financial, in that a utility cannot currently arrange financing for new units or transmission facilities; or they may be related to environmental and other pressures that prevent rapid completion of facilities even when no other constraints are operative.

within two or three years, it would not be possible to avoid a large-scale capacity deficiency by the installation of a large new unit. As the time span lengthens, the probability that large new units can be planned and installed or that construction schedules can be accelerated becomes greater. It is not unreasonable to consider two years as a period during which capacity shortages are an operating problem, to be solved by short-term purchases of capacity, appropriate manipulation of maintenance schedules, possible voltage reductions or other operating practices. A capacity short-fall foreseen 5 years or more in the future would be a planning problem, to be solved by planning new units or scheduling purchases. Construction of transmission facilities may also be necessary to cope with long-term problems, or could be a means of dealing with a short-term problem.

Various procedures can be used to determine the magnitude and types of available reserve margins. The procedure adopted by DOE in the past, and also used in this report, is to compute the installed reserve margin 1/ and then to see how that margin is modified by scheduled purchases and sales of capacity, and by an estimate of unavailable generating capacity. In this report unavailability was computed on the basis of historic average data for the years 1979-84. 2/ The results are shown in Appendix 2. The unavailability calculation provides an average value to be used as an approximating factor in the evaluation of possible electric supply problems. At the present time, and for the next decade, negative adjusted reserves for some electric regions are usually counterbalanced by use of the transmission system to acquire reserves from other regions. ECAR, for instance, as a whole has positive adjusted reserves indicated at peak times although some ECAR sub-Regions may have negative reserves. The existence of internal transmission facilities in ECAR that can transfer capacity in large amounts makes the Council-wide positive reserves available as needed. In this instance, regional negative adjusted reserves in the short term do not necessarily imply inadequate service, but only indicate those areas which may need to arrange for additional purchases of capacity from time to time. Long term, negative reserve problems may be resolved through an increase in scheduled purchases of capacity, the earlier completion of planned new generating capacity through the acceleration of construction schedules, or entirely new construction, or increased conservation efforts.

1/ (Net Dependable Capacity - Peak Demand) x 100%/Peak Demand.

2/ Forms FPC 12E-2, ERA-119M, EP-119M, EIA-119M provided information for the years 1979-1982. The 1984 EP-411 reports (Item 3C) provided data for 1983 and the 1985 IE-411 reports (Item 3C) provided 1984 data.

3. Capacity Margins

A 1982 report published by the Electric Power Research Institute (EPRI) examines U.S. electric power supply future adequacy by considering megawatt reserves as a percentage of installed capacity. This approach differs from the historical method of using peak demand as the base. Since installed capacity (at least for the next decade) is projected to be larger than peak demand, the margin as a percentage of capacity will be smaller than the margin as a percentage of load. Both methods start with the magnitude of the difference between peak demand and installed capacity. EPRI focuses on the ratio of this difference to the installed capacity, trying to determine how much of the installed capacity will be utilized at the time of peak demand. The reserve margin method considers the difference between peak load and capacity as a ratio to the peak demand, focusing attention on the additional demand that could be accommodated by the existing capacity. Neither method should be used as the sole criterion for judging the adequacy of power system generating capacity. The reserve margin (percent of peak demand) is used as an "early warning" indicator of possible capacity insufficiency and reason for closer scrutiny. The capacity margin is a similar tool that can be used for the same purpose but, for the present, may not be as useful for analysis of reliability because it lacks an experience factor. No history exists of the use of capacity margin factors to determine what level of capacity margin would be a useful indicator of a potential reliability problem.

The adjusted reserve margin, as a percentage of load and as a percentage of capacity, has been computed for each Council and each Electric Region, and is shown on lines 20 and 21 respectively, in Tables C1 to C9 for each Council and on lines 20 and 21 of Tables ER1 to ER27 for each Electric Region. These adjusted reserves reflect reductions of planned capability for reasons of scheduled maintenance, forced outages and other outages and also reflect the effects of scheduled capacity purchases and sales. In addition, the installed margins are shown for each Council in Table 6 (Reserve as percentage of peak demand, without reduction for any outages) and in Table 7 (Reserve as percentage of installed capacity, without reduction for any outages).

C. Transmission Considerations

Transmission facilities are needed to move electric power from generating plants to load centers, to interconnect generating plants within a utility system and to interconnect utility systems. Adequate transmission is needed so that necessary power flows can be maintained when generating plants and transmission facilities are forced out of service due to malfunction or are being maintained. Another function of transmission is to provide for transfers of economy energy from one system to another; two instances are the ECAR-to-MAAC and Southern System-to-Florida flows of coal-fired energy used to displace oil-fired energy. The voltage level of a transmission line is a function of the location of its terminal points, expected power flows over a period of years, construction economics, and existing system transmission voltage levels, among other factors. While the voltage and the conductor size of a transmission line are basic to the determination of its capacity to transmit power, system factors such as transmission line length, relative system phase angles, capacity of terminal equipment and system operating constraints can also be controlling factors.

An exact measure of how well a transmission system performs its many functions has not yet been developed by the utility industry and accepted for general use. Likewise, no generally-used quantitative single measure has been developed for measuring how closely the use of a transmission system is approaching the limits of that system's ability to function adequately. As an approximate measure of what the U.S. aggregate transmission system does in the way of handling energy transfers, the "MWh Per Mile" concept is offered. This figure of merit is not considered to be a true measure of transmission system performance or adequacy, but is used for want of a better; it is a first step in the development of a measure that can be useful in viewing overall performance of an aggregate system. In applying this measure to the U.S. system, the energy moved over the system has been computed as the sum of net generation, purchases from industrials and net imports; this is the "MWh" part of the measure. The "Miles" part is the total circuit miles of transmission at voltages 22 kV and higher. The data used in the computation of MWh/Mile are taken from the Annual Statistical Yearbooks published by the Edison Electric Institute. Table C1A and the graph on page 22 show that the energy moved over the U.S. aggregate transmission system has increased more, proportionally, than the number of miles of transmission has grown, over the last 3 decades: on the average, each mile of transmission in 1983 carried about twice the energy that was carried in 1956.

Table C1

U.S. Transmission System Gwh Per Mile

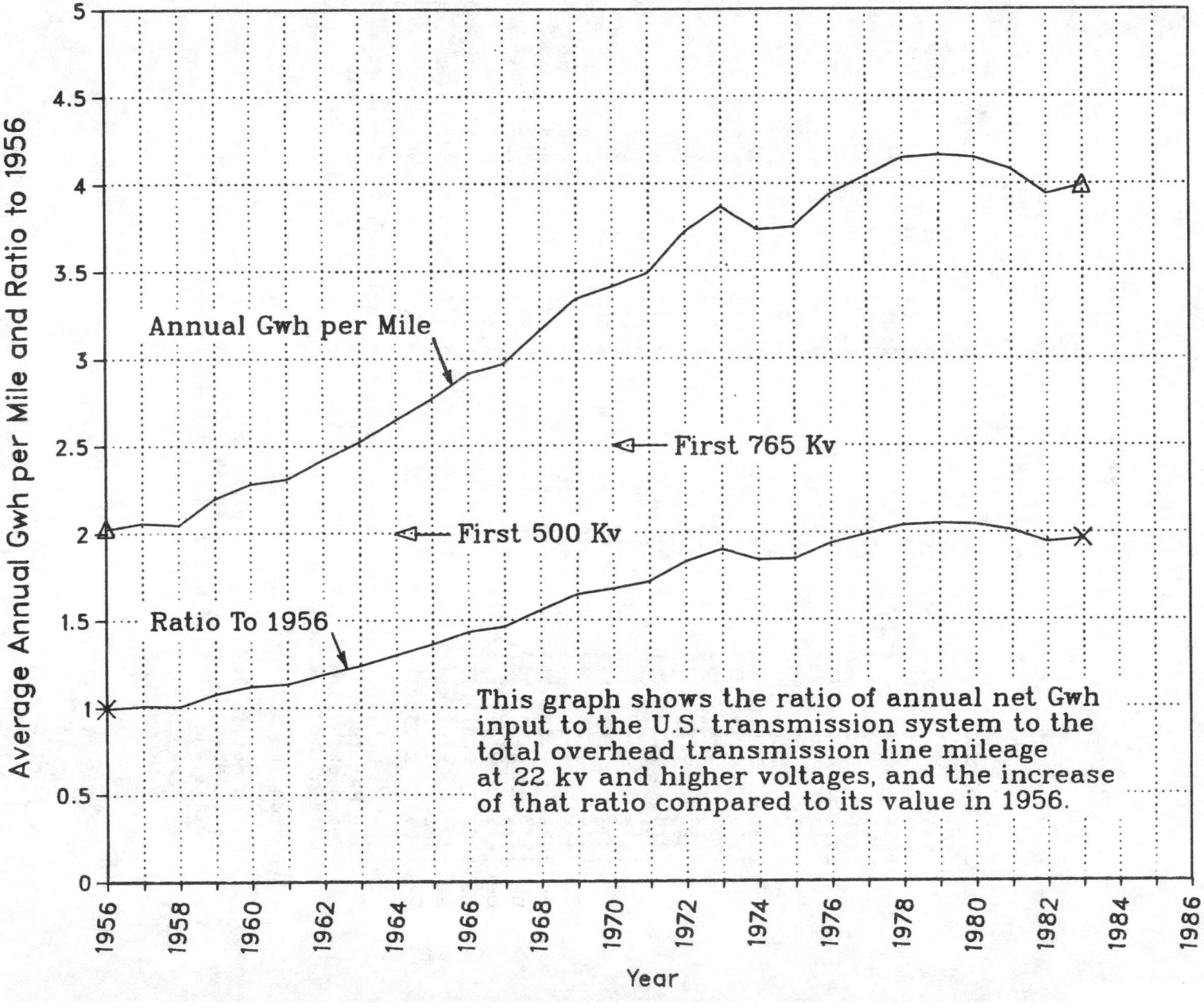
Year	Net Input To System Gwh *	Circuit-Miles Of Line At 22 kV and Over **	Gwh/Mile	Ratio Of Gwh/Mile To The 1956 Value
1956	605,216	298,109 a	2.030	1.000
1957	635,118	307,235 a	2.067	1.018
1958	648,417	316,270 a	2.050	1.010
1959	713,703	324,412 a	2.200	1.084
1960	762,566	333,571	2.286	1.126
1961	798,290	344,931	2.314	1.140
1962	857,790	354,153	2.422	1.193
1963	919,825	364,876	2.521	1.242
1964	988,876	373,677	2.646	1.303
1965	1,058,066	382,383	2.767	1.363
1966	1,148,279	394,231	2.913	1.435
1967	1,219,145	410,448	2.970	1.463
1968	1,332,372	422,300	3.155	1.554
1969	1,448,626	433,544	3.341	1.646
1970	1,539,291	451,010	3.413	1.681
1971	1,622,862	464,967	3.490	1.719
1972	1,763,648	474,008	3.721	1.833
1973	1,877,262	485,729	3.865	1.904
1974	1,885,747	504,890	3.735	1.840
1975	1,929,826	513,925	3.755	1.850
1976	2,050,963	520,635	3.939	1.940
1977	2,145,613	530,645	4.043	1.992
1978	2,232,311	538,439	4.146	2.042
1979	2,273,727	546,195	4.163	2.051
1980	2,314,915	558,795	4.143	2.041
1981	2,336,797	573,069	4.078	2.009
1982	2,283,959	579,522	3.941	1.941
1983	2,358,376	590,593	3.993	1.967

* Sum of Utility Net Generation, Industrial Sales to Utilities and Net Imports, computed from data in the annual Statistical Yearbook of the Electric Utility Industry, published by the Edison Electric Institute (EEI).

** From the EEI annual Yearbook.

a Does not include Industrial Sales to Utilities (data not available). For 1960-69 these sales fluctuated between .221% and .417% of Net Input, with an average of .3054%.

Average Annual Gwh Per Mile of Transmission Circuits
Total U.S. 1956--1983



The implications of this change in the energy transportation characteristic of the national transmission system may be a suitable topic for further study. The data available at present indicate regional differences in MWh per mile that may be due to the geography, the types of generation (e.g. hydro, baseload fossil) and the nature of the transmission system. Table C2A shows the differences that exist among Census Regions of the U.S. Data are not available on a Reliability Council basis.

Table C2A

Regional Transmission Miles And Energy Sales 1983

Census Regions	Total Sales To Ultimate Customers Gwh *	Circuit-Miles At 22 kV And Above *	Gwh/Mile
Alaska & Hawaii	9,945	1,466	6.784
Middle Atlantic	256,038	46,056	5.559
New England	81,673	15,725	5.194
E. North Central	371,971	81,223	4.580
W. South Central	311,605	72,331	4.308
Pacific	271,940	66,037	4.118
South Atlantic	391,355	107,341	3.646
E. South Central	188,570	68,092	2.769
W. North Central	154,978	68,907	2.249
Mountain	119,521	63,415	1.885
Total U.S.	2,157,598	590,593	3.653

* From Edison Electric Institute Statistical Yearbook of the Electric Utility Industry 1983. Totals may not equal sum of components because of independent rounding.

The 765 kV voltage level is the highest alternating current voltage currently in use and projected through the end of the next decade, although much preparatory design and testing have been accomplished at voltage levels over 1100 kV. Direct current transmission lines, and "back-to-back" interconnections, provide asynchronous system interconnections that can be block loaded, providing some flexibility of operation not possible with AC transmission. Currently $\pm$ 500 kV is the highest DC voltage level in use and projected thru the middle 1990's.

The following summary is a brief discussion of the transmission considerations that are discussed in Items 5 and 6 of the April 1985 IE-411 reports.

ECAR

ECAR systems plan to construct transmission additions during the next decade at all of the higher voltage levels. The approximate circuit miles currently scheduled for completion during the period 1985-1994 are as follows:

Voltage Level (kV)	Circuit Miles
230	73
345	870
500	291
765	169
Total	1403

All of the 765 kV circuits are scheduled for completion in 1985. The 345 kV lines are scheduled for each year in the study period. Of the 870 miles of 345 kV line, 200 miles are to be interconnections among ECAR member systems; the balance will be lines internal to member systems. One 500 kV interconnection is planned (45 miles, between TVA and Kentucky Utilities Co.), to facilitate power transfer between SERC and ECAR, and a 50.8 mile circuit at 500 kV will give APS access to the Bath County Pumped Storage Project, which is jointly owned by APS and Virginia Electric and Power Co., a SERC system. The remaining 500 kV lines, the 230 kV lines and the 765 kV lines are internal to ECAR member systems. All of the 765 kV circuits will be built by AEP, dependent on that system's ability to finance construction.

MAAC

According to Items 5 and 6 of the IE-411, the MAAC transmission system and existing interconnections with ECAR systems are adequate to transfer about 2300 MW from ECAR to displace MAAC oil-fired generation during peak hours. It is not expected that this magnitude of power transfer will be exceeded in the near term. About 154 miles of 500 kV circuits are planned, and about 204 miles of 230 kV circuits. About 55 miles of 115 kV line will be converted to 230 kV. MAAC has no 345 kV or 765 kV transmission.

MAIN

MAIN's maximum transmission voltage as of January 1, 1985 was 345 kV; no higher voltage level is planned for the next ten years. From 1985 thru 1990, approximately 219 miles of 345 kV lines will be constructed; nearly 60% of this mileage will be in

the Commonwealth Edison Co. area. The results of a system study to evaluate transmission system adequacy for the summer of 1985 were not available at the time the IE-411 report was published. However, the results of an earlier study, based on the system as planned for the 1988 summer peak showed some inadequacies at interfaces between MAIN and other Council areas:

Direction of Transfer	Evaluation of Adequacy
MAIN to TVA (SERC)	Very low
MAIN to SPP	Inadequate
MAIN to ECAR	Problems exist
MAPP to MAIN	Inadequate

It is expected that additional studies will indicate suitable measures for alleviating the inadequacies.

MAPP

MAPP reports that recent studies under expected seasonal operating conditions, for the next five years, indicate that the bulk power system is in general adequate. The highest existing transmission voltage in MAPP is 500 kV; no higher voltage level is planned thru 1994.

The transmission system map included in the IE-411 reports shows the proposed "Mandan" 500 kV line running from the Mandan substation in Nebraska northward thru South Dakota and North Dakota to the Dorsey substation in Manitoba Province (Canada). This line was the subject of much environmental opposition. In addition, there was not sufficient interest on the part of electric utilities in the area who were to have shared in the costs and benefits. The project has been dropped.

NPCC

In the New England Region of NPCC, 345 kV is the highest A.C. transmission voltage currently in use and foreseen for the next decade. In order to facilitate the importation of power from Canada, 192 miles of $\pm$ 450 kV DC line are planned. Of the total, 59 miles is expected to be in service by the winter 1986-87, running from the U.S. - Quebec border to Comerford Station at Monroe, N.H., via points on the VT-NH border. The remaining 133 miles, from Comerford to Sandy Pond substation near Ayer, Massachusetts, is scheduled for completion by the winter of 1990-91.

The AC transmission contruction schedule for 1985-94 calls for construction of 294 miles of 345 kV line (7.6 miles to be operated initially at 120 kV) and 269 miles of line at the 115kV-138kV level. By the end of 1994 the bulk power transmission system in New England will consist of:

	192 miles at	± 450 kV DC
	1922 miles at	345 kV AC
	444 miles at	230 kV AC
	5759 miles at	138-115 kV AC
Total	8317 miles	

In the New York Region, 345 kV and 765 kV are the extra-high voltage levels of the transmission system; 500 kV is not used. It does not appear that higher voltages than those currently in use are being considered for New York.

SERC

Each of the four SERC Electric Regions reports separately on its transmission facilities, and provides a separate Regional map. The IE-411 report has no overview (or map) of the entire SERC transmission system.

Florida — The transmission system is reported as "adequate for normal system operation during the reporting period". In the summer of 1985, it is expected that a base power flow of 2900 MW from the Southern Region to the Florida Region will prevail, with a maximum flow of 3200 MW possible in a capacity emergency. Florida does not have any 345 kV or 765 kV lines, but does have some 500 kV circuits. Transmission system additions above 230 kV are planned at 500 kV only, through 1994.

Southern — No significant problems are anticipated for normal or contingency conditions during the summer of 1985. Voltage levels are similar to Florida's.

TVA — The TVA transmission system has no 345 kV or 765 kV circuits, but does have an extensive 500 kV network. According to the IE-411 report, the transmission system capability is adequate to maintain suitable voltage levels while reacting to a wide variety of operating conditions, over the next several years, without serious overloads.

VACAR — In the VACAR transmission system 500 kV is the only existing extra-high-voltage level. VACAR reports that outages of the "most critical generating units" have been studied, and none resulted in overloaded facilities or excessive

voltage drops. Some transmission circuit outages could affect transfer capability but in general, outage of any single facility will not degrade system operation significantly.

SPP

In the Southwest Power Pool the highest transmission voltage is 500 kV, and there is an extensive 345 kV network. Future voltages will not exceed 500 kV. SPP analyses indicate that reliable operation can be expected for the near term. Transmission construction proposed is:

Year	Miles	Voltage Levels (kV)
1985	518.8	230, 345, 500
1986	260.0	230, 345
1987	421.9	230, 345, 500
1988	341.0	230, 345, 500
1989	244.2	230, 345, ±400 DC
1990	432.0	138, 230, 345, 500
1991	318.0	230, 345
1992	322.9	230, 345
1993	253.0	230, 345, 500
1994	356.0	230, 345
Total	3,467.8	

ERCOT

The maximum existing AC voltage level is 345 kV; no higher voltage is contemplated through 1994. In December 1984 a DC "back-to-back" 200 MW DC interconnection with SPP became operational in North Texas, and a 500 MW $\pm$ 400 kV DC line from ERCOT's South Texas Nuclear Project to Southwestern Electric Power Co. in SPP is scheduled for 1989. ERCOT systems also plan on constructing 2098.4 miles of AC lines at 345 kV and 53 miles at 138 kV. Of the 345 kV lines, 72.2 miles will be operated initially at 138 kV.

WSCC

For WSCC as a whole, the IE-411 report states that "the interconnected transmission system is generally adequate to accommodate anticipated firm power transfers". It appears, however, that problems exist in accommodating all desired economy power transfers. The system is frequently used near its transfer capability limit because of economic incentives for using generation in the most cost effective manner. In addition to construction of new facilities, emphasis is being placed on operator training, coordinated underfrequency load shedding programs and development of remedial action schemes. The following table summarizes the existing transmission line circuit miles for WSCC and the major changes for 1985-94. The data include the Canadian portion of the Northwest Power Pool.

WSSC Transmission System

Voltage Level (Kv)	NWPP	RMPA	AZNM	CASN	Total	Percent Of Total
	Circuit Miles Existing As Of January 1, 1985					
A C						
115--161	23,657	5,408	4,305	8,433	41,803	42.0
230	16,964	3,694	2,135	11,796	34,589	34.7
287--360	3,957	540	3,565	395	8,457	8.5
500	8,628	0	1,581	3,620	13,829	13.9
D C						
260-280	93	0	0	0	93	0.1
± 400	264	0	0	580	844	0.8
Total Existing	53,563	9,642	11,586	24,824	99,615	100.0
% Of Existing	53.8	9.7	11.6	24.9	100.0	
	Significant Net Changes 1985-1994(Circuit Miles)					
A C						
115--161	-79	97	-104	60	-26	-0.2
230	2,394	604	505	843	4,346	40.3
287	79	0	-55	-176	-152	-1.4
345	319	632	1,172	51	2,174	20.1
500	1,421	0	219	2,040	3,680	34.1
D C						
± 400	-264	0	0	-580	-844	-7.8
± 500	264	0	240	1,099	1,603	14.9
Total Additions	4,134	1,333	1,977	3,337	10,781	100.0
% Of Additions	38.3	12.4	18.3	31.0	100.0	

D. Regional Energy Requirements

The actual annual net energy requirements as reported by the Electric Regions for the years 1980-84 are shown in Table 8. The net annual energy requirements projected for the 26 Electric Regions of the contiguous U.S. are shown in Table 9 (1985 through 1989) and Table 10 (1990 through 1994). The data for these tables have been taken from Item 1 of the April 1985 IE-411 reports, as reported by each Electric Region, and have been summed to obtain aggregate quantities for each Reliability Council and for the total of the nine councils. The 9-Council total is less than the total that would be projected for all electric utilities in the contiguous U.S., because a number of small systems are not included in the IE-411 reports. Where non-generating systems are supplied by generating utilities that are Council members, the projected energy requirements of the non-generating systems have been included by their suppliers.

For the purposes of IE-411 reporting, net energy is defined as the energy required from all power sources during the reporting period to satisfy the energy requirements of customers, and includes transmission and distribution losses. It includes the net energy from installed power sources and energy supplied by other sources such as interconnected utility systems and industrial sources. Net energy does not include energy required for pumping water for use by pumped storage hydroelectric plants. It is expected that the reporting systems have given special attention to the reporting of energy sales for resale, so as to avoid duplicate reporting of such quantities.

Table 8

Actual Regional Annual Net Energy Requirements 1980-1984
As Reported in the Reliability Council Reports
ERA-411 (1981), EP-411 (1982-1984), IE-411 (1985)

Electric Region	Actual Energy Requirements in Gwh				
	1980	1981	1982	1983	1984
1 APS	32,588	33,130	30,719	31,578	33,529
2 WOIM	97,268	96,599	89,936	93,711	102,900
13 WPANCO	64,447	65,615	59,542	62,248	64,105
14 CDH	27,074	26,989	26,457	27,589	28,062
15 KY	31,243	31,020	29,361	30,836	32,088
16 IND	47,994	47,612	46,302	49,628	50,659
18 LMS	65,479	65,411	64,774	68,911	71,686
Total ECAR	366,093	366,376	347,091	364,501	383,029
5 MAAC	175,622	174,668	171,659	179,990	186,034
6 CECO *	66,946	66,199	64,378	67,000	68,309
17 SCIM	60,327	57,832	56,924	60,388	62,034
19 WIUM	38,688	38,776	36,814	38,586	40,587
Total MAIN	165,961	162,807	158,116	165,974	170,930
20 MAPP **	96,422	96,308	96,992	102,526	105,378
3 NEPOOL	85,050	85,000	85,288	88,143	92,195
4 NYPP	118,866	118,395	117,144	122,157	124,338
Total NPCC **	203,916	203,395	202,432	210,300	216,533
7 FCG	93,300	96,222	94,994	99,820	103,731
9 SOCO	109,187	111,415	108,547	113,549	120,102
11 TVA	123,877	119,046	110,036	114,015	101,839
12 VACAR	153,351	156,253	153,213	163,479	168,244
Total SERC	479,715	482,936	466,790	490,863	493,916
8 MSGS	105,806	104,734	101,986	102,562	107,049
21 MOKN	43,664	44,126	44,069	46,187	46,579
22 OKLA	64,079	63,088	65,540	68,939	72,014
Total SPP	213,549	211,948	211,595	217,688	225,642
23 ERCOT	162,327	164,920	169,769	173,372	185,283
24 RMPA	29,479	30,522	31,280	31,805	33,088
25 NWPP **	172,857	175,649	173,321	172,006	183,986
26 AZNM	41,630	44,884	42,717	44,082	46,695
27 CASN	185,017	196,733	187,992	187,975	205,168
Total WSCC	428,983	447,788	435,310	435,868	468,937
Total	2,292,588	2,311,146	2,259,754	2,341,082	2,436,102

* Excludes Rochelle Municipal Utilities and Village of Winnetka. The data for these systems were included in the 1981 & 1982 reports but were omitted from the 1983, 1984 and 1985 reports. To make the data consistent for the purposes of this table, the data reported for these two systems have been removed from the 1981 and 1982 totals. The total energy for the two systems was 209 Gwh in 1980 and 188 Gwh in 1981.

** Excluding Canada

Note: In the preparation of this table of actual energy data, minor errors were discovered in the data reported for SERC and SPP in the DOE reports on Electric Power Supply and Demand published in 1982, 1983 and 1984. These errors have been corrected in the table above.

Table 9

Projected Regional Annual Net Energy Requirements 1985-1989
From Item 1 of the IE-411 Reliability Council Reports
dated April 1, 1985

Electric Region	Annual Net Energy Requirements in Gwh				
	1985	1986	1987	1988	1989
1 APS	34,400	35,100	35,700	36,500	37,300
2 WOIM	105,700	107,340	110,160	114,770	118,280
13 WPA-NCO	65,970	66,390	66,620	67,620	68,500
14 CDH	28,740	29,350	30,060	30,770	31,480
15 KY	32,680	33,350	33,810	34,570	35,320
16 IND	50,700	51,460	52,300	53,530	54,970
18 LMS	72,810	74,920	76,710	78,890	80,370
Total ECAR a	391,000	397,910	405,360	416,650	426,220
5 MAAC	188,274	191,443	192,725	196,609	200,431
6 CECO	70,350	72,300	73,750	75,200	76,700
17 SCIM	63,062	63,905	64,383	65,397	66,615
19 WIUM	41,138	41,788	43,180	43,963	44,762
Total MAIN	174,550	177,993	181,313	184,560	188,077
20 MAPP *	109,224	112,458	114,852	117,819	120,722
3 NEPOOL	94,745	96,981	98,113	100,156	101,949
4 NYPP	125,960	128,268	129,677	131,120	132,227
Total NPCC *	220,705	225,249	227,790	231,276	234,176
7 FCG	107,224	110,588	114,194	117,930	121,743
9 SOCO	121,597	123,391	127,039	130,590	133,849
11 TVA	113,112	115,328	119,134	125,832	127,382
12 VACAR	175,146	181,273	183,714	189,743	196,068
Total SERC	517,079	530,580	544,081	564,095	579,042
8 MSGS b	106,422	107,292	109,262	111,735	114,602
21 MOKN	47,116	48,027	49,408	50,709	52,004
22 OKLA	75,090	78,014	80,447	83,271	86,103
Total SPP b	228,628	233,333	239,117	245,715	252,709
23 ERCOT	193,347	199,590	204,543	212,127	220,366
24 RMPA	35,996	38,225	39,765	41,301	42,747
25 NWPP *	185,795	190,193	194,817	198,467	201,283
26 AZNM	46,782	48,953	52,838	55,493	57,616
27 CASN	208,035	213,182	216,843	220,893	225,281
Total WSCC *	476,608	490,553	504,263	516,154	526,927
Total	2,499,415	2,559,109	2,614,044	2,685,005	2,748,670

a Total of regional energy as reported by individual systems in Vol. II of the ECAR IE-411 Report. This differs slightly from the rounded total reported for ECAR in Vol. I.

b Includes Jonesboro, Ark. Differs from the SPP IE-411 because Jonesboro was not included due to late filing.

* Excluding Canada

Table 10

Projected Regional Annual Net Energy Requirements 1990-1994
From Item 1 of the IE-411 Reliability Council Reports
dated April 1, 1985

Electric Region	Annual Net Energy Requirements in Gwh				
	1990	1991	1992	1993	1994
1 APS	38,100	38,900	39,600	40,300	40,900
2 WOIM	120,090	121,790	123,790	125,590	127,470
13 WPA-NCO	69,090	70,340	71,590	72,810	74,080
14 CDH	31,990	32,590	33,300	33,910	34,520
15 KY	36,180	36,940	37,480	38,020	38,620
16 IND	56,330	57,920	59,130	60,670	62,100
18 MICH	81,770	83,150	84,540	85,830	87,330
Total ECAR a	433,550	441,630	449,430	457,130	465,020
5 MAAC	204,257	208,105	211,969	215,810	219,663
6 CECO	78,250	79,800	81,400	83,050	84,700
17 SCIM	67,901	69,315	70,622	71,961	73,355
19 WIUM	45,635	46,413	47,165	47,888	48,585
Total MAIN	191,786	195,528	199,187	202,899	206,640
20 MAPP *	123,872	126,750	129,750	132,839	135,780
3 NEPOOL	104,008	106,842	109,690	111,691	114,639
4 NYPP	133,571	135,249	137,321	139,160	141,348
Total NPCC *	237,579	242,091	247,011	250,851	255,987
7 FCG	125,951	129,460	133,260	137,092	140,847
9 SOCO	139,068	141,971	144,981	147,708	150,644
11 TVA	129,785	132,103	134,441	136,036	137,611
12 VACAR	201,950	207,356	213,012	218,747	225,184
Total SERC	596,754	610,890	625,694	639,583	654,286
8 MSGS b	117,352	119,735	123,046	125,845	128,341
21 MOKN	53,176	54,459	55,827	57,094	58,884
22 OKLA	89,114	92,400	95,732	98,873	101,716
Total SPP b	259,642	266,594	274,605	281,812	288,941
23 ERCOT	229,187	238,149	247,401	256,875	266,528
24 RMPA	44,016	45,109	46,350	47,679	49,355
25 NWPP *	204,740	208,272	212,443	215,736	219,345
26 AZNM	59,715	61,735	64,201	66,373	68,134
27 CASN	231,133	235,938	240,919	246,119	251,316
Total WSCC *	539,604	551,054	563,913	575,907	588,150
Total	2,816,230	2,880,791	2,948,960	3,013,706	3,080,995

a Actual total of regional values. This total differs slightly from the total reported in Vol I of the ECAR IE-411 report because that total was rounded before printing by the ECAR program.

b Includes Jonesboro, Ark. Differs from the SPP IE-411 because Jonesboro was not included due to late filing.

* Excluding Canada

E. Large-Area Perspective - The Regional Councils

For purposes of over-all electric system reliability considerations, the contiguous U.S. is divided into nine Electric Reliability Council areas. The Council boundaries have been drawn in accordance with historic associations among neighboring utilities, contractual and informal power pools, and practical system operating considerations. These factors had resulted in a wide-spread reliable electric power network by the late 1960's, and the Council concept has since that time contributed greatly to further expansion and reliability of electric power supply. The Electric Reliability Councils, which are voluntary associations of electric utilities, provide a structure and a forum for discussion of power supply and demand problems by the entities responsible for planning and operating the power system. In this section the projected capacity, loads and reliability of each Council area are discussed.

The Council-wide projected installed reserve margins appear generally to be adequate for each peak load period in the decade 1985-94 except for MAPP, SPP and ERCOT (see Table 6) 1/. However, beginning in 1990 for MAPP and SPP, summer margins drop below 25%. ERCOT summer margins are in the 15% to 21% range for the entire period 1985-1994. The ERCOT IE-411 report states (Item 3B) that the target reserve is at least 15%, and that the capability to serve loads is adequate. While reserve margins in the mid-to-upper 20 percent range have previously been considered adequate, this may no longer be the case. Large generating units, on the order of 500 MW to 1300 MW, have in general shown less reliability than the smaller units of earlier periods, and also require more downtime for maintenance. In addition, outage of a large unit, for whatever reason, requires equivalent capacity in reserve. As a result, projected installed reserves for the peak load periods, of the same magnitudes as were found historically to be satisfactory, should not be regarded as total assurance of system reliability. Tables C1 through C9, which indicate the effect of capacity outages on reserve margins, show that significant downward adjustments to reserves result from consideration of capacity outage possibilities.

1/ As a first approximation, a projected installed reserve margin of 25% or greater is considered adequate in this analysis. The installed reserve margin is computed before capacity reductions due to scheduled maintenance, forced outages or other reasons. Adjusted reserve margins provide more insight into prospective reliability, because they are computed after capacity reductions for possible outages.

Tables D and E show the projected adjusted reserve margins by Council area for the summer and winter peak loads, respectively. These margins 2/ are considered better indicators of reliability than the planned reserve margins, because they factor in the estimated effects of capacity unavailability and purchases and sales of capacity. Only a few instances appear, in Table D, where summer adjusted reserves are 5% or less. These are:

ECAR in 1985, 1992, 1993, 1994
MAAC in 1990 thru 1994
MAIN in 1986 and 1991 thru 1994
MAPP in 1992 thru 1994
SERC in 1994
ERCOT in 1985

For the winter peak periods, as shown in Table E, only MAAC has an adjusted reserve less than the criterion. Since all of the adjusted reserves in Table E are after estimated scheduled maintenance (and other estimated outages) it would appear that adequate capacity is available to meet winter peak demands as projected.

Projected new nuclear generating units incorporated in the computation of reserve margins add an element of uncertainty, since completion of many nuclear units has historically been delayed beyond the scheduled dates. The growing dependence of some regions on nuclear power plants emphasizes the need for assuring the prompt licensing of such plants.

2/ An adjusted reserve margin of 5% is used as a warning signal that the capability/demand relationship should be examined more closely.

Table D

Council Area Adjusted Reserve Margins In Percent*

Summer 1985-1994

Council	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
ECAR	4.3	9.9	7.9	7.2	5.9	5.1	5.7	4.3	4.3	3.3
MAAC	6.3	7.6	8.8	7.5	5.9	4.8	3.6	3.0	1.9	0.3
MAIN	5.2	3.5	9.1	9.0	7.3	5.6	4.0	2.1	2.0	0.3
MAPP	16.0	13.8	11.7	11.8	9.2	6.9	5.4	3.5	1.0	0.2
NPCC	8.9	11.5	14.1	12.6	11.0	9.5	11.8	8.9	9.2	6.9
SERC	12.1	10.8	11.8	10.4	11.1	8.5	9.0	7.6	6.9	5.0
SPP	22.8	24.1	21.1	17.4	13.2	10.3	11.0	8.2	8.4	7.6
ERCOT	3.2	5.5	10.6	9.1	8.4	7.8	7.6	6.7	6.7	6.1
WSCC	17.3	21.6	20.4	20.4	19.1	16.9	16.4	15.7	13.9	13.2

* Installed Reserve Margin, modified by the effects of currently scheduled purchases and sales of capacity and the estimated unavailability of generating capacity due to scheduled maintenance, forced outages and other reasons.

In Table D, reserves of 5.0% or less have been underscored because at this level it may be adviseable to look more closely at the Council situation with respect to available options for purchases of capacity, construction of new units or greater efforts in the direction of conservation.

Table E

Council Area Adjusted Reserve Margins In Percent*

Winter 1985/86-1994/95

Council	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
ECAR	16.6	14.8	12.9	12.3	11.0	9.8	9.5	8.8	8.2	6.7
MAAC	20.3	19.2	19.0	16.3	13.4	11.3	8.4	6.9	5.8	3.8
MAIN	21.8	28.1	28.2	24.4	21.7	19.1	16.4	14.0	13.4	11.0
MAPP	25.1	25.2	24.3	21.0	18.1	16.7	14.1	11.2	12.1	11.5
NPCC	16.5	21.6	20.6	19.3	17.7	20.1	17.4	15.2	15.1	12.4
SERC	15.1	14.8	14.1	14.1	13.2	12.1	12.2	11.5	10.3	9.1
SPP	50.8	48.3	45.0	39.0	31.2	30.9	32.7	30.3	29.5	27.0
ERCOT	18.9	20.8	22.9	20.2	19.6	16.9	15.9	14.7	13.7	12.9
WSCC	26.2	27.7	28.1	26.7	25.0	22.9	21.7	21.5	20.7	20.6

* Installed Reserve Margin modified by the effects of currently scheduled purchases and sales of capacity and the estimated unavailability of generating capacity due to scheduled maintenance, forced outages and other reasons.

The MAAC reserve for 1994 has been underscored because it is less than the 5% criterion used as a warning signal.

East Central Area Reliability Coordination Agreement (ECAR) (Electric Regions 1, 2, 13, 14, 15, 16 and 18)

ECAR is discussed here as a strongly integrated entity, with only brief reference to its constituent Electric Regions. ECAR is not a multi-party power pool nor is it a single control area. The systems in ECAR are not centrally coordinated to the same extent as, for instance, those in MAAC or in NEPOOL. However, the strong internal transmission system, coupled with the coordination provided by the central office and the many committees composed of member utility representatives, assure a high degree of coordination.

The ECAR peak demand forecast for the 1985 summer is 68,222 MW. This is a 3.6% increase over the actual 1984 summer peak demand of 65,851 MW. Planned reserves excluding net transactions for 1985 summer are 26,222 MW (38.4%). These reserves have been reduced by 420 MW from the figure filed in the ECAR IE-411 report due to the recently reported delay in the Bath County Pumped Storage Hydro Units 1, 2 and 3 which are shared by VEPCO (630 MW in SERC) and APS (420 MW in ECAR). The Bath County units have been delayed to October 1985 due to water conduit problems. ECAR plans on a net export of 5,009 MW thereby decreasing its reserve position. Adjusted reserves for 1985 summer are 4.3%, after allowance for outages due to scheduled maintenance, forced outages and other outages. For the period 1986-94, ECAR's summer adjusted reserves range from a low of 3.3% in 1994 to a high of 9.9% in 1986. The ECAR region is expected to be summer peaking throughout the entire reporting period.

The ECAR peak demand forecast for the 1985/86 winter is 66,671 MW. This is a decrease of 678 MW below the actual 1984/85 winter peak demand. Planned reserves excluding net transactions for 1985/86 winter are 31,635 MW (47.4%). ECAR plans on a net export of 1,996 MW thereby reducing its reserve position. Adjusted reserves for 1985/86 winter are 16.6%, after allowance for outages due to scheduled maintenance, forced outages and other outages. For the period 1986-94, ECAR's winter adjusted reserves drop from 14.8% in 1986/87 to 6.7% in 1994/95. The projected adjusted reserves appear to be adequate.

The net energy requirement projected for 1985 is 391,000 Gwh, an increase of 2.08% above the actual 1984 energy requirement.

The power exports scheduled for summer 1985 include 3,662 MW of coal-fired capacity to systems in MAAC to replace oil-fired capacity that would otherwise be operated. Beginning in winter 1985/86 this export drops to 1560 MW. If ECAR conditions become marginal, these exports can be discontinued, thereby increasing the ECAR adjusted reserves.

ECAR plans to add 11 major coal units totalling 6,709 MW and 3 nuclear units totalling 3,092 MW (summer generating capability) over the 1985-1994 reporting period. In addition 840 MW of pumped storage hydro capacity, a 306 MW combined cycle unit, a

100 MW cogeneration project, 175 MW of capacity by small power producers and 10 combustion turbines totalling 750 MW will be added to the ECAR capability total. This will result in the 1993 year-end net generating capability being essentially the same as reported in the 1984 EP-411 report. However, generating unit deferrals have reduced year-end capabilities within the ten-year period resulting in capacity margins which are significantly lower than reported a year earlier.

ECAR notes in the IE-411 report that the planned capacity margins "are significantly lower, in most instances, than those indicated in last year's response for the corresponding time period. There is a concern that margins even lower than those [reported] will actually be experienced. The reason for the concern is that there exists the potential for either levels of demand higher-than-projected during the period covered by the response, extended outages of coal-fired generating units for retrofitting of flue gas desulfurization equipment, or cancellations or deferrals of capacity additions due to various causes such as changing environmental standards, licensing delays, and the inability to finance [construction]."

Generating capacity changes from last year's report include:

1. The construction schedule for the Perry No. 2 nuclear unit (CAPCO - 1,179 MW) is "under review" and its capability is not included in the ECAR total.

2. The 808 MW Midland No. 2 nuclear unit (Consumers Power Co.) has been removed from the schedule due to the "construction shutdown" of that project.

3. Zimmer Unit No. 1 (AEP-CG&E-DP&L) has been returned to the schedule as a 1,300 MW coal-fired unit with a July 1991 service date. Prior to the 1984 report, this unit was listed as an 807 MW nuclear unit.

4. An undesignated 330 MW combined cycle unit with a service date of April 1993 has been added by Public Service of Indiana.

5. A 100 MW cogeneration project with a service date of April 1987 and a 300 MW coal unit for 1994, have been added by APS.

6. Expected generation additions by various small power producers in the Consumers Power Co. service area should total 175 MW by 1994 year-end.

ECAR judges its transmission network to be adequate in the near term to handle a wide range of contingency conditions based on analyses and review of power transfer capabilities within ECAR and between ECAR and neighboring regions. However, it is noted that overall system performance will be hampered until the following delayed transmission lines are placed in service: Jackson's Ferry-Axton 765 kV, Mansfield-Harding 345 kV and Belle River-Jewell 345 kV.

Allegheny Power System (APS) has plans to add 840 MW of pumped storage hydro capacity (its share of the six Bath County units, jointly owned with VEPCO in SERC), 2-300 MW coal units and a 100 MW cogeneration steam unit over the 10-year planning period. The delay of Bath County Units 1, 2 and 3 has contributed to APS having a -30.4% adjusted reserve margin for the 1985 summer period. APS has reported 2,252 MW of economy energy sales to PJM for this period which will be coordinated with other ECAR companies (i.e., AEP and OE) to increase the APS adjusted reserve margin, if necessary. APS also has adjusted reserves of less than five percent for the winter periods from 1987 through 1994. Sufficient reserves should be available from ECAR companies and neighboring regions to provide assistance to APS, if required.

The capacity changes projected for the West Virginia-Ohio-Indiana-Michigan (WOIM) Region include the addition of Rockport No. 2 (1,300 MW coal-fired) and a portion (330 MW) of the W.H. Zimmer No. 1 unit. The WOIM region projects adequate adjusted reserve margins exceeding five percent throughout the planning period.

In the Western Pennsylvania-North Central Ohio (WPANCO) Region of ECAR, the Central Area Power Coordinating (CAPCO) Group plans to add two nuclear units over the next 10-year period, Perry No. 1, 1,179 MW, in December 1985 and Beaver Valley No. 2, 820 MW, in December 1987. The WPANCO Region has summer adjusted reserve margins of less than five percent throughout the planning period and also in the 1992-1994 winter periods. WPANCO may have to rely on neighboring system and region support to adequately serve their loads in some of these periods. The strong ECAR transmission system and capacity projected to be available from the ECAR region should be sufficient for reliable operation of the WPANCO systems.

The Cincinnati-Dayton-Hamilton (CDH) region projects six 75 MW combustion turbines (primary fuel, No. 2 oil; secondary fuel, natural gas) and a 970 MW share of the W.H. Zimmer plant to be added to its capacity over the next 10 years. CDH projects adjusted reserve margins below five percent for the 1986-1990 and 1993-1994 summer periods as well as in the 1990 winter period. The overall ECAR reserves and the ECAR transmission system should be sufficient to provide assistance to CDH, as required.

The Kentucky (KY) region of ECAR is planning 3 large coal-fired units totalling 1,745 MW to be completed in the 1985-1994 period. The KY region projects adequate adjusted reserves exceeding 15 percent throughout the period.

Planned generating unit additions for the Indiana (IND) group consist of 3 coal-fired units totalling 1,109 MW, 4 combustion turbines (300 MW total, designed to burn No. 2 oil) and a 306 MW combined cycle unit. Projected adjusted reserves for the IND group seem adequate for the 1985-1994 period.

New generating capacity planned for the Lower Michigan Systems (LMS) region include Belle River No. 2, (655 MW coal) Enrico Fermi No. 2 (917 MW nuclear) and 175 MW of small power producer capacity. The LMS region has summer adjusted reserve margins of less than 5 percent throughout the ten-year period. Overall ECAR reserves and transmission system should be sufficient to provide assistance to LMS, as required.

Electric Reliability Council of Texas (ERCOT)
Electric Region 23

The peak demand projected for summer 1985 (in Item 3A of the April IE-411) is 38,464 MW. This is 4.4% more than the actual 1984 summer peak demand of 36,851 MW. For the winter of 1985/86 the projected peak demand is 29,828 MW, which is (0.3%) less than the actual peak demand of the 1984/85 winter. Projected planned reserves for ERCOT fluctuate between 15.4% and 23.7% in the summer peak periods and between 43.9% and 59.0% in the winter peak periods. These percentages are of approximately the same magnitudes as have yielded reliable service in the past in this area. The adjusted reserves for the winter periods range from 12.9% in winter 1994/95 to 22.9% in winter 1987/88. Summer adjusted reserves from 1986 through 1994 are above the 5% level, but fall below it in 1985. The adjusted reserves for the winter periods range from 12.9% in winter 1994/95 to 22.9% in winter 1987/88. Summer adjusted reserves from 1986 through 1994 are above the 5% level, but fall below it in 1985. The adjusted reserve projections indicate that ERCOT should have adequate power supply for the coming ten years, except possibly in the summer of 1985. ERCOT states tht it does not foresee any problems in serving its forecasted loads.

An unusual feature of ERCOT's projected generating capability additions is the relatively large amount of "firm cogeneration and additional firm capacity from other sources", listed in Item 2B of the IE-411. In the 1985-1994 period, Texas Utilities Electric Co. lists 1300 MW as capacity from Cogeneration, and Houston Lighting & Power Co. lists 2,675 MW as capacity from "Cogeneration and other sources." The 3,975 MW total is over 20% of the net increase in capability ERCOT systems plan for 1985-1994. Cogeneration that is not controlled by the utility system's load dispatch center may pose operational problems with respect to transmission loading, frequency control, spinning reserve requirements, safety procedures related to switching and response to contingencies. ERCOT personnel are aware of and are studying the situation.

The first nuclear generating plant in Texas is scheduled to be the Comanche Peak Project, owned jointly by Texas Utilities Electric Co. and the Texas Municipal Power Pool. Unit 1 at this plant is scheduled for initial operation in January 1986 and Unit 2 for July 1987.

ERCOT systems do not operate in synchronism with systems in any other council area, but a 200 MW DC interconnection with systems in SPP does allow for non-synchronous power transfer. A 500 MW ± 400 kV DC interconnection is planned for 1989.

Mid-Atlantic Area Council (MAAC)

Pennsylvania-New Jersey-Maryland Interconnection (PJM) Electric Region 5

The 1985 PJM summer peak load is forecasted to be 36,042 MW. 1/ For the 1985-86 winter, peak demand is forecast to be 32,262 MW. Whereas the projected summer peak reflects an increase of 600 MW from the preceding year, the projected winter peak is smaller by 1122 MW than that of the 1984-85 winter.

Capacity additions in the PJM region for 1985-1994 include nuclear units totaling 3,177 MW and two coal-fired generating units: one rated at 620 MW and one rated at 625 MW. The region's reserve situation will in part depend on when these new units begin operation as compared with their projected in-service dates. Any substantial slippage in these units would erode the reserve margins beginning in winter 1986-87. On the other hand, if the region should begin experiencing supply problems, the situation could be improved by accelerating construction schedules, if timely licensing is obtained for the nuclear units.

The planned reserve for summer 1985 is 28.5% and for winter 1985-86 is 52.9%. For the following years the planned reserve fluctuates, with the smallest value (27.0%) occurring in summer 1990. After adjustments for scheduled maintenance, forced outages, and other unavailability of capacity, along with purchases and sales of capacity, the summer adjusted reserves for 1985 are 6.3%. Summer adjusted reserves fall below 5.0% beginning in 1993. Winter adjusted reserves fall to 5.8% in winter 1993-94 and drop to 3.8% in the following winter. All other winter adjusted reserves are more than 5.8%.

Philadelphia Electric Co., a member of PJM, plans to retire 400 MW of oil-fired combustion turbines in late 1985 and 367 MW of oil-fired steam units in 1990-1993.

PJM companies plan to import over 1400 MW of capacity from the ECAR area from summer 1985 thru summer of 1990; imports then drop to a much lower level. In addition, it is planned to import limited term power, variable from week to week, to the extent of 2252 MW in summer 1985 and 150 MW from winter 1985-86 through 1994-95.

1/ DOE staff has included in the peak loads cited here the interruptible loads. The 1985 MAAC IE-411 report (Items 1 and 3A) omits the interruptible load from the peak hour demands, and reports it separately in Item 7C. The total of the 5 interruptible loads reported is 432 MW. The conditions of interruptibility are different in each instance.

Mid-America Interpool Network (MAIN)
(Electric Regions 6, 17 and 19)

The MAIN peak demand forecast for the 1985 summer is 35,155 MW. This is a trifling decrease of 31 MW below the actual 1984 summer peak demand. Planned reserves excluding net transactions for 1985 summer are 30.5%. MAIN plans on a net export of 276 MW thereby decreasing its reserve position. Adjusted reserves for 1985 summer are 5.2%, after allowance for outages due to scheduled maintenance, forced outages and other outages and the scheduled excess of exports over imports.

MAIN adjusted reserve in summer 1986 drops to 3.5%, indicating that the Council's net export, scheduled maintenance, or both, may require review prior to that peak period. The following summers, thru 1990, show adequate adjusted reserves but beginning in summer 1991 the adjusted reserves drop to unusually low levels. Those levels indicate a review of summer capacity planning would be appropriate for the utilities in MAIN.

The MAIN peak demand forecast for the 1985/86 winter is 28,896 MW. This is an increase of 3.96% above the actual 1984/85 winter peak demand. Planned reserves excluding net transactions for 1985/86 winter are 60.8%. MAIN plans on a net capacity export of 204 MW in winter 1985/86 thereby decreasing its reserve position. Adjusted reserves for 1985/86 winter are 21.8%, after allowance for outages due to scheduled maintenance, forced outages, and other outages, and net exports of capacity.

Net energy projected for 1985 is 174,550 GWH, an increase of 2.12% over the actual 1984 net energy requirement.

Mid-Continent Area Power Pool (MAPP)
Electric Region 20

The peak demand forecast for the summer of 1985 is 21,813 MW, an increase of 5.55% over the 1984 summer peak. For winter 1985-86 the forecast is 19,607 MW, 3.25% greater than the peak experienced in the winter of 1984-85.

Planned summer reserves are 31.2% in 1985, and decrease to 13.3% in 1994. In the past, before more detailed analyses resulted in the "adjusted reserve" concept, these reserves would have been considered as preliminary indicators of adequate power supply, except possibly for the last two years of the decade. The adjusted reserves, which are 16.0% in summer 1985 and drop to 5.4% in 1991, also can be considered as indicators of adequate power supply. However, the 1992 summer adjusted reserve of 3.5%, and the 1993 and 1994 values are low enough to indicate that reliability is less than assured. Increased capacity purchases, or other measures, may be needed to assure adequate power supply for the summers of 1992 through 1994.

Planned winter reserves are 50.2% in winter 1985/86 and remain at a reasonably high level thru 1994. Adjusted reserves indicate that winter power supply in this Region is adequate for normal contingencies.

In the period 1985-1994, MAPP utilities plan to complete 3 large units, Antelope Valley 2 (450 MW), Sherburne County 3 (800 MW) and North Dakota Lignite 1 (500 MW).

Southeastern Electric Reliability Council (SERC) 1/
(Electric Regions 7, 9, 11 and 12)

The SERC peak demand forecast for the 1985 summer is 97,317 MW. This is an increase of 5.02% above the actual 1984 summer peak demand. Planned reserves excluding net transactions are 34.3%. SERC plans on a net import of 149 MW, thereby improving its reserve position. Adjusted reserves for 1985 summer are 12.1%, after allowance for outages due to scheduled maintenance, forced outages and other outages and net imports. For the period 1986-94, SERC's summer adjusted reserves range between 5.0% in 1994 and 12.9% in 1985. The summer 1993 reserve appears to be marginal, but adequate time is available for SERC systems to construct new generating capacity, upgrade existing capacity or arrange for purchases from other Council areas.

The SERC peak demand forecast for the 1985/86 winter is 95,964 MW. This is a decrease of 3.96% below the actual 1984/85 winter peak demand. Planned reserves excluding net transactions for winter 1985/86 are 41.0%. SERC plans on a net export of 190 MW, thereby reducing its reserve position. Adjusted reserves for 1985/86 winter are 15.1%, after allowance for outages due to scheduled maintenance, forced outages and other outages, and net exports. For the period 1985-94, SERC's winter adjusted reserves range from a low of 9.1% in 1994/95 to a high of 15.1% in 1985/86. The projected adjusted reserves appear to be adequate.

The net energy requirement projected for 1984 is 517,079 GWH which is an increase of 4.69% above the actual 1984 net energy requirement.

1/ The data include the loss of Bath County Units 1, 2 and 3 for the summer of 1985, due to a water conduit problem. It is expected that the units will be in operation for the winter peak of 1985-86. SERC will receive 210 MW and Allegheny Power System (ECAR) will receive 140 MW, from each of the Bath County Units. In addition, the date of commercial operation for Catawba 1 (1145 MW nuclear) is now expected to be June 1 and the unit's capacity has been included in the data.

Northeast Power Coordinating Council (NPCC) 1/ (Electric Regions 3 and 4)

The NPCC peak demand forecast for the 1985 summer is 39,522 MW. This is a 3.61% increase above the actual 1984 summer peak demand. Planned reserves excluding net transactions for 1985 summer are 29.3%. In addition to its planned reserves, NPCC plans on importing 2033 MW thereby increasing its reserve position. Adjusted reserves for 1985 summer are 8.9%, after allowance for outages due to scheduled maintenance, forced outages and other outages and net imports. For the period 1986-94, NPCC's summer adjusted reserves range from a low of 6.9% in 1994 to a high of 14.1% in 1987. The projected summer reserves appear adequate. Although NPCC as a whole has adequate reserves for the summer of 1985, the New England Electric Region appears to be facing a critical situation. This is discussed in Section F under New England Power Pool (Electric Region 3).

The NPCC peak demand forecast for the 1985/86 winter is 37,982 MW. This is an increase of 1.7% above the actual 1984/85 winter peak demand. Planned reserves excluding net transactions for 1985/86 winter are 41.2%. In addition to its planned reserves, NPCC plans on a net import of 1403 MW, thereby improving its reserve position. Adjusted reserves for 1985/86 winter are 16.5%, after allowance for outages due to scheduled maintenance, forced outages and other outages and net imports. For the period 1985-93, NPCC's winter adjusted reserves range between 12.4% in 1994/95 and 21.6% in 1986/87. The projected adjusted reserves appear to be adequate.

The net energy requirement projected for 1985 is 220,705 GWH, an increase of 1.93% over the actual 1984 requirement.

1/ This discussion deals only with the U.S. portion of NPCC.

Southwest Power Pool (SPP)
(Electric Regions 8, 21, and 22)

The SPP peak demand forecast for the 1985 summer is 47,698 MW. This is an increase of 4.26% above the actual 1984 summer peak demand. Planned reserves excluding net transactions for 1984 summer are 36.5%. In addition to its planned reserves, SPP plans on a net import of 687 MW, thereby improving its reserve position. Adjusted reserves for 1985 summer are 22.8%, after allowance for outages due to scheduled maintenance, forced outages and other outages and net imports. For the period 1985-94, SPP's summer adjusted reserves range from a low of 7.6% in 1994 to a high of 24.1% in 1986.

The SPP peak demand forecast for the 1985/86 winter is 35,828 MW. This is an increase of 1.71% over the actual 1985/86 winter peak demand. Planned reserves excluding net transactions for 1985/86 winter are 86.7%. In addition to its planned reserves, SPP plans on a net import of 330 MW thereby increasing its reserve position. Adjusted reserves for 1985/86 winter are 50.8%, after allowance for outages due to scheduled maintenance, forced outages and other outages, and net imports. For the period 1985-94, SPP's winter adjusted reserves range from a low of 27.0% in 1994/95 to a high of 50.8% in 1985/86. Adjusted reserves of this magnitude should be adequate for all contingencies that can reasonably be expected.

Net energy projected for 1985 is 228,628 GWH which is an increase of 1.14% above the actual 1984 net energy requirement.

Western Systems Coordinating Council (WSCC)
(Electric Regions 24, 25, 26 and 27)
(Excluding Canada)

The WSCC peak demand forecast for the 1985 summer is 81,399 MW. This is an increase of 1.69% above the actual 1984 summer peak demand. Planned reserves excluding net transactions for 1985 summer are 38.4%. WSCC plans on a net import of 354 MW, thereby increasing its reserve position. Adjusted reserves for 1985 summer are 17.3%, after allowance for outages due to scheduled maintenance, forced outages and other outages, and net imports. For the period 1985-94, WSCC's summer adjusted reserves range from a low of 13.2% in 1994 to a high of 21.6% in 1986. These reserves appear to be adequate to meet normal contingencies.

The WSCC peak demand forecast for the 1985/86 winter is 76,340 MW, 1.01% below the actual 1984/85 winter peak demand. Planned reserves excluding net transactions for 1985/86 winter are 52.2%. WSCC plans on a net import of 728 MW, thereby improving its reserve position. Adjusted reserves for the 1985/86 winter are 26.2%, after allowance for outages due to scheduled maintenance, forced outages and other outages, and net imports. For the period 1985-94, WSCC's winter adjusted reserves range from a low of 20.6% in 1994/95 to a high of 28.1% in 1987/88; adequate power supply appears to be available.

Net energy projected for 1985 is 476,608 GWH, an increase of 1.64% above the actual 1984 net energy requirements.

The level of the summer and winter adjusted reserves indicates that the general WSCC area has sufficient generating capacity to meet forecast loads. Reliability of service then depends largely on transmission and system operation.

Upgrading of the Pacific DC Intertie voltage level from $\pm$ 400 kV to $\pm$ 500 kV has raised the transmission capacity from a nominal 1600 MW to a nominal 2000 MW (1910 MW south to north and 1960 MW north to south, at the Oregon-Nevada border). Firm exchange contracts utilize almost all of the higher transfer capability. The possibility of increasing the line capacity by 1988, to about 3000 MW, is under study.

Firm interchange on the 500 kV AC Pacific Intertie, nominally 2000 MW, is the subject of studies that may result in a capability increase. Such increase would enable export from the Northwest, to California, of surplus hydro and coal energy. In addition, a third 500 kV AC Intertie from southern Oregon to the Sacramento area is under study. The line is presently scheduled for service by 1989 resulting in a combined AC Intertie capacity of approximately 4,800 MW.

A 200 MW "back-to-back" DC facility, to be operational in 1987, at Sidney, Nebraska, combined with the existing 100 MW DC "back-to-back" facility at Stegall, Nebraska, and a 200 MW "back-to-back" DC facility scheduled for March 1985 at Miles City, Montana, will raise transfer capability to 500 MW in either direction between MAPP and WSCC.

Between 1985 and 1990, it is expected, a 500 kV AC line and a ± 500 kV DC line will be added to the five existing EHV (AC) interconnections between the Arizona-New Mexico Power Area and the Southern California-Nevada Power Area. These lines will increase the East-to-West transfer capability to about 8000 MW.

Initial operation in summer 1985 is scheduled for two 230 kV circuits between San Diego Gas & Electric Co., and the Mexican system operated by Comision Federal de Electricidad (CFE). There will then be a total of four 230 kV lines from the Southern California-Nevada area to Mexico, with a total capability of 408 MW in either direction.

The Arizona-New Mexico Power Area was interconnected with SPP (Region 22) by a 200 MW DC back-to-back tie at Artesia, NM in 1984. An additional DC back-to-back tie, rated at 220 MW, is to be completed in 1985 near Clovis, NM (Blackwater substation). With these two ties, there will be a total non-synchronous power transfer capability of 720 MW between WSCC and the 7-Council interconnected system.

CURRENT CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1985

EAST CENTRAL AREA RELIABILITY COORDINATION AGREEMENT

(ECAR)

	1985 SUMMER	1985 WINTER
1. PLANNED CAPABILITY (MW)	94444 a	98306
2. PEAK DEMAND (MW)	68222	66671
3. PLANNED RESERVES (1-2) (MW)	26222	31635
4. PLANNED RESERVES (%) (3/2)X100	38.4	47.4
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	-5009	-1996
6. TOTAL CAPABILITY (1+5) (MW)	89435	96310
7. TOTAL RESERVES (6-2) (MW)	21213	29639
8. TOTAL RESERVES (%) (7/2)X100	31.1	44.5
9. SCHEDULED MAINTENANCE (MW)	7820	7678
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	81615	88632
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	13393	21961
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	19.6	32.9
13. FULL FORCED OUTAGES (MW)	5261	5476
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	76354	83156
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	8132	16485
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	11.9	24.7
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	5185	5397
18. ADJUSTED CAPABILITY (14-17) (MW)	71169	77759
19. ADJUSTED RESERVES (18-2) (MW)	2947	11088
20. ADJUSTED RESERVES (%) (19/2)X100	4.3	16.6
21. ADJUSTED CAPACITY MARGIN (%) (19/1)x100	3.1	11.3

a The summer 1985 planned capability has been reduced by 420 Mw from the IE-411 reported value because of water conduit problems that will prevent use of Bath County Units 1, 2 and 3 until after the peak period.

1/ OTHER UNAVAILABLE CAPABILITY IS THE CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES .

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1986-1989

EAST CENTRAL AREA RELIABILITY COORDINATION AGREEMENT

(ECAR)

	1986		1987		1988		1989	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	97625	99225	97775	100002	99386	101562	100026	102360
2. PEAK DEMAND (MW)	69591	68042	70851	69728	72577	71496	74199	72958
3. PLANNED RESERVES (1-2) (MW)	28034	31183	26924	30274	26809	30066	25827	29402
4. PLANNED RESERVES (%) (3/2)X100	40.3	45.8	38.0	43.4	36.9	42.1	34.8	40.3
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	-2295	-2396	-2395	-2396	-2395	-2084	-2083	-2084
6. TOTAL CAPABILITY (1+5) (MW)	95330	96829	95380	97606	96991	99478	97943	100276
7. TOTAL RESERVES (6-2) (MW)	25739	28787	24529	27878	24414	27982	23744	27318
8. TOTAL RESERVES (%) (7/2)X100	37.0	42.3	34.6	40.0	33.6	39.1	32.0	37.4
9. SCHEDULED MAINTENANCE (MW)	8083	7749	8096	7810	8229	7932	8282	7994
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	87247	89080	87284	89796	88762	91546	89661	92282
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	17656	21038	16433	20068	16185	20050	15462	19324
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	25.4	30.9	23.2	28.8	22.3	28.0	20.8	26.5
13. FULL FORCED OUTAGES (MW)	5438	5527	5446	5570	5536	5657	5571	5701
14. CAPABILITY AFTER FULL FORCED OUTAGES(10-13) (MW)	81809	83553	81838	84226	83226	85889	84090	86581
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	12218	15511	10987	14498	10649	14393	9891	13623
16. RESERVES (%) AFTER FULL FORCED OUTAGES(15/2)X100	17.6	22.8	15.5	20.8	14.7	20.1	13.3	18.7
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	5360	5447	5368	5490	5456	5576	5491	5620
18. ADJUSTED CAPABILITY (14-17) (MW)	76449	78106	76470	78736	77770	80313	78599	80961
19. ADJUSTED RESERVES (18-2) (MW)	6858	10064	5619	9008	5193	8817	4400	8003
20. ADJUSTED RESERVES (%) (19/2)X100	9.9	14.8	7.9	12.9	7.2	12.3	5.9	11.0
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	7.0	10.1	5.7	9.0	5.2	8.7	4.4	7.8

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1990-1994

EAST CENTRAL AREA RELIABILITY COORDINATION AGREEMENT

(ECAR)

	1990		1991		1992		1993		1994	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	101004	102475	102451	104029	102666	105094	103940	106281	104781	106771
2. PEAK DEMAND (MW)	75507	74501	76910	76047	78303	77529	79704	79065	81174	80544
3. PLANNED RESERVES (1-2) (MW)	25497	27974	25541	27982	24363	27565	24236	27216	23607	26227
4. PLANNED RESERVES (%) (3/2)X100	33.8	37.5	33.2	36.8	31.1	35.6	30.4	34.4	29.1	32.6
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	-2083	-1324	-1323	-1124	-1123	-874	-673	-674	-673	-674
6. TOTAL CAPABILITY (1+5) (MW)	98921	101151	101128	102905	101543	104220	103267	105607	104108	106097
7. TOTAL RESERVES (6-2) (MW)	23414	26650	24218	26858	23240	26691	23563	26542	22934	25553
8. TOTAL RESERVES (%) (7/2)X100	31.0	35.8	31.5	35.3	29.7	34.4	29.6	33.6	28.3	31.7
9. SCHEDULED MAINTENANCE (MW)	8363	8003	8483	8125	8501	8208	8606	8301	8676	8339
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	90558	93148	92645	94780	93042	96012	94661	97306	95432	97758
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	15051	18647	15735	18733	14739	18483	14957	18241	14258	17214
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	19.9	25.0	20.5	24.6	18.8	23.8	18.8	23.1	17.6	21.4
13. FULL FORCED OUTAGES (MW)	5626	5708	5707	5794	5718	5854	5789	5920	5836	5947
14. CAPABILITY AFTER FULL FORCED OUTAGES(10-13)(MW)	84932	87440	86938	88986	87324	90158	88872	91386	89596	91811
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	9425	12939	10028	12939	9021	12629	9168	12321	8422	11267
16. RESERVES (%) AFTER FULL FORCED OUTAGES(15/2)X100	12.5	17.4	13.0	17.0	11.5	16.3	11.5	15.6	10.4	14.0
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	5545	5626	5625	5711	5636	5770	5706	5835	5752	5862
18. ADJUSTED CAPABILITY (14-17) (MW)	79387	81814	81313	83275	81688	84388	83166	85551	83844	85949
19. ADJUSTED RESERVES (18-2) (MW)	3880	7313	4403	7228	3385	6859	3462	6486	2670	5405
20. ADJUSTED RESERVES (%) (19/2)X100	5.1	9.8	5.7	9.5	4.3	8.8	4.3	8.2	3.3	6.7
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	3.8	7.1	4.3	6.9	3.3	6.5	3.3	6.1	2.5	5.1

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

CURRENT CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1985

MID-ATLANTIC AREA COUNCIL

(MAAC)

	1985 SUMMER	1985 WINTER
1. PLANNED CAPABILITY (MW)	46316	49317
2. PEAK DEMAND (MW)	36042	32262
3. PLANNED RESERVES (1-2) (MW)	10274	17055
4. PLANNED RESERVES (%) (3/2)X100	28.5	52.9
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	1543	1543
6. TOTAL CAPABILITY (1+5) (MW)	47859	50860
7. TOTAL RESERVES (6-2) (MW)	11817	18598
8. TOTAL RESERVES (%) (7/2)X100	32.8	57.6
9. SCHEDULED MAINTENANCE (MW)	3024	5114
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	44835	45746
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	8793	13484
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	24.4	41.8
13. FULL FORCED OUTAGES (MW)	5632	5997
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	39203	39749
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	3161	7487
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	8.8	23.2
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	894	952
18. ADJUSTED CAPABILITY (14-17) (MW)	38309	38797
19. ADJUSTED RESERVES (18-2) (MW)	2267	6535
20. ADJUSTED RESERVES (%) (19/2)X100	6.3	20.3
21. ADJUSTED CAPACITY MARGIN (%) (19/1)x100	4.9	13.3

1/ OTHER UNAVAILABLE CAPABILITY IS THE CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1986-1989

MID-ATLANTIC AREA COUNCIL

(MAAC)

	1986		1987		1988		1989	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	47501	49739	48474	50806	48471	50803	48212	50496
2. PEAK DEMAND (MW)	36472	32812	36782	33522	37222	34312	37582	34992
3. PLANNED RESERVES (1-2) (MW)	11029	16927	11692	17284	11249	16491	10630	15504
4. PLANNED RESERVES (%) (3/2)X100	30.2	51.6	31.8	51.6	30.2	48.1	28.3	44.3
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	1548	1523	1525	1525	1527	1527	1529	1529
6. TOTAL CAPABILITY (1+5) (MW)	49049	51262	49999	52331	49998	52330	49741	52025
7. TOTAL RESERVES (6-2) (MW)	12577	18450	13217	18809	12776	18018	12159	17033
8. TOTAL RESERVES (%) (7/2)X100	34.5	56.2	35.9	56.1	34.3	52.5	32.4	48.7
9. SCHEDULED MAINTENANCE (MW)	3102	5158	3165	5269	3165	5268	3148	5236
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	45947	46104	46834	47062	46833	47062	46593	46789
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	9475	13292	10052	13540	9611	12750	9011	11797
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	26.0	40.5	27.3	40.4	25.8	37.2	24.0	33.7
13. FULL FORCED OUTAGES (MW)	5776	6048	5894	6178	5894	6178	5863	6140
14. CAPABILITY AFTER FULL FORCED OUTAGES(10-13) (MW)	40171	40056	40940	40884	40939	40884	40730	40649
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	3699	7244	4158	7362	3717	6572	3148	5657
16. RESERVES (%) AFTER FULL FORCED OUTAGES(15/2)X100	10.1	22.1	11.3	22.0	10.0	19.2	8.4	16.2
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	917	960	936	981	935	980	930	975
18. ADJUSTED CAPABILITY (14-17) (MW)	39254	39096	40004	39903	40004	39904	39800	39674
19. ADJUSTED RESERVES (18-2) (MW)	2782	6284	3222	6381	2782	5592	2218	4682
20. ADJUSTED RESERVES (%) (19/2)X100	7.6	19.2	8.8	19.0	7.5	16.3	5.9	13.4
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	5.9	12.6	6.6	12.6	5.7	11.0	4.6	9.3

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1990-1994

MID-ATLANTIC AREA COUNCIL

(MAAC)

	1990		1991		1992		1993		1994	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	48211	51550	49065	51339	49585	51865	50210	52490	50044	52315
2. PEAK DEMAND (MW)	37972	35672	38342	36312	38772	36962	39232	37602	39732	38212
3. PLANNED RESERVES (1-2) (MW)	10239	15878	10723	15027	10813	14903	10978	14888	10312	14103
4. PLANNED RESERVES (%) (3/2)X100	27.0	44.5	28.0	41.4	27.9	40.3	28.0	39.6	26.0	36.9
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	1530	770	772	572	574	324	126	126	127	127
6. TOTAL CAPABILITY (1+5) (MW)	49741	52320	49837	51911	50159	52189	50336	52616	50171	52442
7. TOTAL RESERVES (6-2) (MW)	11769	16648	11495	15599	11387	15227	11104	15014	10439	14230
8. TOTAL RESERVES (%) (7/2)X100	31.0	46.7	30.0	43.0	29.4	41.2	28.3	39.9	26.3	37.2
9. SCHEDULED MAINTENANCE (MW)	3148	5346	3204	5324	3238	5378	3279	5443	3268	5425
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	46593	46974	46633	46587	46921	46811	47057	47173	46903	47017
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	8621	11302	8291	10275	8149	9849	7825	9571	7171	8805
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	22.7	31.7	21.6	28.3	21.0	26.6	19.9	25.5	18.0	23.0
13. FULL FORCED OUTAGES (MW)	5862	6268	5966	6243	6030	6307	6106	6383	6085	6362
14. CAPABILITY AFTER FULL FORCED OUTAGES(10-13)(MW)	40731	40706	40667	40344	40891	40504	40951	40790	40818	40655
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	2759	5034	2325	4032	2119	3542	1719	3188	1086	2443
16. RESERVES (%) AFTER FULL FORCED OUTAGES(15/2)X100	7.3	14.1	6.1	11.1	5.5	9.6	4.4	8.5	2.7	6.4
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	930	995	947	991	957	1001	969	1013	966	1010
18. ADJUSTED CAPABILITY (14-17) (MW)	39801	39711	39720	39353	39934	39503	39982	39777	39852	39645
19. ADJUSTED RESERVES (18-2) (MW)	1829	4039	1378	3041	1162	2541	750	2175	120	1433
20. ADJUSTED RESERVES (%) (19/2)X100	4.8	11.3	3.6	8.4	3.0	6.9	1.9	5.8	0.3	3.8
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	3.8	7.8	2.8	5.9	2.3	4.9	1.5	4.1	0.2	2.7

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

CURRENT CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1985

MID-AMERICA INTERPOOL NETWORK

(MAIN)

	1985 SUMMER	1985 WINTER
1. PLANNED CAPABILITY (MW)	45864	46473
2. PEAK DEMAND (MW)	35155	28896
3. PLANNED RESERVES (1-2) (MW)	10709	17577
4. PLANNED RESERVES (%) (3/2)X100	30.5	60.8
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	-276	-204
6. TOTAL CAPABILITY (1+5) (MW)	45588	46269
7. TOTAL RESERVES (6-2) (MW)	10433	17373
8. TOTAL RESERVES (%) (7/2)X100	29.7	60.1
9. SCHEDULED MAINTENANCE (MW)	1660	4048
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	43928	42221
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	8773	13325
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	25.0	46.1
13. FULL FORCED OUTAGES (MW)	3486	3532
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	40442	38689
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	5287	9793
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	15.0	33.9
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	3449	3495
18. ADJUSTED CAPABILITY (14-17) (MW)	36993	35194
19. ADJUSTED RESERVES (18-2) (MW)	1838	6298
20. ADJUSTED RESERVES (%) (19/2)X100	5.2	21.8
21. ADJUSTED CAPACITY MARGIN (%) (19/1)x100	4.0	13.6

1/ OTHER UNAVAILABLE CAPABILITY IS THE CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES .

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1986-1989

MID-AMERICA INTERPOOL NETWORK

(MAIN)

	1986		1987		1988		1989	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	45659	49760	48830	50897	49943	50914	49953	50890
2. PEAK DEMAND (MW)	35662	29442	36207	30103	36801	30769	37380	31442
3. PLANNED RESERVES (1-2) (MW)	9997	20318	12623	20794	13142	20145	12573	19448
4. PLANNED RESERVES (%) (3/2)X100	28.0	69.0	34.9	69.1	35.7	65.5	33.6	61.9
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	-181	-194	-177	-190	-488	-502	-489	-503
6. TOTAL CAPABILITY (1+5) (MW)	45478	49566	48653	50707	49455	50412	49464	50387
7. TOTAL RESERVES (6-2) (MW)	9816	20124	12446	20604	12654	19643	12084	18945
8. TOTAL RESERVES (%) (7/2)X100	27.5	68.4	34.4	68.4	34.4	63.8	32.3	60.3
9. SCHEDULED MAINTENANCE (MW)	1653	4334	1768	4433	1808	4435	1808	4433
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	43825	45232	46885	46274	47647	45977	47656	45954
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	8163	15790	10678	16171	10846	15208	10276	14512
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	22.9	53.6	29.5	53.7	29.5	49.4	27.5	46.2
13. FULL FORCED OUTAGES (MW)	3470	3782	3711	3868	3796	3869	3796	3868
14. CAPABILITY AFTER FULL FORCED OUTAGES(10-13) (MW)	40355	41450	43174	42406	43851	42108	43860	42086
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	4693	12008	6967	12303	7050	11339	6480	10644
16. RESERVES (%) AFTER FULL FORCED OUTAGES(15/2)X100	13.2	40.8	19.2	40.9	19.2	36.9	17.3	33.9
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	3434	3742	3672	3827	3756	3829	3756	3827
18. ADJUSTED CAPABILITY (14-17) (MW)	36921	37708	39502	38579	40095	38279	40104	38259
19. ADJUSTED RESERVES (18-2) (MW)	1259	8266	3295	8476	3294	7510	2724	6817
20. ADJUSTED RESERVES (%) (19/2)X100	3.5	28.1	9.1	28.2	9.0	24.4	7.3	21.7
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	2.8	16.6	6.7	16.7	6.6	14.8	5.5	13.4

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

MID-AMERICA INTERPOOL NETWORK

(MAIN)

	1990		1991		1992		1993		1994	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	49966	50940	49982	50836	49865	50837	49880	50852	49862	50834
2. PEAK DEMAND (MW)	37975	32152	38609	32841	39235	33519	39852	34233	40498	34958
3. PLANNED RESERVES (1-2) (MW)	11991	18788	11373	17995	10630	17318	10028	16619	9364	15876
4. PLANNED RESERVES (%) (3/2)X100	31.6	58.4	29.5	54.8	27.1	51.7	25.2	48.5	23.1	45.4
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	-483	-498	-479	-493	-479	-494	112	96	112	96
6. TOTAL CAPABILITY (1+5) (MW)	49483	50442	49503	50343	49386	50343	49992	50948	49974	50930
7. TOTAL RESERVES (6-2) (MW)	11508	18290	10894	17502	10151	16824	10140	16715	9476	15972
8. TOTAL RESERVES (%) (7/2)X100	30.3	56.9	28.2	53.3	25.9	50.2	25.4	48.8	23.4	45.7
9. SCHEDULED MAINTENANCE (MW)	1809	4437	1809	4428	1805	4428	1806	4429	1805	4428
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	47674	46005	47694	45915	47581	45915	48186	46519	48169	46502
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	9699	13853	9085	13074	8346	12396	8334	12286	7671	11544
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	25.5	43.1	23.5	39.8	21.3	37.0	20.9	35.9	18.9	33.0
13. FULL FORCED OUTAGES (MW)	3797	3871	3799	3864	3790	3864	3791	3865	3790	3863
14. CAPABILITY AFTER FULL FORCED OUTAGES(10-13)(MW)	43877	42134	43895	42051	43791	42051	44395	42654	44379	42639
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	5902	9982	5286	9210	4556	8532	4543	8421	3881	7681
16. RESERVES (%) AFTER FULL FORCED OUTAGES(15/2)X100	15.5	31.0	13.7	28.0	11.6	25.5	11.4	24.6	9.6	22.0
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	3757	3831	3759	3823	3750	3823	3751	3824	3750	3823
18. ADJUSTED CAPABILITY (14-17) (MW)	40120	38303	40136	38228	40041	38228	40644	38830	40629	38816
19. ADJUSTED RESERVES (18-2) (MW)	2145	6151	1527	5387	806	4709	792	4597	131	3858
20. ADJUSTED RESERVES (%) (19/2)X100	5.6	19.1	4.0	16.4	2.1	14.0	2.0	13.4	0.3	11.0
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	4.3	12.1	3.1	10.6	1.6	9.3	1.6	9.0	0.3	7.6

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

CURRENT CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1985

MID-CONTINENT AREA POWER POOL

(MAPP-U.S. ONLY)

	1985 SUMMER	1985 WINTER
1. PLANNED CAPABILITY (MW)	28628	29442
2. PEAK DEMAND (MW)	21813	19607
3. PLANNED RESERVES (1-2) (MW)	6815	9835
4. PLANNED RESERVES (%) (3/2)X100	31.2	50.2
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	503	-573
6. TOTAL CAPABILITY (1+5) (MW)	29131	28869
7. TOTAL RESERVES (6-2) (MW)	7318	9262
8. TOTAL RESERVES (%) (7/2)X100	33.5	47.2
9. SCHEDULED MAINTENANCE (MW)	1543	1993
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	27588	26876
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	5775	7269
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	26.5	37.1
13. FULL FORCED OUTAGES (MW)	1360	1398
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	26228	25478
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	4415	5871
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	20.2	29.9
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	925	951
18. ADJUSTED CAPABILITY (14-17) (MW)	25303	24527
19. ADJUSTED RESERVES (18-2) (MW)	3490	4920
20. ADJUSTED RESERVES (%) (19/2)X100	16.0	25.1
21. ADJUSTED CAPACITY MARGIN (%) (19/1)x100	12.2	16.7

1/ OTHER UNAVAILABLE CAPABILITY IS THE CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES .

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1986-1989

MID-CONTINENT AREA POWER POOL

(MAPP-U.S. ONLY)

	1986		1987		1988		1989	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	29057	30099	29144	30636	29819	30668	29809	30719
2. PEAK DEMAND (MW)	22395	19960	22878	20458	23407	21078	23964	21617
3. PLANNED RESERVES (1-2) (MW)	6662	10139	6266	10178	6412	9590	5845	9102
4. PLANNED RESERVES (%) (3/2)X100	29.7	50.8	27.4	49.8	27.4	45.5	24.4	42.1
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	315	-678	304	-690	343	-646	336	-655
6. TOTAL CAPABILITY (1+5) (MW)	29372	29421	29448	29946	30162	30022	30145	30064
7. TOTAL RESERVES (6-2) (MW)	6977	9461	6570	9488	6755	8944	6181	8447
8. TOTAL RESERVES (%) (7/2)X100	31.2	47.4	28.7	46.4	28.9	42.4	25.8	39.1
9. SCHEDULED MAINTENANCE (MW)	1566	2038	1571	2074	1607	2076	1607	2080
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	27806	27383	27877	27872	28555	27946	28538	27984
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	5411	7423	4999	7414	5148	6868	4574	6367
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	24.2	37.2	21.9	36.2	22.0	32.6	19.1	29.5
13. FULL FORCED OUTAGES (MW)	1380	1430	1384	1455	1416	1457	1416	1459
14. CAPABILITY AFTER FULL FORCED OUTAGES(10-13) (MW)	26426	25953	26493	26417	27139	26489	27122	26525
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	4031	5993	3615	5959	3732	5411	3158	4908
16. RESERVES (%) AFTER FULL FORCED OUTAGES(15/2)X100	18.0	30.0	15.8	29.1	15.9	25.7	13.2	22.7
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	939	972	941	990	963	991	963	992
18. ADJUSTED CAPABILITY (14-17) (MW)	25487	24981	25552	25427	26176	25498	26159	25533
19. ADJUSTED RESERVES (18-2) (MW)	3092	5021	2674	4969	2769	4420	2195	3916
20. ADJUSTED RESERVES (%) (19/2)X100	13.8	25.2	11.7	24.3	11.8	21.0	9.2	18.1
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	10.6	16.7	9.2	16.2	9.3	14.4	7.4	12.7

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1990-1994

MID-CONTINENT AREA POWER POOL

(MAPP-U.S. ONLY)

	1990		1991		1992		1993		1994	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	29870	30773	29735	30729	29779	30648	29654	30648	30065	31048
2. PEAK DEMAND (MW)	24530	22099	24948	22578	25460	23096	25983	23623	26538	24051
3. PLANNED RESERVES (1-2) (MW)	5340	8674	4787	8151	4319	7552	3671	7025	3527	6997
4. PLANNED RESERVES (%) (3/2)X100	21.8	39.3	19.2	36.1	17.0	32.7	14.1	29.7	13.3	29.1
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	335	-450	546	-442	546	-442	549	364	539	349
6. TOTAL CAPABILITY (1+5) (MW)	30205	30323	30281	30287	30325	30206	30203	31012	30604	31397
7. TOTAL RESERVES (6-2) (MW)	5675	8224	5333	7709	4865	7110	4220	7389	4066	7346
8. TOTAL RESERVES (%) (7/2)X100	23.1	37.2	21.4	34.1	19.1	30.8	16.2	31.3	15.3	30.5
9. SCHEDULED MAINTENANCE (MW)	1610	2083	1603	2080	1605	2075	1598	2075	1621	2102
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	28595	28240	28678	28207	28720	28131	28605	28937	28983	29295
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	4065	6141	3730	5629	3260	5035	2622	5314	2445	5244
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	16.6	27.8	15.0	24.9	12.8	21.8	10.1	22.5	9.2	21.8
13. FULL FORCED OUTAGES (MW)	1419	1462	1412	1460	1415	1456	1409	1456	1428	1475
14. CAPABILITY AFTER FULL FORCED OUTAGES(10-13)(MW)	27176	26778	27266	26747	27305	26675	27196	27481	27555	27820
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	2646	4679	2318	4169	1845	3579	1213	3858	1017	3769
16. RESERVES (%) AFTER FULL FORCED OUTAGES(15/2)X100	10.8	21.2	9.3	18.5	7.2	15.5	4.7	16.3	3.8	15.7
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	965	994	960	993	962	990	958	990	971	1003
18. ADJUSTED CAPABILITY (14-17) (MW)	26211	25784	26306	25754	26343	25685	26238	26491	26584	26817
19. ADJUSTED RESERVES (18-2) (MW)	1681	3685	1358	3176	883	2589	255	2868	46	2766
20. ADJUSTED RESERVES (%) (19/2)X100	6.9	16.7	5.4	14.1	3.5	11.2	1.0	12.1	0.2	11.5
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	5.6	12.0	4.6	10.3	3.0	8.4	0.9	9.4	0.2	8.9

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

CURRENT CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1985

NORTHEAST POWER COORDINATING COUNCIL

(NPCC-U.S. ONLY)

	1985 SUMMER	1985 WINTER
1. PLANNED CAPABILITY (MW)	51084	53647
2. PEAK DEMAND (MW)	39522	37982
3. PLANNED RESERVES (1-2) (MW)	11562	15665
4. PLANNED RESERVES (%) (3/2)X100	29.3	41.2
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	2033	1403*
6. TOTAL CAPABILITY (1+5) (MW)	53117	55050
7. TOTAL RESERVES (6-2) (MW)	13595	17068
8. TOTAL RESERVES (%) (7/2)X100	34.4	44.9
9. SCHEDULED MAINTENANCE (MW)	4102	4533
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	49015	50517
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	9493	12535
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	24.0	33.0
13. FULL FORCED OUTAGES (MW)	3489	3664
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	45526	46853
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	6004	8871
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	15.2	23.4
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	2478	2602
18. ADJUSTED CAPABILITY (14-17) (MW)	43048	44251
19. ADJUSTED RESERVES (18-2) (MW)	3526	6269
20. ADJUSTED RESERVES (%) (19/2)X100	8.9	16.5
21. ADJUSTED CAPACITY MARGIN (%) (19/1)x100	6.9	11.7

1/ OTHER UNAVAILABLE CAPABILITY IS THE CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES .

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1986-1989

NORTHEAST POWER COORDINATING COUNCIL

(NPCC-U.S.ONLY)

	1986		1987		1988		1989	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	53052	56814	55059	56676	54989	56663	54939	56673
2. PEAK DEMAND (MW)	40207	38327	40565	38715	41213	39173	41801	39731
3. PLANNED RESERVES (1-2) (MW)	12845	18487	14494	17961	13776	17490	13138	16942
4. PLANNED RESERVES (%) (3/2)X100	31.9	48.2	35.7	46.4	33.4	44.6	31.4	42.6
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	2235	1234	2064	1423	2254	1466	2300	1488
6. TOTAL CAPABILITY (1+5) (MW)	55287	58048	57123	58099	57243	58129	57239	58161
7. TOTAL RESERVES (6-2) (MW)	15080	19721	16558	19384	16030	18956	15438	18430
8. TOTAL RESERVES (%) (7/2)X100	37.5	51.5	40.8	50.1	38.9	48.4	36.9	46.4
9. SCHEDULED MAINTENANCE (MW)	4260	4801	4421	4789	4416	4788	4412	4789
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	51027	53247	52702	53310	52827	53341	52827	53372
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	10820	14920	12137	14595	11614	14168	11026	13641
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	26.9	38.9	29.9	37.7	28.2	36.2	26.4	34.3
13. FULL FORCED OUTAGES (MW)	3623	3880	3761	3871	3756	3870	3752	3871
14. CAPABILITY AFTER FULL FORCED OUTAGES(10-13) (MW)	47404	49367	48941	49439	49071	49471	49075	49501
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	7197	11040	8376	10724	7858	10298	7274	9770
16. RESERVES (%) AFTER FULL FORCED OUTAGES(15/2)X100	17.9	28.8	20.6	27.7	19.1	26.3	17.4	24.6
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	2573	2755	2670	2749	2667	2748	2665	2749
18. ADJUSTED CAPABILITY (14-17) (MW)	44831	46612	46271	46690	46404	46723	46410	46752
19. ADJUSTED RESERVES (18-2) (MW)	4624	8285	5706	7975	5191	7550	4609	7021
20. ADJUSTED RESERVES (%) (19/2)X100	11.5	21.6	14.1	20.6	12.6	19.3	11.0	17.7
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	8.7	14.6	10.4	14.1	9.4	13.3	8.4	12.4

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1990-1994

NORTHEAST POWER COORDINATING COUNCIL

(NPCC-U.S.ONLY)

	1990		1991		1992		1993		1994	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	54928	56746	55341	56904	55200	56844	56099	57681	55949	57406
2. PEAK DEMAND (MW)	42410	40290	43202	41061	44004	41809	44560	42460	45390	43263
3. PLANNED RESERVES (1-2) (MW)	12518	16456	12139	15843	11196	15035	11539	15221	10559	14143
4. PLANNED RESERVES (%) (3/2)X100	29.5	40.8	28.1	38.6	25.4	36.0	25.9	35.8	23.3	32.7
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	2324	3047	3882	2773	3606	2779	3615	2782	3618	2786
6. TOTAL CAPABILITY (1+5) (MW)	57252	59793	59223	59677	58806	59623	59714	60463	59567	60192
7. TOTAL RESERVES (6-2) (MW)	14842	19503	16021	18616	14802	17814	15154	18003	14177	16929
8. TOTAL RESERVES (%) (7/2)X100	35.0	48.4	37.1	45.3	33.6	42.6	34.0	42.4	31.2	39.1
9. SCHEDULED MAINTENANCE (MW)	4411	4795	4444	4808	4433	4803	4505	4874	4493	4851
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	52841	54998	54779	54869	54373	54820	55209	55589	55074	55341
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	10431	14708	11577	13808	10369	13011	10649	13129	9684	12078
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	24.6	36.5	26.8	33.6	23.6	31.1	23.9	30.9	21.3	27.9
13. FULL FORCED OUTAGES (MW)	3752	3876	3780	3887	3770	3882	3832	3940	3821	3921
14. CAPABILITY AFTER FULL FORCED OUTAGES(10-13)(MW)	49089	51122	50999	50982	50603	50938	51377	51649	51253	51420
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	6679	10832	7797	9921	6599	9129	6817	9189	5863	8157
16. RESERVES (%) AFTER FULL FORCED OUTAGES(15/2)X100	15.7	26.9	18.0	24.2	15.0	21.8	15.3	21.6	12.9	18.9
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	2664	2752	2684	2760	2677	2757	2721	2798	2714	2784
18. ADJUSTED CAPABILITY (14-17) (MW)	46425	48370	48315	48222	47926	48181	48656	48851	48539	48636
19. ADJUSTED RESERVES (18-2) (MW)	4015	8080	5113	7161	3922	6372	4096	6391	3149	5373
20. ADJUSTED RESERVES (%) (19/2)X100	9.5	20.1	11.8	17.4	8.9	15.2	9.2	15.1	6.9	12.4
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	7.3	14.2	9.2	12.6	7.1	11.2	7.3	11.1	5.6	9.4

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

CURRENT CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1985

SOUTHEASTERN ELECTRIC RELIABILITY COUNCIL

(SERC)

	1985 SUMMER	1985 WINTER
1. PLANNED CAPABILITY (MW)	130670 a	135334
2. PEAK DEMAND (MW)	97317	95964
3. PLANNED RESERVES (1-2) (MW)	33353	39370
4. PLANNED RESERVES (%) (3/2)X100	34.3	41.0
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	149	-190
6. TOTAL CAPABILITY (1+5) (MW)	130819	135144
7. TOTAL RESERVES (6-2) (MW)	33502	39180
8. TOTAL RESERVES (%) (7/2)X100	34.4	40.8
9. SCHEDULED MAINTENANCE (MW)	8193	10651
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	122626	124493
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	25309	28529
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	26.0	29.7
13. FULL FORCED OUTAGES (MW)	8637	8946
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	113989	115547
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	16672	19583
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	17.1	20.4
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	4874	5048
18. ADJUSTED CAPABILITY (14-17) (MW)	109115	110499
19. ADJUSTED RESERVES (18-2) (MW)	11798	14535
20. ADJUSTED RESERVES (%) (19/2)X100	12.1	15.1
21. ADJUSTED CAPACITY MARGIN (%) (19/1)x100	9.0	10.7

a The summer 1985 planned capability has been reduced by 630 Mw because water conduit problems will prevent use of Bath County Units 1, 2 and 3 until after the summer peak, and has been increased by 1145 Mw because the operational date of Catawba 1 has been advanced, according to information received from the SERC office. The net change from the IE-411 report is +515 Mw.

1/ OTHER UNAVAILABLE CAPABILITY IS THE CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES .

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1986-1989

SOUTHEASTERN ELECTRIC RELIABILITY COUNCIL

(SERC)

	1986		1987		1988		1989	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	133414	137115	136973	140456	139705	143322	144265	145101
2. PEAK DEMAND (MW)	100086	97773	101913	100491	105344	102527	108085	104699
3. PLANNED RESERVES (1-2) (MW)	33328	39342	35060	39965	34361	40795	36180	40402
4. PLANNED RESERVES (%) (3/2)X100	33.3	40.2	34.4	39.8	32.6	39.8	33.5	38.6
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	-310	110	-310	-210	-210	-210	-210	-210
6. TOTAL CAPABILITY (1+5) (MW)	133104	137225	136663	140246	139495	143112	144055	144891
7. TOTAL RESERVES (6-2) (MW)	33018	39452	34750	39755	34151	40585	35970	40192
8. TOTAL RESERVES (%) (7/2)X100	33.0	40.4	34.1	39.6	32.4	39.6	33.3	38.4
9. SCHEDULED MAINTENANCE (MW)	8365	10791	8588	11054	8759	11279	9045	11419
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	124739	126434	128075	129192	130736	131833	135010	133472
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	24653	28661	26162	28701	25392	29306	26925	28773
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	24.6	29.3	25.7	28.6	24.1	28.6	24.9	27.5
13. FULL FORCED OUTAGES (MW)	8819	9063	9054	9284	9235	9474	9536	9591
14. CAPABILITY AFTER FULL FORCED OUTAGES(10-13) (MW)	115920	117371	119021	119908	121501	122359	125474	123881
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	15834	19598	17108	19417	16157	19832	17389	19182
16. RESERVES (%) AFTER FULL FORCED OUTAGES(15/2)X100	15.8	20.0	16.8	19.3	15.3	19.3	16.1	18.3
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	4976	5114	5109	5239	5211	5346	5381	5412
18. ADJUSTED CAPABILITY (14-17) (MW)	110944	112257	113912	114669	116290	117013	120093	118469
19. ADJUSTED RESERVES (18-2) (MW)	10858	14484	11999	14178	10946	14486	12008	13770
20. ADJUSTED RESERVES (%) (19/2)X100	10.8	14.8	11.8	14.1	10.4	14.1	11.1	13.2
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	8.1	10.6	8.8	10.1	7.8	10.1	8.3	9.5

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1990-1994

SOUTHEASTERN ELECTRIC RELIABILITY COUNCIL

(SERC)

	1990		1991		1992		1993		1994	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	144421	146605	148533	150563	149213	151956	151932	153984	152888	155516
2. PEAK DEMAND (MW)	110831	106796	113416	109593	116125	111887	119028	114613	121894	117088
3. PLANNED RESERVES (1-2) (MW)	33590	39809	35117	40970	33088	40069	32904	39371	30994	38428
4. PLANNED RESERVES (%) (3/2)X100	30.3	37.3	31.0	37.4	28.5	35.8	27.6	34.4	25.4	32.8
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	-210	-210	-210	-210	490	490	490	490	490	490
6. TOTAL CAPABILITY (1+5) (MW)	144211	146395	148323	150353	149703	152446	152422	154474	153378	156006
7. TOTAL RESERVES (6-2) (MW)	33380	39599	34907	40760	33578	40559	33394	39861	31484	38918
8. TOTAL RESERVES (%) (7/2)X100	30.1	37.1	30.8	37.2	28.9	36.2	28.1	34.8	25.8	33.2
9. SCHEDULED MAINTENANCE (MW)	9055	11538	9313	11849	9356	11959	9526	12119	9586	12239
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	135156	134857	139010	138504	140347	140487	142896	142355	143792	143767
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	24325	28061	25594	28911	24222	28600	23868	27742	21898	26679
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	21.9	26.3	22.6	26.4	20.9	25.6	20.1	24.2	18.0	22.8
13. FULL FORCED OUTAGES (MW)	9546	9691	9818	9952	9863	10044	10043	10178	10106	10280
14. CAPABILITY AFTER FULL FORCED OUTAGES(10-13)(MW)	125610	125166	129192	128552	130484	130443	132853	132177	133686	133487
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	14779	18370	15776	18959	14359	18556	13825	17564	11792	16399
16. RESERVES (%) AFTER FULL FORCED OUTAGES(15/2)X100	13.3	17.2	13.9	17.3	12.4	16.6	11.6	15.3	9.7	14.0
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	5387	5468	5540	5616	5566	5668	5667	5744	5703	5801
18. ADJUSTED CAPABILITY (14-17) (MW)	120223	119698	123652	122936	124918	124775	127186	126433	127983	127686
19. ADJUSTED RESERVES (18-2) (MW)	9392	12902	10236	13343	8793	12888	8158	11820	6089	10598
20. ADJUSTED RESERVES (%) (19/2)X100	8.5	12.1	9.0	12.2	7.6	11.5	6.9	10.3	5.0	9.1
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	6.5	8.8	6.9	8.9	5.9	8.5	5.4	7.7	4.0	6.8

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

CURRENT CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1985

SOUTHWEST POWER POOL

(SPP)

	1985 SUMMER	1985 WINTER
1. PLANNED CAPABILITY (MW)	65089	66880
2. PEAK DEMAND (MW)	47698	35828
3. PLANNED RESERVES (1-2) (MW)	17391	31052
4. PLANNED RESERVES (%) (3/2)X100	36.5	86.7
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	687	330
6. TOTAL CAPABILITY (1+5) (MW)	65776	67210
7. TOTAL RESERVES (6-2) (MW)	18078	31382
8. TOTAL RESERVES (%) (7/2)X100	37.9	87.6
9. SCHEDULED MAINTENANCE (MW)	1022	6849
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	64754	60361
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	17056	24533
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	35.8	68.5
13. FULL FORCED OUTAGES (MW)	5005	5143
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	59749	55218
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	12051	19390
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	25.3	54.1
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	1159	1190
18. ADJUSTED CAPABILITY (14-17) (MW)	58590	54028
19. ADJUSTED RESERVES (18-2) (MW)	10892	18200
20. ADJUSTED RESERVES (%) (19/2)X100	22.8	50.8
21. ADJUSTED CAPACITY MARGIN (%) (19/1)x100	16.7	27.2

NOTE: Planned capability and peak demand has been increased in each seasonal peak period by the total of Ponca City and Jonesboro data received after publication of the IE-411 report.

1/ OTHER UNAVAILABLE CAPABILITY IS THE CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES .

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1986-1989

SOUTHWEST POWER POOL

(SPP)

	1986		1987		1988		1989	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	67036	67113	66759	67036	66874	66785	66604	66553
2. PEAK DEMAND (MW)	48763	36779	49894	37731	51222	38846	52632	40928
3. PLANNED RESERVES (1-2) (MW)	18273	30334	16865	29305	15652	27939	13972	25625
4. PLANNED RESERVES (%) (3/2)X100	37.5	82.5	33.8	77.7	30.6	71.9	26.5	62.6
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	902	660	1035	868	641	363	323	281
6. TOTAL CAPABILITY (1+5) (MW)	67938	67773	67794	67904	67515	67148	66927	66834
7. TOTAL RESERVES (6-2) (MW)	19175	30994	17900	30173	16293	28302	14295	25906
8. TOTAL RESERVES (%) (7/2)X100	39.3	84.3	35.9	80.0	31.8	72.9	27.2	63.3
9. SCHEDULED MAINTENANCE (MW)	1052	6872	1048	6864	1050	6839	1046	6815
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	66886	60901	66746	61040	66465	60309	65881	60019
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	18123	24122	16852	23309	15243	21463	13249	19091
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	37.2	65.6	33.8	61.8	29.8	55.3	25.2	46.6
13. FULL FORCED OUTAGES (MW)	5155	5161	5134	5155	5143	5136	5122	5118
14. CAPABILITY AFTER FULL FORCED OUTAGES(10-13) (MW)	61731	55740	61612	55885	61322	55173	60759	54901
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	12968	18961	11718	18154	10100	16327	8127	13973
16. RESERVES (%) AFTER FULL FORCED OUTAGES(15/2)X100	26.6	51.6	23.5	48.1	19.7	42.0	15.4	34.1
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	1193	1195	1188	1193	1190	1189	1186	1185
18. ADJUSTED CAPABILITY (14-17) (MW)	60538	54545	60424	54692	60132	53984	59573	53716
19. ADJUSTED RESERVES (18-2) (MW)	11775	17766	10530	16961	8910	15138	6941	12788
20. ADJUSTED RESERVES (%) (19/2)X100	24.1	48.3	21.1	45.0	17.4	39.0	13.2	31.2
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	17.6	26.5	15.8	25.3	13.3	22.7	10.4	19.2

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1990-1994

SOUTHWEST POWER POOL

(SPP)

	1990		1991		1992		1993		1994	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	66952	67156	68957	69429	69457	70691	71326	72246	72490	72671
2. PEAK DEMAND (MW)	54024	41177	55530	42221	56854	43304	58208	44416	59623	45537
3. PLANNED RESERVES (1-2) (MW)	12928	25979	13427	27208	12603	27387	13118	27830	12867	27134
4. PLANNED RESERVES (%) (3/2)X100	23.9	63.1	24.2	64.4	22.2	63.2	22.5	62.7	21.6	59.6
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	25	-39	300	302	-247	-312	-342	-508	-361	-512
6. TOTAL CAPABILITY (1+5) (MW)	66977	67117	69257	69731	69210	70379	70984	71738	72129	72159
7. TOTAL RESERVES (6-2) (MW)	12953	25940	13727	27510	12356	27075	12776	27322	12506	26622
8. TOTAL RESERVES (%) (7/2)X100	24.0	63.0	24.7	65.2	21.7	62.5	21.9	61.5	21.0	58.5
9. SCHEDULED MAINTENANCE (MW)	1051	6877	1083	7110	1090	7239	1120	7398	1138	7442
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	65926	60240	68174	62621	68120	63140	69864	64340	70991	64717
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	11902	19063	12644	20400	11266	19836	11656	19924	11368	19180
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	22.0	46.3	22.8	48.3	19.8	45.8	20.0	44.9	19.1	42.1
13. FULL FORCED OUTAGES (MW)	5149	5164	5303	5339	5341	5436	5485	5556	5574	5588
14. CAPABILITY AFTER FULL FORCED OUTAGES(10-13)(MW)	60777	55076	62871	57282	62779	57704	64379	58784	65417	59129
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	6753	13899	7341	15061	5925	14400	6171	14368	5794	13592
16. RESERVES (%) AFTER FULL FORCED OUTAGES(15/2)X100	12.5	33.8	13.2	35.7	10.4	33.3	10.6	32.3	9.7	29.8
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	1192	1195	1227	1236	1236	1258	1270	1286	1290	1294
18. ADJUSTED CAPABILITY (14-17) (MW)	59585	53881	61644	56046	61543	56446	63109	57498	64127	57835
19. ADJUSTED RESERVES (18-2) (MW)	5561	12704	6114	13825	4689	13142	4901	13082	4504	12298
20. ADJUSTED RESERVES (%) (19/2)X100	10.3	30.9	11.0	32.7	8.2	30.3	8.4	29.5	7.6	27.0
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	8.3	18.9	8.9	19.9	6.8	18.6	6.9	18.1	6.2	16.9

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

CURRENT CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1985

ELECTRIC RELIABILITY COUNCIL OF TEXAS

(ERCOT)

	1985 SUMMER	1985 WINTER
1. PLANNED CAPABILITY (MW)	44368	45834
2. PEAK DEMAND (MW)	38464	29828
3. PLANNED RESERVES (1-2) (MW)	5904	16006
4. PLANNED RESERVES (%) (3/2)X100	15.3	53.7
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	654	654
6. TOTAL CAPABILITY (1+5) (MW)	45022	46488
7. TOTAL RESERVES (6-2) (MW)	6558	16660
8. TOTAL RESERVES (%) (7/2)X100	17.0	55.9
9. SCHEDULED MAINTENANCE (MW)	1331	6893
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	43691	39595
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	5227	9767
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	13.6	32.7
13. FULL FORCED OUTAGES (MW)	1464	1513
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	42227	38082
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	3763	8254
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	9.8	27.7
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	2525	2608
18. ADJUSTED CAPABILITY (14-17) (MW)	39702	35474
19. ADJUSTED RESERVES (18-2) (MW)	1238	5646
20. ADJUSTED RESERVES (%) (19/2)X100	3.2	18.9
21. ADJUSTED CAPACITY MARGIN (%) (19/1)x100	2.8	12.3

1/ OTHER UNAVAILABLE CAPABILITY IS THE CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES .

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1986-1989

ELECTRIC RELIABILITY COUNCIL OF TEXAS

(ERCOT)

	1986		1987		1988		1989	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	46784	47651	50496	50961	51759	52189	53276	54311
2. PEAK DEMAND (MW)	39663	30595	40809	32049	42372	33564	43917	35068
3. PLANNED RESERVES (1-2) (MW)	7121	17056	9687	18912	9387	18625	9359	19243
4. PLANNED RESERVES (%) (3/2)X100	18.0	55.7	23.7	59.0	22.2	55.5	21.3	54.9
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	656	756	683	683	696	696	724	674
6. TOTAL CAPABILITY (1+5) (MW)	47440	48407	51179	51644	52455	52885	54000	54985
7. TOTAL RESERVES (6-2) (MW)	7777	17812	10370	19595	10083	19321	10083	19917
8. TOTAL RESERVES (%) (7/2)X100	19.6	58.2	25.4	61.1	23.8	57.6	23.0	56.8
9. SCHEDULED MAINTENANCE (MW)	1404	7167	1515	7665	1553	7849	1598	8168
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	46036	41240	49664	43979	50902	45036	52402	46817
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	6373	10645	8855	11930	8530	11472	8485	11749
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	16.1	34.8	21.7	37.2	20.1	34.2	19.3	33.5
13. FULL FORCED OUTAGES (MW)	1544	1572	1666	1682	1708	1722	1758	1792
14. CAPABILITY AFTER FULL FORCED OUTAGES(10-13) (MW)	44492	39668	47998	42297	49194	43314	50644	45025
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	4829	9073	7189	10248	6822	9750	6727	9957
16. RESERVES (%) AFTER FULL FORCED OUTAGES(15/2)X100	12.2	29.7	17.6	32.0	16.1	29.0	15.3	28.4
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	2662	2711	2873	2900	2945	2970	3031	3090
18. ADJUSTED CAPABILITY (14-17) (MW)	41830	36957	45125	39397	46249	40344	47613	41935
19. ADJUSTED RESERVES (18-2) (MW)	2167	6362	4316	7348	3877	6780	3696	6867
20. ADJUSTED RESERVES (%) (19/2)X100	5.5	20.8	10.6	22.9	9.1	20.2	8.4	19.6
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	4.6	13.4	8.5	14.4	7.5	13.0	6.9	12.6

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1990-1994

ELECTRIC RELIABILITY COUNCIL OF TEXAS

(ERCOT)

	1990		1991		1992		1993		1994	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	54877	55640	56608	57696	58226	59568	60596	61662	62442	63924
2. PEAK DEMAND (MW)	45446	36745	46969	38441	48660	40052	50612	41859	52408	43581
3. PLANNED RESERVES (1-2) (MW)	9431	18895	9639	19255	9566	19516	9984	19803	10034	20343
4. PLANNED RESERVES (%) (3/2)X100	20.8	51.4	20.5	50.1	19.7	48.7	19.7	47.3	19.1	46.7
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	698	687	715	718	696	667	674	742	675	644
6. TOTAL CAPABILITY (1+5) (MW)	55575	56327	57323	58414	58922	60235	61270	62404	63117	64568
7. TOTAL RESERVES (6-2) (MW)	10129	19582	10354	19973	10262	20183	10658	20545	10709	20987
8. TOTAL RESERVES (%) (7/2)X100	22.3	53.3	22.0	52.0	21.1	50.4	21.1	49.1	20.4	48.2
9. SCHEDULED MAINTENANCE (MW)	1646	8368	1698	8677	1747	8959	1818	9274	1873	9614
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	53929	47959	55625	49737	57175	51276	59452	53130	61244	54954
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	8483	11214	8656	11296	8515	11224	8840	11271	8836	11373
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	18.7	30.5	18.4	29.4	17.5	28.0	17.5	26.9	16.9	26.1
13. FULL FORCED OUTAGES (MW)	1811	1836	1868	1904	1921	1966	2000	2035	2061	2109
14. CAPABILITY AFTER FULL FORCED OUTAGES(10-13)(MW)	52118	46123	53757	47833	55254	49310	57452	51095	59183	52845
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	6672	9378	6788	9392	6594	9258	6840	9236	6775	9264
16. RESERVES (%) AFTER FULL FORCED OUTAGES(15/2)X100	14.7	25.5	14.5	24.4	13.6	23.1	13.5	22.1	12.9	21.3
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	3123	3166	3221	3283	3313	3389	3448	3509	3553	3637
18. ADJUSTED CAPABILITY (14-17) (MW)	48995	42957	50536	44550	51941	45921	54004	47586	55630	49208
19. ADJUSTED RESERVES (18-2) (MW)	3549	6212	3567	6109	3281	5869	3392	5727	3222	5627
20. ADJUSTED RESERVES (%) (19/2)X100	7.8	16.9	7.6	15.9	6.7	14.7	6.7	13.7	6.1	12.9
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	6.5	11.2	6.3	10.6	5.6	9.9	5.6	9.3	5.2	8.8

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

CURRENT CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1985

WESTERN SYSTEMS COORDINATING COUNCIL

(WSCC-U.S. ONLY)

	1985 SUMMER	1985 WINTER
1. PLANNED CAPABILITY (MW)	112657	116219
2. PEAK DEMAND (MW)	81399	76340
3. PLANNED RESERVES (1-2) (MW)	31258	39879
4. PLANNED RESERVES (%) (3/2)X100	38.4	52.2
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	354	728
6. TOTAL CAPABILITY (1+5) (MW)	113011	116947
7. TOTAL RESERVES (6-2) (MW)	31612	40607
8. TOTAL RESERVES (%) (7/2)X100	38.8	53.2
9. SCHEDULED MAINTENANCE (MW)	8337	11122
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	104674	105825
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	23275	29485
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	28.6	38.6
13. FULL FORCED OUTAGES (MW)	5610	5788
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	99064	100037
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	17665	23697
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	21.7	31.0
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	3549	3661
18. ADJUSTED CAPABILITY (14-17) (MW)	95515	96376
19. ADJUSTED RESERVES (18-2) (MW)	14116	20036
20. ADJUSTED RESERVES (%) (19/2)X100	17.3	26.2
21. ADJUSTED CAPACITY MARGIN (%) (19/1)x100	12.5	17.2

1/ OTHER UNAVAILABLE CAPABILITY IS THE CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES .

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1986-1989

WESTERN SYSTEMS COORDINATING COUNCIL

(WSCC-U.S.ONLY)

	1986		1987		1988		1989	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	118861	120765	121523	124937	124166	126060	125460	127148
2. PEAK DEMAND (MW)	83151	78387	85834	80814	87657	82457	89558	84254
3. PLANNED RESERVES (1-2) (MW)	35710	42378	35689	44123	36509	43603	35902	42894
4. PLANNED RESERVES (%) (3/2)X100	42.9	54.1	41.6	54.6	41.6	52.9	40.1	50.9
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	679	727	653	701	652	700	651	699
6. TOTAL CAPABILITY (1+5) (MW)	119540	121492	122176	125638	124818	126760	126111	127847
7. TOTAL RESERVES (6-2) (MW)	36389	43105	36342	44824	37161	44303	36553	43593
8. TOTAL RESERVES (%) (7/2)X100	43.8	55.0	42.3	55.5	42.4	53.7	40.8	51.7
9. SCHEDULED MAINTENANCE (MW)	8796	11557	8993	11956	9188	12064	9284	12168
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	110744	109935	113183	113682	115630	114696	116827	115679
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	27593	31548	27349	32868	27973	32239	27269	31425
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	33.2	40.2	31.9	40.7	31.9	39.1	30.4	37.3
13. FULL FORCED OUTAGES (MW)	5919	6014	6052	6222	6183	6278	6248	6332
14. CAPABILITY AFTER FULL FORCED OUTAGES(10-13) (MW)	104825	103921	107131	107460	109447	108418	110579	109347
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	21674	25534	21297	26646	21790	25961	21021	25093
16. RESERVES (%) AFTER FULL FORCED OUTAGES(15/2)X100	26.1	32.6	24.8	33.0	24.9	31.5	23.5	29.8
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	3744	3804	3828	3936	3911	3971	3952	4005
18. ADJUSTED CAPABILITY (14-17) (MW)	101081	100117	103303	103524	105536	104447	106627	105342
19. ADJUSTED RESERVES (18-2) (MW)	17930	21730	17469	22710	17879	21990	17069	21088
20. ADJUSTED RESERVES (%) (19/2)X100	21.6	27.7	20.4	28.1	20.4	26.7	19.1	25.0
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	15.1	18.0	14.4	18.2	14.4	17.4	13.6	16.6

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1990-1994

WESTERN SYSTEMS COORDINATING COUNCIL

(WSCC-U.S.ONLY)

	1990		1991		1992		1993		1994	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	126130	127676	128175	129414	130379	132261	131277	134223	133414	134571
2. PEAK DEMAND (MW)	91658	85942	93556	88055	95734	90155	97865	92071	100125	92348
3. PLANNED RESERVES (1-2) (MW)	34472	41734	34619	41359	34645	42106	33412	42152	33289	42223
4. PLANNED RESERVES (%) (3/2)X100	37.6	48.6	37.0	47.0	36.2	46.7	34.1	45.8	33.2	45.7
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	650	558	609	657	607	655	605	653	603	624
6. TOTAL CAPABILITY (1+5) (MW)	126780	128234	128784	130071	130986	132916	131882	134876	134017	135195
7. TOTAL RESERVES (6-2) (MW)	35122	42292	35228	42016	35252	42761	34017	42805	33892	42847
8. TOTAL RESERVES (%) (7/2)X100	38.3	49.2	37.7	47.7	36.8	47.4	34.8	46.5	33.8	46.4
9. SCHEDULED MAINTENANCE (MW)	9334	12219	9485	12385	9648	12657	9714	12845	9873	12878
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	117446	116015	119299	117686	121338	120259	122168	122031	124144	122317
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	25788	30073	25743	29631	25604	30104	24303	29960	24019	29969
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	28.1	35.0	27.5	33.7	26.7	33.4	24.8	32.5	24.0	32.5
13. FULL FORCED OUTAGES (MW)	6281	6358	6383	6445	6493	6587	6538	6684	6644	6702
14. CAPABILITY AFTER FULL FORCED OUTAGES(10-13)(MW)	111165	109657	112916	111241	114845	113672	115630	115347	117500	115615
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	19507	23715	19360	23186	19111	23517	17765	23276	17375	23267
16. RESERVES (%) AFTER FULL FORCED OUTAGES(15/2)X100	21.3	27.6	20.7	26.3	20.0	26.1	18.2	25.3	17.4	25.2
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	3973	4022	4038	4077	4107	4166	4135	4228	4203	4239
18. ADJUSTED CAPABILITY (14-17) (MW)	107192	105635	108878	107164	110738	109506	111495	111119	113297	111376
19. ADJUSTED RESERVES (18-2) (MW)	15534	19693	15322	19109	15004	19351	13630	19048	13172	19028
20. ADJUSTED RESERVES (%) (19/2)X100	16.9	22.9	16.4	21.7	15.7	21.5	13.9	20.7	13.2	20.6
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	12.3	15.4	12.0	14.8	11.5	14.6	10.4	14.2	9.9	14.1

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

F. Small Area Perspective - The Electric Regions

Some of the nine Electric Reliability Councils have been divided into several Electric Regions for the purpose of better evaluating power supply reliability. Three Councils (MAAC, MAPP and ERCOT) have not been so subdivided; each of these is designated as a Council and as an Electric Region.

ECAR has been divided into 7 Regions for the purposes of examining the capacity, demand, energy and reserve projections of smaller utility groupings than that of the entire Council area. However, the strong transmission network of ECAR makes for greater cohesiveness among the Regions in regard to capacity transfers and operational considerations in emergency situations. Therefore, ECAR and its Regions have been discussed, in the "Council" section of this report, from an integrated point of view, and no individual Regional discussions are included in Section F for ECAR.

Tables G and H summarize the summer and winter adjusted reserves of all 26 Electric Regions. Table J focuses on those Regions for which at some time in the period 1985-1994 adjusted reserves of 5% or less are projected in Tables ER1 through ER27, which provide year-by-year data for each Region on capability, demand, net transactions, capacity unavailability and reserves.

Table G

Regional Percent Adjusted Reserves--Summer *

1985-1994

Region	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
1 APS	-30.4	12.0	11.2	8.0	5.3	5.1	5.6	3.6	5.5	3.8
2 WOIM	10.9	10.9	9.5	7.7	10.6	8.8	11.2	9.4	7.5	5.6
13 WPANCO	- 8.4	- 0.1	- 0.1	3.5	1.7	0.6	- 1.2	- 2.9	- 3.2	- 5.1
14 CDH	6.5	4.6	2.3	- 0.3	- 2.8	- 4.6	5.6	5.3	3.3	2.5
15 KY	31.6	28.2	25.5	27.0	23.5	20.5	17.7	15.5	20.6	26.0
16 IND	12.1	19.1	14.8	10.7	8.4	7.1	5.2	4.1	4.9	3.4
18 LMS	4.7	4.2	2.2	2.2	- 1.3	1.2	1.2	0.9	0.4	- 1.2
5 PJM	6.3	7.6	8.8	7.5	5.9	4.8	3.6	3.0	1.9	0.3
6 CECO	- 7.3	-10.1	0.0	1.2	- 0.7	- 2.5	- 4.5	- 6.5	-8.4	-10.2
17 SCIM	14.5	12.6	18.5	17.0	15.7	14.4	13.0	11.5	14.2	12.3
19 WIUM	12.8	15.9	10.2	8.6	7.0	5.2	4.0	1.6	0.8	- 0.2
20 MAPP	16.0	13.8	11.7	11.8	9.2	6.9	5.4	3.5	1.0	0.2
3 NEPOOL	0.1	4.9	10.3	8.5	6.5	4.4	10.0	5.4	3.7	0.9
4 NYPP	12.2	13.1	13.3	12.2	11.1	10.0	9.9	8.5	10.3	8.7
7 FCG	23.1	19.1	20.7	18.6	17.9	14.2	11.2	8.2	4.0	- 0.6
9 SOCO	17.4	14.7	16.2	12.9	18.8	15.3	16.8	17.0	18.7	18.2
11 TVA	17.2	16.3	13.7	12.5	15.0	12.6	14.6	12.2	10.5	8.7
12 VACAR	- 1.5	- 0.8	1.5	1.5	- 1.1	- 2.8	- 1.6	- 2.7	- 2.3	- 3.4
8 MSGS	27.3	30.2	26.3	22.0	15.2	10.4	13.3	9.6	10.6	9.2
21 MOKN	24.7	23.7	20.7	16.8	15.0	12.6	14.9	12.6	10.8	12.2
22 OKLA	17.3	18.4	16.4	13.5	10.8	9.9	7.0	5.1	5.7	4.0
23 ERCOT	3.2	5.5	10.6	9.1	8.4	7.8	7.6	6.7	6.7	6.1
24 RMPA	27.0	23.5	19.3	16.1	12.8	9.7	14.6	15.1	11.6	11.6
25 NWPP	34.3	33.4	31.1	38.5	36.6	36.0	34.0	37.4	34.8	36.4
26 AZNM	16.3	24.3	26.9	25.0	28.0	25.2	26.6	22.6	19.3	16.4
27 CASN	10.1	16.1	15.8	13.4	12.7	11.2	10.9	10.1	9.6	8.6

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* After allowance for scheduled capacity imports and exports, and unavailability of generating capacity because of scheduled maintenance, forced outages and other reasons.

% Adjusted Reserve = (Adjusted Capability - Peak Demand) x 100%/Peak Demand

where Adjusted Capability = Net Dependable Capability - Scheduled Maintenance - Forced Outages - Other Outages.

Table H

Regional Percent Adjusted Reserves--Winter *

1985/86-1994/95

Region	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
1 APS	12.6	5.2	3.7	0.5	- 1.6	- 1.8	- 1.1	0.5	- 1.1	0.7
2 WOIM	15.4	12.3	11.6	14.2	11.9	12.5	11.6	9.4	7.3	5.6
13 WPANCO	8.4	7.9	11.5	10.0	9.1	7.2	5.3	3.5	3.2	1.2
14 CDH	14.5	12.0	9.1	6.4	4.4	0.5	11.8	9.5	8.3	8.3
15 KY	31.5	28.0	22.9	25.5	22.0	18.4	15.1	20.1	25.5	23.1
16 IND	20.6	25.1	17.7	14.7	11.3	9.0	6.6	5.6	6.2	3.8
18 LMS	20.3	17.7	15.2	13.4	16.5	16.2	15.9	15.3	13.4	11.6
5 PJM	20.3	19.2	19.0	16.3	13.4	11.3	8.4	6.2	5.8	3.8
6 CECO	12.3	20.8	26.4	21.4	19.0	16.7	14.4	12.1	9.9	7.8
17 SCIM	30.8	35.5	32.6	29.2	25.9	22.7	19.4	16.3	17.7	14.5
19 WIUM	23.0	25.7	19.4	17.4	14.9	13.2	10.6	9.2	8.0	6.6
20 MAPP	25.1	25.2	24.3	21.0	18.1	16.7	14.1	11.2	12.1	11.5
3 NEPOOL	3.3	14.0	14.0	13.0	11.3	18.4	13.3	10.4	8.4	5.0
4 NYPP	22.2	22.3	20.5	19.0	17.6	16.1	15.8	14.3	15.6	13.8
7 FCG	7.8	7.3	8.1	7.6	6.3	4.2	1.9	- 1.9	- 4.1	- 7.6
9 SOCO	31.2	29.3	31.0	32.4	34.8	32.9	25.4	35.7	36.5	35.5
11 TVA	22.4	20.4	13.4	16.5	18.9	16.7	18.4	16.6	14.7	13.0
12 VACAR	6.2	8.0	8.7	6.4	4.0	2.6	3.2	3.6	2.5	3.0
8 MSGS	51.8	48.3	46.2	39.3	26.2	28.7	34.5	31.4	30.6	27.2
21 MOKN	58.8	56.1	50.9	45.0	42.1	37.5	40.1	37.0	34.0	35.7
22 OKLA	42.4	41.5	37.9	33.2	29.2	27.9	24.8	23.7	24.0	20.4
23 ERCOT	18.9	20.8	22.9	20.2	19.6	16.9	15.9	14.7	13.7	12.9
24 RMPA	30.6	27.3	23.3	20.6	18.0	16.1	18.5	18.7	15.3	18.8
25 NWPP	18.1	18.4	22.1	20.4	18.3	16.2	13.6	14.5	15.5	19.5
26 AZNM	38.3	43.6	42.8	40.8	43.8	42.6	44.4	40.8	36.4	35.6
27 CASN	30.7	33.7	32.8	30.6	29.9	27.6	27.3	26.5	25.3	24.5

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* After allowance for scheduled capacity imports and exports, and unavailability of generating capacity because of scheduled maintenance, forced outages and other reasons.

% Adjusted Reserve = (Adjusted Capability - Peak Demand) x 100%/Peak Demand

where Adjusted Capability = Net Dependable Capability - Scheduled Maintenance - Forced Outages - Other Outages.

Table J
Regions With Projected Low Adjusted Percent Reserves *
1985-1994

Region		1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
1 APS	S	-30.4	+	+	+	+	+	+	3.6	+	3.8
	W	+	+	3.7	0.5	-1.6	-1.8	-1.1	0.5	-1.1	0.7
13 WPANCO	S	-8.4	-0.1	-0.1	3.5	1.7	0.6	-1.2	-2.9	-3.2	-5.1
	W	+	+	+	+	+	+	+	3.5	3.2	1.2
14 CDH	S	+	4.6	2.3	-0.3	-2.8	-4.6	+	+	3.3	2.5
	W	+	+	+	+	4.4	0.5	+	+	+	+
16 IND	S	+	+	+	+	+	+	+	4.1	4.9	3.4
	W	+	+	+	+	+	+	+	+	+	3.8
18 LMS	S	4.7	4.2	2.2	2.2	-1.3	1.2	1.2	0.9	0.4	-1.2
	W	+	+	+	+	+	+	+	+	+	+
5 PJM	S	+	+	+	+	+	4.8	3.6	3.0	1.9	0.3
	W	+	+	+	+	+	+	+	+	+	3.8
6 CECO	S	-7.3	-10.1	0.0	1.2	-0.7	-2.5	-4.5	-6.5	-8.4	-10.2
	W	+	+	+	+	+	+	+	+	+	+
19 WIUM	S	+	+	+	+	+	+	4.0	1.6	0.8	-0.2
	W	+	+	+	+	+	+	+	+	+	+
20 MAPP	S	+	+	+	+	+	+	+	3.5	1.0	0.2
	W	+	+	+	+	+	+	+	+	+	+
3 NEPOOL	S	0.1	4.9	+	+	+	4.4	+	+	3.7	0.9
	W	3.3	+	+	+	+	+	+	+	+	5.0
7 FCG	S	+	+	+	+	+	+	+	+	4.0	-0.6
	W	+	+	+	+	+	4.2	1.9	-1.9	-4.1	-7.6
12 VACAR	S	-1.5	-0.8	1.5	1.5	-1.1	-2.8	-1.6	-2.7	-2.3	-3.4
	W	+	+	+	+	4.0	2.6	3.2	3.6	2.5	3.0
22 OKLA	S	+	+	+	+	+	+	+	+	+	4.0
	W	+	+	+	+	+	+	+	+	+	+
23 ERCOT	S	3.2	+	+	+	+	+	+	+	+	+
	W	+	+	+	+	+	+	+	+	+	+

* For estimating purposes, "Low" is considered 5%(or less) of peak demand.

S = Summer; W = Winter

+ = Adjusted Percent Reserve greater than 5%.

New England Power Pool (NEPOOL)
Electric Region 3

The peak demand forecast for 1985 summer is 17,100 MW, which is 5.08% more than the reported 1984 summer peak demand. For winter 1985-86, the projected peak demand is 17,400 MW, 2.72% greater than the peak reported for winter 1984-85. According to the NEPOOL section of the NPCC IE-411 report, the demand projections were obtained by the use of the "NEPOOL Model for Long-Range Forecasting of Electric Energy and Demand". Included in the assumptions underlying the use of the model and its input data are the prospective use of utility system load management procedures. These procedures, it is estimated by NEPOOL, will reduce the otherwise-expected peak loads by about 1000 MW. The forecasting model, in use for several years by NEPOOL, projected a peak demand for summer 1984 (as reported in the 1984 NPCC EP-411) of 16,071 MW. The actual reported peak was 16,274 MW, or 1.26% more than the forecast. The winter peak forecast by the model in 1984 was 16,468 MW and the actual reported peak for winter 1984-85 was 16,940 MW, 2.87% more than projected. The energy projection for 1984 was 90,963 Gwh and the actual energy requirement was 92,195 Gwh, 1.35% more than the model's projection. At least for 1984, it appears, the model's projections tallied well with actual experience.

The low adjusted reserve margin of 0.1% for summer 1985 and the scarcely better 3.3% for winter 1985-86 (see Table ER3 p. 1) indicate that Region 3 could have less than adequate reliability in prospect for the peak load seasons of 1985. Although capacity and energy purchases beyond what are now scheduled may be available from Canada, and from other Electric Regions in the U.S., it appears that uninterrupted supply over the entire New England area, without voltage reductions, is in question at least for 1985 summer and the following winter. For the period 1986-94, reserve margins improve, but are still low in some summer periods, especially in summer 1994. NEPOOL projects that its demand characteristic, summer-peaking through 1987, will change to winter-peaking in 1988 and remain so through 1994.

NEPOOL notified the Federal Energy Regulatory Commission (by letter dated April 29, 1985) that a capacity shortage may be experienced under extreme weather conditions during the remainder of 1985, especially in summer. NEPOOL does not anticipate service interruptions, although voltage reductions and public appeals for reduced power use may be necessary. It may not be possible to carry full operating reserves at all times.

New York Power Pool (NYPP)
Electric Region 4

The NYPP peak demand forecast for the summer of 1985 is 22,422 MW. This value is 2.5% more than the 1984 summer peak demand. For the 1985-86 winter peak demand is projected to be 20,582 MW which is 0.99% greater than the 1984-85 winter peak. 1/

Major generating units planned for completion thru 1994 are:

	Summer MW	Type	Effective Date
Shoreham	809	Nuclear	Oct. 1985
Nine Mile Point 2	1080	Nuclear	Nov. 1986
Niagara Falls	300	Hydro	Mar. 1991
Prattsville	1000	Pumped Hydro	May 1993

Several small hydro units are also planned, ranging from 1 MW up to 49 MW. Power Authority of NY projects a 40 MW refuse-burning unit for July 1992. Transmission additions for the 1985-94 decade consist of 63.8 miles at 765 kV, 384.3 miles at 345 kV and 171.8 miles at the 138/115 kv level, for a total of 619.9 miles. Although NYPP as a Region has adequate power supply for summer 1985, the Long Island Lighting Co. (LILCO) service area in that Region may face difficulties, according to a report issued by the New York Public Service Commission. LILCO itself has not reported to FERC that it expects a power shortage.

Planned reserves for NYPP are 37.2% in summer 1985, with the adjusted reserve being 12.2%, after consideration of outages for maintenance, unplanned outages (forced outages) and outages of capacity for other reasons and net imports of capacity. Through the summer of 1994 the summer adjusted reserves fluctuate between 8.5% and 13.3%. These adjusted reserves appear adequate to withstand the usual contingencies that affect electric systems.

The planned reserve for winter 1985-86 is 58.5%, well in excess of the historical level usually considered adequate. The corresponding adjusted reserve is 22.3%; therefore NYPP is considered to have adequate power supply for winter 1985-86. In succeeding winters, through that of 1994-95, the minimum adjusted reserve is 13.9%.

On the basis of the projected adjusted reserves, NYPP has sufficient generating capacity to provide reliable electric service from summer 1985 through the winter of 1994-95.

1/ For the purposes of this report, DOE staff has reduced by the amount of the NYPA export to MAAC the peak demands reported for 1985-1994 by NYPP in its IE-411 report. This export by NYPA to the MAAC area is reported by MAAC as an import of capacity. Staff has increased the scheduled exports reported by NYPP to include the export (magnitudes as reported in the MAAC IE-411, Item 2C).

Commonwealth Edison Company (CECO)
Electric Region 6

The peak demand forecast of Region 6 for the 1985 summer is 14,950 MW. This is an increase of 2.59% above the actual 1984 summer peak demand. Planned reserves excluding imports from outside the region are 24.9%.

The 1985-86 winter peak demand forecast is 11,630 MW, an increase of 5.40% over the actual 1984-85 winter peak demand. Planned reserves excluding imports from outside the region are forecast to be 64.8%.

Although the planned summer reserves appear adequate, adjustments for scheduled purchases and sales, scheduled maintenance, forced outages and other unavailability of capacity produce negative or very low adjusted reserves in all summer periods thru 1994.

Short lead time new generating capacity, or emergency power purchases, in addition to currently scheduled purchases, are options available to CECO in the near term. For 1990 and later, new units of moderate size may be feasible. Other systems within and outside of MAIN can supply capacity through available high-voltage interconnections. At the time of its projected peak load for the summer of 1985, CECO's net capacity import is projected to be 1.5% of the peak demand whereas in 1984 the percentage was 4.1%. Adequate transmission capacity exists in this region to continue to import electricity as required. Neighboring regions should have the capacity available to provide any assistance required by CECO.

CECO currently has 4 new nuclear units scheduled for initial operation during the 1985-1987 period, totaling 4,420 MW (summer rating). Future power supply situation in this region would be improved by accelerating the construction schedules and licensing of these nuclear units.

A delay of the in-service date of any of the nuclear units will result in deterioration of the unsatisfactory adjusted summer reserve scenario in the next 10 years. Winter adjusted reserves are at a satisfactory level.

Transmission construction projected by CECO consists of 21.5 miles of 345 kV line by winter 1985-86 and 107.5 miles of 345 kV line by the following winter. No transmission additions are projected beyond 1986.

Florida Electric Power Coordinating Group (FCG)
Electric Region 7

The 1985 summer peak demand for the Florida Electric Power Coordinating Group (FCG) is forecast to be 20,706 MW. This is an increase of 2.10% over the actual 1984 summer peak. Planned reserves are expected to be 30.5%. The 1985/86 winter peak demand is estimated at 23,470 MW, 2.74% greater than the 1984/85 actual winter peak. Planned reserves for the winter are 19.5%.

The projected generating capacity changes are:

Year	Total Additions Or Upratings	Total Retirements 1/ Or Deactivation	Net Change
	Summer MW		
1985	456	990	- 534
1986	8	11	- 3
1987	965	0	+ 965
1988	550	35	+ 515
1989	176	0	+ 176
1990	130	22	+ 108
1991	206	9	+ 197
1992	56	0	+ 56
1993	1146	22	+1124
1994	266	18	+ 248
Total	3959	1107	+2852

The Florida Region will import from the Southern Region between 2000 MW and 2500 MW during each of the summer peak load periods from 1985 thru 1992, 1200 MW in summer 1993 and 600 MW in summer 1994. Winter peak period imports are of similar magnitude and pattern. In addition to these firm scheduled imports, the Southern Region will transmit to Florida long-term non-firm capacity of 875 MW from summer 1985 thru summer 1986, and between 50 and 100 MW from winter 1986-87 thru winter 1991-92. No long-term non-firm capacity imports are scheduled after the winter of 1991-92. There are no contracted capacity exports from Florida to any other Electric Region.

1/ Retirement is the removal of a unit from a company's books and dismantling of the facility. Deactivation is the placing of a unit in "inactive reserve", which means that the unit is not removed from the books and may be available for future use. A unit in "inactive reserve" may require several weeks or months to be placed in condition for normal operation.

Florida's summer period adjusted reserves are well above the level regarded as adequate, thru the summer of 1992. By summer 1993 the adjusted reserve is down to 4.0% and it becomes -0.6% in summer 1994. By 1993 it may be possible to re-establish the 2000+ MW firm capacity transfer from the Southern Electric Region or rely on an increase in the non-firm capacity availability. It may also be possible to activate the "inactive reserve" capacity, which by 1992 year-end is expected to total 1006 MW. Construction of additional new generating capacity is also a possibility.

The winter peak period adjusted reserves in Florida are in general lower than those of summer, but do not reach an undesirably low level until the winter of 1990-91. Following that winter, the adjusted reserves decline precipitously to -7.6% by the winter of 1994-95. Measures taken to improve the summer 1993 reserve position should also affect the winter reserves, but the magnitude of the remedial steps should be greater, and somewhat earlier, for the winter periods.

Florida has no EHV transmission at the 765 kV or 345 kV levels, but does have 500 kV lines in the peninsula and interconnecting the peninsular system with the Southern Electric Region. An additional 191.3 miles of 500 kV line is to be constructed by mid-1990, as well as numerous 230 kV transmission lines.

Middle South-Gulf States Group (MSGS)
Electric Region 8

The peak demand projected for summer 1985 is 20,113 MW, which includes the demand of the Jonesboro, Arkansas, system. In 1984 the Jonesboro data were not available. Therefore, the proper measure of demand growth over summer 1984 is the comparison of MSGS demand without Jonesboro in 1985; this is 20,003 MW. By this measure, projected summer 1985 peak demand exceeds actual summer 1984 peak demand by 1.80%. Treated similarly, the projected change from winter 1984-85 to winter 1985-86 is a negative 1.82%.

Total generating capacity including Jonesboro is planned to increase from 25,890 MW in summer 1985 to 29,795 MW in winter 1994. Among the new units to be completed are Grand Gulf 1, a 1,250 MW nuclear unit scheduled for June 1985 and Grand Gulf 2, a 1,250 MW nuclear unit scheduled for April 1991. Each of the Grand Gulf units is owned 90% by Middle South Energy and 10% by South Mississippi Electric Power Association (a system in SERC Electric Region ER9).

Planned reserve for 1985 summer is 38.7%. Planned summer reserve during the ten-year study period (1985-1994) ranges from a low of 22.3% during the summer of 1994 to a high of 41.5% during the summer of 1986. Adjusted summer reserve during the same period is expected to range from a low of 9.2% during the summer of 1994 to a high of 30.2% during summer of 1986. Winter planned reserve for this period is expected to range from a low of 56.7% during 1989/90 winter to a high of 87.7% during 1985/86 winter. Adjusted winter reserve is expected to range from a low of 26.2% during 1989/90 winter to a high of 51.8% during 1985/86 winter.

Present bulk transmission plans for this region show that new construction totalling 3467.8 miles is projected for 1985-94, at voltages of 230 kV, 345 kV, ±400 kV DC and 500 kV. No construction above 500 kV is contemplated, and none exists at present. The ±400 kV DC construction is a 155 mile line scheduled for 1989, to run from the Walker substation of Southwestern Electric Power Co., in the SPP portion of Texas to the South Texas Project Nuclear Plant in the ERCOT portion of Texas.

Southern Company Group (SOCO)
Electric Region 9

The Southern Company (SOCO) Region's peak demand for summer 1985 is forecast to be 23,063 MW, up 2.77% from the 1984 summer's peak. For the 1985/86 winter season, SOCO's peak demand is estimated to be 18,901 MW, an increase of 1.55% above the 1984/85 winter. Planned reserves for the summer are 40.5% and for winter, 72.2%.

For the 1985-94 period, the Region projects a total of 7700 MW of new generating capacity and retirement of 814 MW of existing capacity. The net increase of generating capacity is 6,886 MW. As loads increase year by year and changes in generating capacity and net imports occur, the reserves fluctuate. Adjusted reserves for the summer peak periods range between a minimum value of 12.9% in 1988 and a maximum value of 18.8% in 1989. For the winter peak periods, adjusted reserves fall with the range of 36.5% (winter 1993-94) and 25.4% (winter 1991-92). The adjusted reserves take into account the net of scheduled imports and exports of capacity, scheduled maintenance of generating units, forced outages and other reasons for generating capacity unavailability.

Tennessee Valley Authority (TVA)
Electric Region 11

The TVA Electric Region has historically been winter-peaking, with each winter's peak demand exceeding the peak demand of the preceding summer. The magnitude of the difference between summer and winter peaks was a factor in the large scheduled diversity exchange of 1500 MW, which took place between SPP and TVA for many years. However, the gap between TVA's winter and summer peak demands has been decreasing for some time. This change in load pattern led to a significant change in the diversity interchange arrangements. TVA reports that in 1984 the summer peak load was 4,236 MW less than the peak load of the following winter. In 1985-1988 there is a transition period with the larger peak alternating between winter and summer. From 1988 thru 1994, TVA projects the summer peaks will exceed those of the following winter. The 1985 summer peak demand was 81.4% of the following winter's peak. From 1986 through 1994, the summer peak is projected to range between 97.2% and 102.3% of the peak for the following winter.

TVA's planned reserves in the 1985-1994 decade vary between 39.1% in summer 1994 and 54.2% in winter 1985-86. The smallest adjusted reserve is 8.7% (summer 1994) and the largest is 22.4% (winter 1985-86). TVA has generating reserves adequate for its own needs and sufficient to provide assistance to other Regions.

The only new generating capacity projected in the IE-411 1985 report is vested in 4 nuclear generating units:

Unit	Summer MW	Effective Date
Watts Bar 1	1170	October 1985
Watts Bar 2	1170	April 1988
Bellefonte 1	1212	April 1989
Bellefonte 2	1212	April 1991

TVA plans to install a research-oriented 200 Mva generating unit at its Shawnee Steam Plant in the late 1980's, to demonstrate reduction of air pollution emissions by atmospheric fluidized-bed coal combustion technology.

TVA has an extensive EHV network of 500 kV transmission lines, and plans to construct 79 miles additional at that level, as well as upgrading 98 miles of existing 161 kV line to 500 kV during 1985-94. There is no indication that TVA needs, or plans to introduce, DC facilities or to construct lines at voltages higher than 500 kV.

Virginia-Carolinas Group (VACAR)
Electric Region 12

The VACAR Region's peak demand for summer 1985 is forecast at 33,805 MW, an increase of 7.5% over the peak demand of summer 1984. For the winter 1985-86 peak the estimate is 33,329 MW, a decrease of 6.7% from the preceding winter. Reserves for summer 1985 are: planned 22.4%, adjusted -1.5%. These summer reserves take into account the changes in generating capability caused by water conduit problems at the Bath County Pumped Hydro Project, and the expected commercial operation of the Catawba 1 Nuclear Unit by June 1. Virginia Electric and Power Co. (a VACAR system) is entitled to 210 MW from each of the 350 MW Bath Creek generating units; the remaining 140 MW is allocated to Allegheny Power System (Region 1 in ECAR). Units 1, 2 and 3 of Bath County had been included 1/ in the net dependable capability projected by VACAR (and APS) for summer 1985 in the IE-411 report. However, failure of part of the water intakes for these units makes them unavailable until fall 1985 at the earliest. The Catawba unit, (Duke Power Co, in VACAR) rated at 1145 MW, had been scheduled for an unspecified date in 1985; its commercial date has been advanced to June 1 and in Table ER12 of this report its capacity is included for summer 1985. 1/

VACAR summer adjusted reserves are low or negative for the entire 1985-94 period even tho VACAR has scheduled a relatively large net import of capacity for each summer period. It appears that the VACAR systems in 1985-88 may need to arrange for spot purchases of capacity or the usual measures that electric utilities resort to when they experience short-term capacity shortages during peak load periods. The projected persistence of low adjusted reserves may indicate a need for new generating capacity by VACAR systems. Between 1985 and 1988 the lead-time is too short for the planning and construction of large units, but it may be possible to accomplish the work necessary for medium-sized units to be in operation by the summer of 1989.

From winter 1985-86 through winter 1988-89 the adjusted reserves of VACAR are adequate. Beginning in winter 1989-90 and continuing through the 1994-95 winter, the adjusted reserves fall below the 5% level used as a warning signal. Taken together, the adjusted reserves of summer and winter indicate the advisability of a review of VACAR's generating capacity plans.

Transmission lines in VACAR are at the 500 kV, 230 kV and lower voltage levels. There is no 345 kV, no DC, and no 765 kV. All of the proposed bulk power lines in the IE-411 report, for the period 1985-1994, are at the 500 kV and 230 kV levels. VACAR reports that DC applications do not appear logical for the foreseeable future, and no reference is made to consideration of AC voltage levels different from those currently in service.

1/ According to information received from the SERC office subsequent to publication of the SERC IE-411 Report for 1985.

South Central Illinois-East Missouri Group (SCIM)
Electric Region 17

The peak demand forecast for this region for 1985 summer is 12,959 MW. This is a decrease of 2.28% from the 1984 summer actual demand. Planned reserves are 32.9% for the summer of 1985.

The 1985-86 winter peak demand anticipated is 10,523 MW, up from 10,351 MW in 1984-85 winter by 1.66%. This demand results in planned reserves of 64.8%.

Adjusted reserves for summer 1985 are 14.5% and for 1985/86 winter are 30.8%. Summer adjusted reserves for the remainder of the 10-year forecast period range between 11.5% in 1992 and 18.5% in 1987. Winter adjusted reserves for the remainder of the 10-year forecast period range from a low of 14.5% in 1994-95 to a high of 35.5% in 1986-87. Adjusted reserves appear adequate to provide reliable electric power supply through the forecast period and to assist neighboring regions if necessary.

The major capacity addition for the next 10 years is one nuclear unit at 950 MW (Clinton 1, scheduled for November 1986).

The highest transmission voltage in Region 17 is 345 kV. The only planned addition is one 26-mile circuit at 345 kV.

In MAIN's report, the data is listed by subregions and utilities within those subregions. DOE staff has combined the data of the South Central Illinois Subregion (SCIL) and the East Missouri Subregion (EMO) to arrive at totals for Electric Region 17.

Wisconsin-Upper Michigan Systems Group (WIUM)
Electric Region 19

The WIUM peak demand forecast for 1985 summer is 7,246 MW. This is a 1.44% decrease from 7,352 MW in 1984 summer. The planned reserves for summer 1984 are 35.0%.

The 1985-86 winter peak demand forecast is 6,743 MW, versus 6,411 MW for 1984-85 winter. This is an increase of 5.18%. The resulting planned reserves are 47.9%.

The adjusted reserves of the WIUM Region are adequate in all the peak load periods from 1985 summer through 1990-91 winter. They are also adequate for all the winter periods 1991-94. In the summer of 1991 and later summers the adjusted reserves are projected to be lower than the 5% level. Capacity imports appear to be indicated for the 1991 thru 1994 summers, and should be available from Region 17.

Major changes to installed generating capacity during the period 1984-1994 consist of the addition of two coal-fired units totaling 960 MW.

The highest transmission voltage in this Electric Region is 345 kV. No higher voltage level is projected. Two lines totalling 32.4 miles are to be constructed in the 1985-94 period.

Missouri-Kansas Group (MOKN)
Electric Region 21

The peak demand forecast for summer 1985 is 11,071 MW, an increase of 4.6% over the actual 1984 summer peak. For winter 1985-86, the forecast is a peak demand of 8,227 MW, 3.7% more than the peak of winter 1984-85.

Planned reserves are 37.1% for 1985 summer and in the later summers of the ten-year period range from 23.5% to 25.2%. For the winter periods, planned reserve is between 61.6% and 87.2% for the ten-year period. Adjusted reserves, after allowing for scheduled maintenance, forced outages and other reasons why generating capacity actually available would be less than the installed (planned) amount, and after factoring in the net of capacity purchases and sales, are adequate. The summer peak period reserves are in the range of 10.8% to 23.7% and winter reserves for the peak period are from 34.0% to 58.8%.

Three large generating units comprise the major additions to capacity from 1985 thru 1994. These are the Wolf Creek No. 1 nuclear unit, rated at 1117 MW (June 1985), the Watson No. 1 coal unit, rated at 630 MW (June 1991) and the Jeffrey Energy Center No. 4 coal unit, rated at 680 MW (June 1994).

The highest transmission voltage in the MOKN Region is 345 kV; there are some 230 kV lines and a larger number of lines at lower voltage levels (115 kV-161 kV). No AC voltage higher than 345 kV is contemplated for this Region. A preliminary study is underway for a DC transmission line (voltage not specified) that would run from "mine-mouth" powerplants in Wyoming thru Nebraska to Missouri.

Oklahoma Group (OKLA)
Electric Region 22

For summer 1985 the forecast peak demand is 16,514 MW, including the Ponca City data reported after publication of the IE-411 Report. Without Ponca City the increase over the 1984 summer peak would be 7.1%; with Ponca City the increase is 7.7%. For winter 1985-86, the projected peak is 12,399 MW including Ponca City (12,360 MW without) for an increase of 5.3% over the preceding winter.

Planned reserves are in the range of 18.5% (summer 1994) to 85.0% (winter 1985-86) and adjusted reserves are in the range of 4.0% (summer 1994) to 42.4% (winter 1985-86). The summer of 1994 is the only peak period, in the ten years of the forecast, for which adjusted reserve is less than the 5% level. It appears that Region 22 has adequate generating capacity for meeting its load requirements, especially since it is a net exporter of capacity in large amounts during each peak period. Net exports are between 690 MW in summer 1989 and 1157 MW in winter 1993-94.

Unlike the other regions in the SPP, this region is a net exporter of power. Therefore, timely construction of the proposed generating units and transmission lines in this region would enable it to assist other regions as necessary.

Present bulk transmission plans in Region 22 indicate the major additions to the bulk transmission network to be 345 kV. No higher voltage level exists in the region or is planned.

Southwestern Electric Power Company (SOEP) generation additions schedule not only adds capacity but replaces high priced gas with lower priced lignite. The lignite will be mined locally for SOEP's Pirkey and Dolet Hills plants. Being relatively close to load centers, SOEP will continue to use 345 kV as its bulk power supply system. Central and Southwest Corporation (C&SW), a holding company, will be responsible for added generation capacity for SOEP and three other operating companies after 1986, resulting in shared generation and equalized reserves. C&SW is comprised of two subsidiaries, Southwestern Electric Power Company (SOEP) and Public Service Company of Oklahoma (PSOK), operating in synchronism with Southwest Power Pool (SPP), and two subsidiaries, Central Power and Light (CPL) and West Texas Utilities Company (WTU), operating in synchronism with the Electric Reliability Council of Texas (ERCOT). C&SW put into service in December 1984 an asynchronous high voltage direct current interconnection to ERCOT and expects to complete another in 1989. Both are for dispatching electric energy between its subsidiaries in SPP and those in ERCOT.

Rocky Mountain Power Area (RMPA)
Electric Region 24

The RMPA peak demand forecast for the 1985 summer is 6,190 MW. This is an increase of 582 MW (10.4%) above the actual 1984 summer peak demand of 5,608 MW. Planned reserves excluding net transactions for 1985 summer are 3,484 MW (56.3%). RMPA plans a net export of 925 MW, thereby reducing its reserve position. Adjusted reserves for 1985 summer are 27.0%, after allowance for outages due to scheduled maintenance, forced outages and other outages. For the period 1986-94, RMPA's summer adjusted reserves range from a low of 9.7% in 1990 to a high of 23.5% in 1986. These reserves appears to be adequate.

The RMPA peak demand forecast for the 1985/86 winter is 6,089 MW. This is an increase of 638 MW (11.7%) above the actual 1984/85 winter peak demand of 5,451 MW. Planned reserves excluding net transactions for 1985/86 winter are 3,750 MW (61.6%). RMPA plans on a net export of 894 MW, thereby reducing its reserve position. Adjusted reserves for the 1985/86 winter are 30.6%, after allowance for outages due to scheduled maintenance, forced outages and other outages. For the period 1986-94, RMPA's winter adjusted reserves range from a low of 15.3% in 1993/94 to a high of 27.3% in 1986/87. The reserves are considered adequate for the forecasted loads.

Net energy projected for 1985 is 35,996 Gwh which is an increase of 2,908 Gwh (8.8%) above the actual 1984 net energy requirements of 33,088 Gwh.

During the period 1985-94 the RMPA area plans to construct 3 large coal units (1,085 MW) and uprate the Fort St. Vrain nuclear unit by 75 MW from the current rating of 200 MW. Fort St. Vrain is the only High Temperature Gas-cooled Nuclear Reactor in the U.S. Including the addition of several smaller units, mainly hydro, and the derating of several units, the net addition to RMPA generating capacity is planned to be 1,568 MW (summer rating) through 1994.

The WSCC IE-411 report notes that transmission limitations primarily within the RMPA system will impact the area's ability to import power during emergency conditions. Lines are under construction or planned to alleviate internal transfer limitations. However, transmission bottlenecks will exist until these lines are placed in service. In particular, generation curtailments and separation of the electric systems in Colorado from New Mexico will continue for certain major system disturbances, possibly resulting in loss of load and generation in the Colorado-Wyoming area. The construction of the Rifle-San Juan 345 kV line, scheduled for service in late 1986, will significantly improve this situation.

Northwest Power Pool Area (NWPP)
Electric Region 25
(U.S. Portion of NWPP Only)

The NWPP peak demand forecast for the 1985 summer is 25,039 MW. This is a decrease of 345 MW (1.4%) below the actual 1984 summer peak demand of 25,384 MW. Planned reserves excluding net transactions for 1985 summer are 18,408 MW (73.5%). NWPP plans on a net export of 1,982 MW, thereby reducing its reserve position. Adjusted reserves for 1985 summer are 34.3%, after allowance for outages due to scheduled maintenance, forced outages and other outages. NWPP's summer adjusted reserves, ranging from a low of 31.1% in 1987 to a high of 38.5% in 1988, indicate adequate power supply for the summer peak load periods from 1985 through 1994.

The NWPP peak demand forecast for the 1985/86 winter is 32,826 MW. This is a decrease of 425 MW (1.3%) below the actual 1984/85 winter peak demand of 33,251 MW. Planned reserves excluding net transactions for 1985/86 winter are 11,436 MW (34.8%). NWPP plans on a net export of 904 MW thereby reducing its reserve position. Adjusted reserves for the 1985/86 winter are 18.1%, after allowance for outages due to scheduled maintenance, forced outages and other outages. NWPP's winter adjusted reserves range from a low of 13.6% in 1991/92 to a high of 22.1% in 1987/88, indicating adequate power supply for all winter peak load periods through 1994/95.

Net energy projected for 1985 is 185,795 Gwh which is an increase of 1,809 Gwh (1.0%) above the actual 1984 net energy requirements of 183,986 Gwh.

For the 1985-94 period the net increase of NWPP generating capacity is planned to be 6,336 MW (summer rating). This takes into account the retirement of the two 420 MW generators at the Hanford nuclear facility, scheduled for June 1993. Most of the projected new units are hydroelectric totalling 1,499 MW. In addition, new capacity will be vested in two nuclear units (WNP1, 1,250 MW and WNP3, 1,240 MW) and in 3 coal units totalling 1,350 MW.

No major transmission limitations are foreseen for the NWPP region.

Arizona-New Mexico Power Area (AZNM)
Electric Region 26

The AZNM peak demand forecast for the 1985 summer is 10,092 MW. This is an increase of 708 MW (7.5%) above the actual 1984 summer peak demand of 9,384 MW. Planned reserves excluding net transactions for 1985 summer are 4,215 MW (41.8%). AZNM plans on a net export of 1,557 MW, thereby reducing its reserve position. Adjusted reserves for 1985 summer are 16.3%, after allowance for outages due to scheduled maintenance, forced outages and other outages. For the period 1986-94, AZNM's summer adjusted reserves range from a low of 16.4% in 1994 to a high of 28.0% in 1989. The projected summer reserves appear to be adequate for the entire study period.

The AZNM peak demand forecast for the 1985/86 winter is 7,510 MW. This is an increase of 413 MW (5.8%) above the actual 1984/85 winter peak demand of 7,097 MW. Planned reserves excluding net transactions for 1985/86 winter are 7,092 MW (94.4%). AZNM plans on a net export of 1,742 MW thereby reducing its reserve position. Adjusted reserves for the 1985/86 winter are 38.3%, after allowance for outages due to scheduled maintenance, forced outages and other outages. For the period 1986-94, AZNM's winter adjusted reserves range from an low of 35.6% in 1994/95 to a high of 44.4% in 1991/92. The projected winter reserves indicate adequate power supply for the study period.

Net energy projected for 1985 is 46,782 Gwh which is an increase of 87 Gwh (0.2%) above the actual 1984 net energy requirements of 46,695 Gwh.

The AZNM area plans a net increase of 6,942 MW in its generating capability (summer rating) from 1985 through 1994. Palo Verde Nuclear Plant units 1, 2 and 3 account for 3,810 MW and 4 coal units total 1,340 MW.

The WSCC IE-411 report indicates that bulk power transfer capability between ASNM and adjacent areas is considered adequate for contemplated transfers in the absence of significant clock-wise loop flow.

California-Southern Nevada Power Area (CASN)
Electric Region 27

The CASN peak demand forecast for the 1985 summer is 40,253 MW. This is a decrease of 680 MW (1.7%) below the actual 1984 summer peak demand of 40,933 MW. Planned reserves excluding net transactions for 1985 summer are 5,404 (13.4%). CASN plans on a net import of 5,918 MW thereby increasing its reserve position. Adjusted reserves for 1985 summer are 10.1%, after allowance for outages due to scheduled maintenance, forced outages and other outages. For the period 1986-94, CASN's summer adjusted reserves range from a low of 8.6% in 1994 to a high of 16.1% in 1986. The reserves are considered to be adequate.

The CASN peak demand forecast for the 1985/86 winter is 30,403 MW. This is a decrease of 918 MW (2.9%) below the actual 1984/85 winter peak demand of 31,321 MW. Planned reserves excluding net transactions for 1985/86 winter are 16,839 MW (55.4%). CASN plans on a net import of 4,447 MW, thereby increasing its reserve position. Adjusted reserves for 1985/86 winter are 30.7%, after allowance for outages due to scheduled maintenance, forced outages and other outages. For the period 1986-94, CASN's winter adjusted reserves range from a low of 24.5% in 1994/95 to a high of 33.7% in 1986/87. The winter reserves indicate adequate power supply is available to meet projected demands.

Net energy projected for 1985 is 208,035 Gwh which is an increase of 2,867 Gwh (1.4%) above the actual 1984 net energy requirements of 205,168 Gwh.

From 1985 through 1994 the CASN area plans to increase its net generating capability by 8,670 MW (summer rating). This net increase takes account of the retirement of 2,567 MW in steam units fired by oil and natural gas. Nuclear units Diablo Canyon 1 1/ and Diablo Canyon 2 make up 2,205 MW of the net increase. Four new coal-fired units (Intermountain No. 1 & 2 and White Pine No. 1 & 2) will contribute 3,122 MW, geothermal energy will supply 1,736 MW and cogeneration plants will provide 2,527 MW. The balance is made up of hydro, sun, wind and other resources.

The WSCC IE-411 report states that transmission capability in the CASN area is adequate and reserve margins are at a sufficient level to assist neighboring utilities that may have deficiencies.

1/ After preparation of the details of this report it was learned that Diablo Canyon No. 1 was declared commercial on May 7, 1985. That fact is not incorporated in the data of this report.

CURRENT CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1985
ALLEGHENY POWER SYSTEM (REGION 1)

	1985 SUMMER	1985 WINTER
1. PLANNED CAPABILITY (MW)	6870 a	7987
2. PEAK DEMAND(MW)	5222	5887
3. PLANNED RESERVES (1-2) (MW)	1648	2100
4. PLANNED RESERVES (%) (3/2)X100	31.6	35.7
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	-1526	392
6. TOTAL CAPABILITY (1+5) (MW)	5344	8379
7. TOTAL RESERVES (6-2) (MW)	122	2492
8. TOTAL RESERVES (%) (7/2)X100	2.3	42.3
9. SCHEDULED MAINTENANCE (MW)	671	540
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	4673	7839
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	-549	1952
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	-10.5	33.2
13. FULL FORCED OUTAGES (MW)	596	692
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	4077	7147
15. RESERVES AFTER FULL FORCED OUTAGES (14-2)	-1145	1260
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	-21.9	21.4
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	445	518
18. ADJUSTED CAPABILITY (14-17) (MW)	3632	6629
19. ADJUSTED RESERVES (18-2) (MW)	-1590	742
20. ADJUSTED RESERVES (%) (19/2)X100	-30.4	12.6
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	-23.1	9.3

a Reduced from the IE-411 reported value because Bath County Units 1, 2 and 3 will be inoperable until after the summer peak due to a water conduit problem.

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1986-1989
ALLEGHENY POWER SYSTEM (REGION 1)

	1986		1987		1988		1989	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	7769	7987	7869	8087	7869	8087	7869	8087
2. PEAK DEMAND (MW)	5286	6004	5386	6129	5504	6282	5611	6417
3. PLANNED RESERVES (1-2) (MW)	2483	1983	2483	1958	2365	1805	2258	1670
4. PLANNED RESERVES (%) (3/2)X100	47.0	33.0	46.1	31.9	43.0	28.7	40.2	26.0
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	89	81	79	40	39	0	0	0
6. TOTAL CAPABILITY (1+5) (MW)	7858	8068	7948	8127	7908	8087	7869	8087
7. TOTAL RESERVES (6-2) (MW)	2572	2064	2562	1998	2404	1805	2258	1670
8. TOTAL RESERVES (%) (7/2)X100	48.7	34.4	47.6	32.6	43.7	28.7	40.2	26.0
9. SCHEDULED MAINTENANCE (MW)	759	540	769	547	769	547	769	547
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	7099	7528	7179	7580	7139	7540	7100	7540
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	1813	1524	1793	1451	1635	1258	1489	1123
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	34.3	25.4	33.3	23.7	29.7	20.0	26.5	17.5
13. FULL FORCED OUTAGES (MW)	674	692	682	701	682	701	682	701
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	6425	6836	6497	6879	6457	6839	6418	6839
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	1139	832	1111	750	953	557	807	422
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	21.5	13.9	20.6	12.2	17.3	8.9	14.4	6.6
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	503	518	510	524	510	524	510	524
18. ADJUSTED CAPABILITY (14-17) (MW)	5922	6318	5987	6355	5947	6315	5908	6315
19. ADJUSTED RESERVES (18-2) (MW)	636	314	601	226	443	33	297	-102
20. ADJUSTED RESERVES (%) (19/2)X100	12.0	5.2	11.2	3.7	8.0	0.5	5.3	-1.6
21. ADJUSTED CAPACITY MARGINS (%) (19/1)X100.	8.2	3.9	7.6	2.8	5.6	0.4	3.8	-1.3

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1990-1994
ALLEGHENY POWER SYSTEM (REGION 1)

	1990		1991		1992		1993		1994	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	8023	8241	8229	8448	8229	8748	8529	8748	8529	9048
2. PEAK DEMAND (MW)	5731	6553	5852	6669	5967	6796	6071	6906	6167	7015
3. PLANNED RESERVES (1-2)	2292	1688	2377	1779	2262	1952	2458	1842	2362	2033
4. PLANNED RESERVES (%) (3/2)X100	40.0	25.8	40.6	26.7	37.9	28.7	40.5	26.7	38.3	29.0
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	0	0	0	0	0	0	0	0	0	0
6. TOTAL CAPABILITY (1+5) (MW)	8023	8241	8229	8448	8229	8748	8529	8748	8529	9048
7. TOTAL RESERVES (6-2) (MW)	2292	1688	2377	1779	2262	1952	2458	1842	2362	2033
8. TOTAL RESERVES (%) (7/2)X100	40.0	25.8	40.6	26.7	37.9	28.7	40.5	26.7	38.3	29.0
9. SCHEDULED MAINTENANCE (MW)	784	557	804	571	804	591	833	591	833	612
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	7239	7684	7425	7877	7425	8157	7696	8157	7696	8436
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	1508	1131	1573	1208	1458	1361	1625	1251	1529	1421
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	26.3	17.3	26.9	18.1	24.4	20.0	26.8	18.1	24.8	20.3
13. FULL FORCED OUTAGES (MW)	696	714	713	732	713	758	739	758	739	784
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	6543	6970	6712	7145	6712	7399	6957	7399	6957	7652
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	812	417	860	476	745	603	886	493	790	637
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	14.2	6.4	14.7	7.1	12.5	8.9	14.6	7.1	12.8	9.1
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	520	534	533	547	533	567	553	567	553	586
18. ADJUSTED CAPABILITY (14-17) (MW)	6023	6436	6179	6598	6179	6832	6404	6832	6404	7066
19. ADJUSTED RESERVES (18-2) (MW)	292	-117	327	-71	212	36	333	-74	237	51
20. ADJUSTED RESERVES (%) (19/2)X100	5.1	-1.8	5.6	-1.1	3.6	0.5	5.5	-1.1	3.8	0.7
21. ADJUSTED CAPACITY MARGIN (%) (19/1)x100.	3.6	-1.4	4.0	-0.8	2.6	0.4	3.9	-0.8	2.8	0.6

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

CURRENT CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1985
WVA-OHIO-IND-MICH SYSTEMS (REGION 2)

	1985 SUMMER	1985 WINTER
1. PLANNED CAPABILITY (MW)	26106	26492
2. PEAK DEMAND(MW)	16709	18093
3. PLANNED RESERVES (1-2) (MW)	9397	8399
4. PLANNED RESERVES (%) (3/2)X100	56.2	46.4
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	-2192	-1712
6. TOTAL CAPABILITY (1+5) (MW)	23914	24780
7. TOTAL RESERVES (6-2) (MW)	7205	6687
8. TOTAL RESERVES (%) (7/2)X100	43.1	37.0
9. SCHEDULED MAINTENANCE (MW)	2906	1399
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	21008	23381
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	4299	5288
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	25.7	29.2
13. FULL FORCED OUTAGES (MW)	1525	1547
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	19483	21834
15. RESERVES AFTER FULL FORCED OUTAGES (14-2)	2774	3741
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	16.6	20.7
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	945	959
18. ADJUSTED CAPABILITY (14-17) (MW)	18538	20875
19. ADJUSTED RESERVES (18-2) (MW)	1829	2782
20. ADJUSTED RESERVES (%) (19/2)X100	10.9	15.4
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	7.0	10.5

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1986-1989
WVA-OHIO-IND-MICH SYSTEMS (REGION 2)

	1986		1987		1988		1989	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	26106	26492	26106	26492	26109	27792	27406	27792
2. PEAK DEMAND (MW)	16986	18548	17372	19184	18007	19856	18618	20250
3. PLANNED RESERVES (1-2) (MW)	9120	7944	8734	7308	8102	7936	8788	7542
4. PLANNED RESERVES (%) (3/2)X100	53.7	42.8	50.3	38.1	45.0	40.0	47.2	37.2
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	-1891	-1752	-1710	-1179	-1340	-1030	-1172	-1029
6. TOTAL CAPABILITY (1+5) (MW)	24215	24740	24396	25313	24769	26762	26234	26763
7. TOTAL RESERVES (6-2) (MW)	7229	6192	7024	6129	6762	6906	7616	6513
8. TOTAL RESERVES (%) (7/2)X100	42.6	33.4	40.4	31.9	37.6	34.8	40.9	32.2
9. SCHEDULED MAINTENANCE (MW)	2906	1399	2906	1399	2906	1467	3050	1467
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	21309	23341	21490	23914	21863	25295	23184	25296
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	4323	4793	4118	4730	3856	5439	4566	5046
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	25.5	25.8	23.7	24.7	21.4	27.4	24.5	24.9
13. FULL FORCED OUTAGES (MW)	1525	1547	1525	1547	1525	1623	1601	1623
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	19784	21794	19965	22367	20338	23672	21583	23673
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	2798	3246	2593	3183	2331	3816	2965	3423
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	16.5	17.5	14.9	16.6	12.9	19.2	15.9	16.9
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	945	959	945	959	945	1006	992	1006
18. ADJUSTED CAPABILITY (14-17) (MW)	18839	20835	19020	21408	19393	22666	20591	22667
19. ADJUSTED RESERVES (18-2) (MW)	1853	2287	1648	2224	1386	2810	1973	2417
20. ADJUSTED RESERVES (%) (19/2)X100	10.9	12.3	9.5	11.6	7.7	14.2	10.6	11.9
21. ADJUSTED CAPACITY MARGINS (%) (19/1)X100.	7.1	8.6	6.3	8.4	5.3	10.1	7.2	8.7

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1990-1994
WVA-OHIO-IND-MICH SYSTEMS (REGION 2)

	1990		1991		1992		1993		1994	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	27406	27792	27736	28122	27736	28122	27736	28122	27736	28122
2. PEAK DEMAND (MW)	18946	20655	19281	21068	19624	21494	19971	21923	20328	22272
3. PLANNED RESERVES (1-2)	8460	7137	8455	7054	8112	6628	7765	6199	7408	5850
4. PLANNED RESERVES (%) (3/2)X100	44.7	34.6	43.9	33.5	41.3	30.8	38.9	28.3	36.4	26.3
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	-1156	-466	-583	-463	-566	-459	-557	-459	-559	-458
6. TOTAL CAPABILITY (1+5) (MW)	26250	27326	27153	27659	27170	27663	27179	27663	27177	27664
7. TOTAL RESERVES (6-2) (MW)	7304	6671	7872	6591	7546	6169	7208	5740	6849	5392
8. TOTAL RESERVES (%) (7/2)X100	38.6	32.3	40.8	31.3	38.5	28.7	36.1	26.2	33.7	24.2
9. SCHEDULED MAINTENANCE (MW)	3050	1467	3087	1485	3087	1485	3087	1485	3087	1485
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	23200	25859	24066	26174	24083	26178	24092	26178	24090	26179
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	4254	5204	4785	5106	4459	4684	4121	4255	3762	3907
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	22.5	25.2	24.8	24.2	22.7	21.8	20.6	19.4	18.5	17.5
13. FULL FORCED OUTAGES (MW)	1601	1623	1620	1642	1620	1642	1620	1642	1620	1642
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	21599	24236	22446	24532	22463	24536	22472	24536	22470	24537
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	2653	3581	3165	3464	2839	3042	2501	2613	2142	2265
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	14.0	17.3	16.4	16.4	14.5	14.2	12.5	11.9	10.5	10.2
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	992	1006	1004	1018	1004	1018	1004	1018	1004	1018
18. ADJUSTED CAPABILITY (14-17) (MW)	20607	23230	21442	23514	21459	23518	21468	23518	21466	23519
19. ADJUSTED RESERVES (18-2) (MW)	1661	2575	2161	2446	1835	2024	1497	1595	1138	1247
20. ADJUSTED RESERVES (%) (19/2)X100	8.8	12.5	11.2	11.6	9.4	9.4	7.5	7.3	5.6	5.6
21. ADJUSTED CAPACITY MARGIN (%) (19/1)x100.	6.1	9.3	7.8	8.7	6.6	7.2	5.4	5.7	4.1	4.4

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

CURRENT CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1985
NEW ENGLAND POWER POOL (REGION 3)

	1985 SUMMER	1985 WINTER
1. PLANNED CAPABILITY (MW)	20316	21034
2. PEAK DEMAND(MW)	17100	17400
3. PLANNED RESERVES (1-2) (MW)	3216	3634
4. PLANNED RESERVES (%) (3/2)X100	18.8	20.9
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	899	1067
6. TOTAL CAPABILITY (1+5) (MW)	21215	22101
7. TOTAL RESERVES (6-2) (MW)	4115	4701
8. TOTAL RESERVES (%) (7/2)X100	24.1	27.0
9. SCHEDULED MAINTENANCE (MW)	1585	1529
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	19630	20572
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	2530	3172
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	14.8	18.2
13. FULL FORCED OUTAGES (MW)	1755	1817
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	17875	18755
15. RESERVES AFTER FULL FORCED OUTAGES (14-2)	775	1355
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	4.5	7.8
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	762	789
18. ADJUSTED CAPABILITY (14-17) (MW)	17113	17966
19. ADJUSTED RESERVES (18-2) (MW)	13	566
20. ADJUSTED RESERVES (%) (19/2)X100	0.1	3.3
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	0.1	2.7

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1986-1989
NEW ENGLAND POWER POOL (REGION 3)

	1986		1987		1988		1989	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	21466	23248	22544	23141	22443	23141	22443	23141
2. PEAK DEMAND (MW)	17400	17500	17500	17600	17900	17800	18300	18100
3. PLANNED RESERVES (1-2) (MW)	4066	5748	5044	5541	4543	5341	4143	5041
4. PLANNED RESERVES (%) (3/2)X100	23.4	32.8	28.8	31.5	25.4	30.0	22.6	27.9
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	1113	1268	1312	1469	1515	1525	1573	1559
6. TOTAL CAPABILITY (1+5) (MW)	22579	24516	23856	24610	23958	24666	24016	24700
7. TOTAL RESERVES (6-2) (MW)	5179	7016	6356	7010	6058	6866	5716	6600
8. TOTAL RESERVES (%) (7/2)X100	29.8	40.1	36.3	39.8	33.8	38.6	31.2	36.5
9. SCHEDULED MAINTENANCE (MW)	1674	1690	1758	1682	1751	1682	1751	1682
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	20905	22826	22098	22928	22207	22984	22265	23018
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	3505	5326	4598	5328	4307	5184	3965	4918
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	20.1	30.4	26.3	30.3	24.1	29.1	21.7	27.2
13. FULL FORCED OUTAGES (MW)	1855	2009	1948	1999	1939	1999	1939	1999
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	19050	20817	20150	20929	20268	20985	20326	21019
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	1650	3317	2650	3329	2308	3185	2026	2919
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	9.5	19.0	15.1	18.9	13.2	17.9	11.1	16.1
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	805	872	845	868	842	868	842	868
18. ADJUSTED CAPABILITY (14-17) (MW)	18245	19945	19305	20061	19426	20117	19484	20151
19. ADJUSTED RESERVES (18-2) (MW)	845	2445	1805	2461	1526	2317	1184	2051
20. ADJUSTED RESERVES (%) (19/2)X100	4.9	14.0	10.3	14.0	8.5	13.0	6.5	11.3
21. ADJUSTED CAPACITY MARGINS (%) (19/1)X100.	3.9	10.5	8.0	10.6	6.8	10.0	5.3	8.9

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1990-1994
NEW ENGLAND POWER POOL (REGION 3)

	1990		1991		1992		1993		1994	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	22443	23226	22507	23035	22323	22932	22221	22816	22119	22549
2. PEAK DEMAND (MW)	18700	18400	19214	18873	19678	19303	19926	19586	20417	20040
3. PLANNED RESERVES (1-2)	3743	4826	3293	4162	2645	3629	2295	3230	1702	2509
4. PLANNED RESERVES (%) (3/2)X100	20.0	26.2	17.1	22.1	13.4	18.8	11.5	16.5	8.3	12.5
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	1609	3130	3180	2869	2916	2888	2938	2903	2953	2919
6. TOTAL CAPABILITY (1+5) (MW)	24052	26356	25687	25904	25239	25820	25159	25719	25072	25468
7. TOTAL RESERVES (6-2) (MW)	5352	7956	6473	7031	5561	6517	5233	6133	4655	5428
8. TOTAL RESERVES (%) (7/2)X100	28.6	43.2	33.7	37.3	28.3	33.8	26.3	31.3	22.8	27.1
9. SCHEDULED MAINTENANCE (MW)	1751	1689	1756	1675	1741	1667	1733	1659	1725	1639
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	22301	24667	23931	24229	23498	24153	23426	24060	23347	23829
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	3601	6267	4717	5356	3820	4850	3500	4474	2930	3789
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	19.3	34.1	24.5	28.4	19.4	25.1	17.6	22.8	14.4	18.9
13. FULL FORCED OUTAGES (MW)	1939	2007	1945	1990	1929	1981	1920	1971	1911	1948
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	20362	22660	21986	22239	21569	22172	21506	22089	21436	21881
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	1662	4260	2772	3366	1891	2869	1580	2503	1019	1841
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	8.9	23.2	14.4	17.8	9.6	14.9	7.9	12.8	5.0	9.2
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	842	871	844	864	837	860	833	856	829	846
18. ADJUSTED CAPABILITY (14-17) (MW)	19520	21789	21142	21375	20732	21312	20673	21233	20607	21035
19. ADJUSTED RESERVES (18-2) (MW)	820	3389	1928	2502	1054	2009	747	1647	190	995
20. ADJUSTED RESERVES (%) (19/2)X100	4.4	18.4	10.0	13.3	5.4	10.4	3.7	8.4	0.9	5.0
21. ADJUSTED CAPACITY MARGIN (%) (19/1)x100.	3.7	14.6	8.6	10.9	4.7	8.8	3.4	7.2	0.9	4.4

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

CURRENT CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1985
NEW YORK POWER POOL (REGION 4)

	1985 SUMMER	1985 WINTER
1. PLANNED CAPABILITY (MW)	30768	32613
2. PEAK DEMAND(MW)	22422	20582
3. PLANNED RESERVES (1-2) (MW)	8346	12031
4. PLANNED RESERVES (%) (3/2)X100	37.2	58.5
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	921	121
6. TOTAL CAPABILITY (1+5) (MW)	31689	32734
7. TOTAL RESERVES (6-2) (MW)	9267	12152
8. TOTAL RESERVES (%) (7/2)X100	41.3	59.0
9. SCHEDULED MAINTENANCE (MW)	2505	3304
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	29184	29430
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	6762	8848
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	30.2	43.0
13. FULL FORCED OUTAGES (MW)	2658	2818
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	26526	26612
15. RESERVES AFTER FULL FORCED OUTAGES (14-2)	4104	6030
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	18.3	29.3
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	1363	1445
18. ADJUSTED CAPABILITY (14-17) (MW)	25163	25167
19. ADJUSTED RESERVES (18-2) (MW)	2741	4585
20. ADJUSTED RESERVES (%) (19/2)X100	12.2	22.3
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	8.9	14.1

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1986-1989
NEW YORK POWER POOL (REGION 4)

	1986		1987		1988		1989	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	31586	33566	32515	33535	32546	33522	32496	33532
2. PEAK DEMAND (MW)	22807	20827	23065	21115	23313	21373	23501	21631
3. PLANNED RESERVES (1-2) (MW)	8779	12739	9450	12420	9233	12149	8995	11901
4. PLANNED RESERVES (%) (3/2)X100	38.5	61.2	41.0	58.8	39.6	56.8	38.3	55.0
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	914	-286	509	-291	504	-296	500	-300
6. TOTAL CAPABILITY (1+5) (MW)	32500	33280	33024	33244	33050	33226	32996	33232
7. TOTAL RESERVES (6-2) (MW)	9693	12453	9959	12129	9737	11853	9495	11601
8. TOTAL RESERVES (%) (7/2)X100	42.5	59.8	43.2	57.4	41.8	55.5	40.4	53.6
9. SCHEDULED MAINTENANCE (MW)	2571	3400	2647	3397	2649	3396	2645	3397
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	29929	29880	30377	29847	30401	29830	30351	29835
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	7122	9053	7312	8732	7088	8457	6850	8204
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	31.2	43.5	31.7	41.4	30.4	39.6	29.1	37.9
13. FULL FORCED OUTAGES (MW)	2729	2900	2809	2897	2812	2896	2808	2897
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	27200	26980	27568	26950	27589	26934	27543	26938
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	4393	6153	4503	5835	4276	5561	4042	5307
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	19.3	29.5	19.5	27.6	18.3	26.0	17.2	24.5
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	1399	1487	1440	1486	1442	1485	1440	1485
18. ADJUSTED CAPABILITY (14-17) (MW)	25801	25493	26128	25464	26147	25449	26103	25453
19. ADJUSTED RESERVES (18-2) (MW)	2994	4666	3063	4349	2834	4076	2602	3822
20. ADJUSTED RESERVES (%) (19/2)X100	13.1	22.4	13.3	20.6	12.2	19.1	11.1	17.7
21. ADJUSTED CAPACITY MARGINS (%) (19/1)X100.	9.5	13.9	9.4	13.0	8.7	12.2	8.0	11.4

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1990-1994
NEW YORK POWER POOL (REGION 4)

	1990		1991		1992		1993		1994	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	32485	33520	32834	33869	32877	33912	33878	34865	33830	34857
2. PEAK DEMAND (MW)	23710	21890	23988	22188	24326	22506	24634	22874	24973	23223
3. PLANNED RESERVES (1-2)	8775	11630	8846	11681	8551	11406	9244	11991	8857	11634
4. PLANNED RESERVES (%) (3/2)X100	37.0	53.1	36.9	52.6	35.2	50.7	37.5	52.4	35.5	50.1
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	497	-303	492	-308	488	-312	484	-316	480	-320
6. TOTAL CAPABILITY (1+5) (MW)	32982	33217	33326	33561	33365	33600	34362	34549	34310	34537
7. TOTAL RESERVES (6-2) (MW)	9272	11327	9338	11373	9039	11094	9728	11675	9337	11314
8. TOTAL RESERVES (%) (7/2)X100	39.1	51.7	38.9	51.3	37.2	49.3	39.5	51.0	37.4	48.7
9. SCHEDULED MAINTENANCE (MW)	2644	3396	2673	3431	2676	3435	2758	3532	2754	3531
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	30338	29821	30653	30130	30689	30165	31604	31017	31556	31006
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	6628	7931	6665	7942	6363	7659	6970	8143	6583	7783
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	28.0	36.2	27.8	35.8	26.2	34.0	28.3	35.6	26.4	33.5
13. FULL FORCED OUTAGES (MW)	2807	2896	2837	2926	2841	2930	2927	3012	2923	3012
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	27531	26925	27816	27204	27848	27235	28677	28005	28633	27994
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	3821	5035	3828	5016	3522	4729	4043	5131	3660	4771
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	16.1	23.0	16.0	22.6	14.5	21.0	16.4	22.4	14.7	20.5
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	1439	1485	1455	1500	1456	1502	1501	1545	1499	1544
18. ADJUSTED CAPABILITY (14-17) (MW)	26092	25440	26361	25704	26392	25733	27176	26460	27134	26450
19. ADJUSTED RESERVES (18-2) (MW)	2382	3550	2373	3516	2066	3227	2542	3586	2161	3227
20. ADJUSTED RESERVES (%) (19/2)X100	10.0	16.2	9.9	15.8	8.5	14.3	10.3	15.7	8.7	13.9
21. ADJUSTED CAPACITY MARGIN (%) (19/1)x100.	7.3	10.6	7.2	10.4	6.3	9.5	7.5	10.3	6.4	9.3

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

CURRENT CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1985
PENNSYLVANIA-NEW JERSEY-MARYLAND INTERCONNECTION (REGION 5)

	1985 SUMMER	1985 WINTER
1. PLANNED CAPABILITY (MW)	46316	49317
2. PEAK DEMAND(MW)	36042	32262
3. PLANNED RESERVES (1-2) (MW)	10274	17055
4. PLANNED RESERVES (%) (3/2)X100	28.5	52.9
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	1543	1543
6. TOTAL CAPABILITY (1+5) (MW)	47859	50860
7. TOTAL RESERVES (6-2) (MW)	11817	18598
8. TOTAL RESERVES (%) (7/2)X100	32.8	57.6
9. SCHEDULED MAINTENANCE (MW)	3024	5114
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	44835	45746
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	8793	13484
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	24.4	41.8
13. FULL FORCED OUTAGES (MW)	5632	5997
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	39203	39749
15. RESERVES AFTER FULL FORCED OUTAGES (14-2)	3161	7487
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	8.8	23.2
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	894	952
18. ADJUSTED CAPABILITY (14-17) (MW)	38309	38797
19. ADJUSTED RESERVES (18-2) (MW)	2267	6535
20. ADJUSTED RESERVES (%) (19/2)X100	6.3	20.3
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	4.9	13.3

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1986-1989
PENNSYLVANIA-NEW JERSEY-MARYLAND INTERCONNECTION (REGION 5)

	1986		1987		1988		1989	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	47501	49739	48474	50806	48471	50803	48212	50496
2. PEAK DEMAND (MW)	36472	32812	36782	33522	37222	34312	37582	34992
3. PLANNED RESERVES (1-2) (MW)	11029	16927	11692	17284	11249	16491	10630	15504
4. PLANNED RESERVES (%) (3/2)X100	30.2	51.6	31.8	51.6	30.2	48.1	28.3	44.3
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	1548	1523	1525	1525	1527	1527	1529	1529
6. TOTAL CAPABILITY (1+5) (MW)	49049	51262	49999	52331	49998	52330	49741	52025
7. TOTAL RESERVES (6-2) (MW)	12577	18450	13217	18809	12776	18018	12159	17033
8. TOTAL RESERVES (%) (7/2)X100	34.5	56.2	35.9	56.1	34.3	52.5	32.4	48.7
9. SCHEDULED MAINTENANCE (MW)	3102	5158	3165	5269	3165	5268	3148	5236
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	45947	46104	46834	47062	46833	47062	46593	46789
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	9475	13292	10052	13540	9611	12750	9011	11797
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	26.0	40.5	27.3	40.4	25.8	37.2	24.0	33.7
13. FULL FORCED OUTAGES (MW)	5776	6048	5894	6178	5894	6178	5863	6140
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	40171	40056	40940	40884	40939	40884	40730	40649
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	3699	7244	4158	7362	3717	6572	3148	5657
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	10.1	22.1	11.3	22.0	10.0	19.2	8.4	16.2
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	917	960	936	981	935	980	930	975
18. ADJUSTED CAPABILITY (14-17) (MW)	39254	39096	40004	39903	40004	39904	39800	39674
19. ADJUSTED RESERVES (18-2) (MW)	2782	6284	3222	6381	2782	5592	2218	4682
20. ADJUSTED RESERVES (%) (19/2)X100	7.6	19.2	8.8	19.0	7.5	16.3	5.9	13.4
21. ADJUSTED CAPACITY MARGINS (%) (19/1)X100.	5.9	12.6	6.6	12.6	5.7	11.0	4.6	9.3

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1990-1994
PENNSYLVANIA-NEW JERSEY-MARYLAND INTERCONNECTION (REGION 5)

	1990		1991		1992		1993		1994	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	48211	51550	49065	51339	49585	51865	50210	52490	50044	52315
2. PEAK DEMAND (MW)	37972	35672	38342	36312	38772	36962	39232	37602	39732	38212
3. PLANNED RESERVES (1-2)	10239	15878	10723	15027	10813	14903	10978	14888	10312	14103
4. PLANNED RESERVES (%) (3/2)X100	27.0	44.5	28.0	41.4	27.9	40.3	28.0	39.6	26.0	36.9
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	1530	770	772	572	574	324	126	126	127	127
6. TOTAL CAPABILITY (1+5) (MW)	49741	52320	49837	51911	50159	52189	50336	52616	50171	52442
7. TOTAL RESERVES (6-2) (MW)	11769	16648	11495	15599	11387	15227	11104	15014	10439	14230
8. TOTAL RESERVES (%) (7/2)X100	31.0	46.7	30.0	43.0	29.4	41.2	28.3	39.9	26.3	37.2
9. SCHEDULED MAINTENANCE (MW)	3148	5346	3204	5324	3238	5378	3279	5443	3268	5425
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	46593	46974	46633	46587	46921	46811	47057	47173	46903	47017
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	8621	11302	8291	10275	8149	9849	7825	9571	7171	8805
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	22.7	31.7	21.6	28.3	21.0	26.6	19.9	25.5	18.0	23.0
13. FULL FORCED OUTAGES (MW)	5862	6268	5966	6243	6030	6307	6106	6383	6085	6362
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	40731	40706	40667	40344	40891	40504	40951	40790	40818	40655
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	2759	5034	2325	4032	2119	3542	1719	3188	1086	2443
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	7.3	14.1	6.1	11.1	5.5	9.6	4.4	8.5	2.7	6.4
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	930	995	947	991	957	1001	969	1013	966	1010
18. ADJUSTED CAPABILITY (14-17) (MW)	39801	39711	39720	39353	39934	39503	39982	39777	39852	39645
19. ADJUSTED RESERVES (18-2) (MW)	1829	4039	1378	3041	1162	2541	750	2175	120	1433
20. ADJUSTED RESERVES (%) (19/2)X100	4.8	11.3	3.6	8.4	3.0	6.9	1.9	5.8	0.3	3.8
21. ADJUSTED CAPACITY MARGIN (%) (19/1)x100.	3.8	7.8	2.8	5.9	2.3	4.9	1.5	4.1	0.2	2.7

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

CURRENT CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1985
COMMONWEALTH EDISON CO. (REGION 6)

	1985 SUMMER	1985 WINTER
1. PLANNED CAPABILITY (MW)	18672	19161
2. PEAK DEMAND(MW)	14950	11630
3. PLANNED RESERVES (1-2) (MW)	3722	7531
4. PLANNED RESERVES (%) (3/2)X100	24.9	64.8
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	227	312
6. TOTAL CAPABILITY (1+5) (MW)	18899	19473
7. TOTAL RESERVES (6-2) (MW)	3949	7843
8. TOTAL RESERVES (%) (7/2)X100	26.4	67.4
9. SCHEDULED MAINTENANCE (MW)	670	1928
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	18229	17545
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	3279	5915
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	21.9	50.9
13. FULL FORCED OUTAGES (MW)	2162	2219
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	16067	15326
15. RESERVES AFTER FULL FORCED OUTAGES (14-2)	1117	3696
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	7.5	31.8
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	2211	2269
18. ADJUSTED CAPABILITY (14-17) (MW)	13856	13057
19. ADJUSTED RESERVES (18-2) (MW)	-1094	1427
20. ADJUSTED RESERVES (%) (19/2)X100	-7.3	12.3
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	-5.9	7.4

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1986-1989
COMMONWEALTH EDISON CO. (REGION 6)

	1986		1987		1988		1989	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	18672	21401	20882	22521	21972	22521	21972	22521
2. PEAK DEMAND (MW)	15250	11860	15550	12100	15850	12340	16150	12590
3. PLANNED RESERVES (1-2) (MW)	3422	9541	5332	10421	6122	10181	5822	9931
4. PLANNED RESERVES (%) (3/2)X100	22.4	80.4	34.3	86.1	38.6	82.5	36.0	78.9
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	87	87	312	312	0	0	0	0
6. TOTAL CAPABILITY (1+5) (MW)	18759	21488	21194	22833	21972	22521	21972	22521
7. TOTAL RESERVES (6-2) (MW)	3509	9628	5644	10733	6122	10181	5822	9931
8. TOTAL RESERVES (%) (7/2)X100	23.0	81.2	36.3	88.7	38.6	82.5	36.0	78.9
9. SCHEDULED MAINTENANCE (MW)	670	2153	750	2266	789	2266	789	2266
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	18089	19335	20444	20567	21183	20255	21183	20255
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	2839	7475	4894	8467	5333	7915	5033	7665
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	18.6	63.0	31.5	70.0	33.6	64.1	31.2	60.9
13. FULL FORCED OUTAGES (MW)	2162	2478	2418	2608	2544	2608	2544	2608
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	15927	16857	18026	17959	18639	17647	18639	17647
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	677	4997	2476	5859	2789	5307	2489	5057
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	4.4	42.1	15.9	48.4	17.6	43.0	15.4	40.2
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	2211	2534	2472	2666	2601	2666	2601	2666
18. ADJUSTED CAPABILITY (14-17) (MW)	13716	14323	15554	15293	16038	14981	16038	14981
19. ADJUSTED RESERVES (18-2) (MW)	-1534	2463	4	3193	188	2641	-112	2391
20. ADJUSTED RESERVES (%) (19/2)X100	-10.1	20.8	0.0	26.4	1.2	21.4	-0.7	19.0
21. ADJUSTED CAPACITY MARGINS (%) (19/1)X100.	-8.2	11.5	0.0	14.2	0.9	11.7	-0.5	10.6

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1990-1994
COMMONWEALTH EDISON CO. (REGION 6)

	1990		1991		1992		1993		1994	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	21972	22521	21972	22521	21972	22521	21972	22521	21972	22521
2. PEAK DEMAND (MW)	16450	12840	16800	13100	17150	13360	17500	13630	17850	13900
3. PLANNED RESERVES (1-2)	5522	9681	5172	9421	4822	9161	4472	8891	4122	8621
4. PLANNED RESERVES (%) (3/2)X100	33.6	75.4	30.8	71.9	28.1	68.6	25.6	65.2	23.1	62.0
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	0	0	0	0	0	0	0	0	0	0
6. TOTAL CAPABILITY (1+5) (MW)	21972	22521	21972	22521	21972	22521	21972	22521	21972	22521
7. TOTAL RESERVES (6-2) (MW)	5522	9681	5172	9421	4822	9161	4472	8891	4122	8621
8. TOTAL RESERVES (%) (7/2)X100	33.6	75.4	30.8	71.9	28.1	68.6	25.6	65.2	23.1	62.0
9. SCHEDULED MAINTENANCE (MW)	789	2266	789	2266	789	2266	789	2266	789	2266
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	21183	20255	21183	20255	21183	20255	21183	20255	21183	20255
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	4733	7415	4383	7155	4033	6895	3683	6625	3333	6355
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	28.8	57.7	26.1	54.6	23.5	51.6	21.0	48.6	18.7	45.7
13. FULL FORCED OUTAGES (MW)	2544	2608	2544	2608	2544	2608	2544	2608	2544	2608
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	18639	17647	18639	17647	18639	17647	18639	17647	18639	17647
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	2189	4807	1839	4547	1489	4287	1139	4017	789	3747
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	13.3	37.4	10.9	34.7	8.7	32.1	6.5	29.5	4.4	27.0
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	2601	2666	2601	2666	2601	2666	2601	2666	2601	2666
18. ADJUSTED CAPABILITY (14-17) (MW)	16038	14981	16038	14981	16038	14981	16038	14981	16038	14981
19. ADJUSTED RESERVES (18-2) (MW)	-412	2141	-762	1881	-1112	1621	-1462	1351	-1812	1081
20. ADJUSTED RESERVES (%) (19/2)X100	-2.5	16.7	-4.5	14.4	-6.5	12.1	-8.4	9.9	-10.2	7.8
21. ADJUSTED CAPACITY MARGIN (%) (19/1)x100.	-1.9	9.5	-3.5	8.4	-5.1	7.2	-6.7	6.0	-8.2	4.8

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

CURRENT CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1985
FLORIDA COORDINATION GROUP (REGION 7)

	1985 SUMMER	1985 WINTER
1. PLANNED CAPABILITY (MW)	27028	28045
2. PEAK DEMAND(MW)	20706	23470
3. PLANNED RESERVES (1-2) (MW)	6322	4575
4. PLANNED RESERVES (%) (3/2)X100	30.5	19.5
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	2020	2020
6. TOTAL CAPABILITY (1+5) (MW)	29048	30065
7. TOTAL RESERVES (6-2) (MW)	8342	6595
8. TOTAL RESERVES (%) (7/2)X100	40.3	28.1
9. SCHEDULED MAINTENANCE (MW)	1324	2457
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	27724	27608
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	7018	4138
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	33.9	17.6
13. FULL FORCED OUTAGES (MW)	1376	1427
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	26348	26181
15. RESERVES AFTER FULL FORCED OUTAGES (14-2)	5642	2711
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	27.2	11.6
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	857	889
18. ADJUSTED CAPABILITY (14-17) (MW)	25491	25292
19. ADJUSTED RESERVES (18-2) (MW)	4785	1822
20. ADJUSTED RESERVES (%) (19/2)X100	23.1	7.8
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	17.7	6.5

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1986-1989
FLORIDA COORDINATION GROUP (REGION 7)

	1986		1987		1988		1989	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	27025	28042	27575	29000	27955	29518	28681	29730
2. PEAK DEMAND (MW)	21392	24013	21915	24473	22493	24985	23153	25457
3. PLANNED RESERVES (1-2) (MW)	5633	4029	5660	4527	5462	4533	5528	4273
4. PLANNED RESERVES (%) (3/2)X100	26.3	16.8	25.8	18.5	24.3	18.1	23.9	16.8
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	2000	2500	2500	2400	2400	2400	2400	2400
6. TOTAL CAPABILITY (1+5) (MW)	29025	30542	30075	31400	30355	31918	31081	32130
7. TOTAL RESERVES (6-2) (MW)	7633	6529	8160	6927	7862	6933	7928	6673
8. TOTAL RESERVES (%) (7/2)X100	35.7	27.2	37.2	28.3	35.0	27.7	34.2	26.2
9. SCHEDULED MAINTENANCE (MW)	1324	2456	1351	2540	1370	2586	1405	2604
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	27701	28086	28724	28860	28985	29332	29676	29526
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	6309	4073	6809	4387	6492	4347	6523	4069
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	29.5	17.0	31.1	17.9	28.9	17.4	28.2	16.0
13. FULL FORCED OUTAGES (MW)	1376	1427	1404	1476	1423	1502	1460	1513
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	26325	26659	27320	27384	27562	27830	28216	28013
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	4933	2646	5405	2911	5069	2845	5063	2556
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	23.1	11.0	24.7	11.9	22.5	11.4	21.9	10.0
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	857	889	874	919	886	936	909	942
18. ADJUSTED CAPABILITY (14-17) (MW)	25468	25770	26446	26465	26676	26894	27307	27071
19. ADJUSTED RESERVES (18-2) (MW)	4076	1757	4531	1992	4183	1909	4154	1614
20. ADJUSTED RESERVES (%) (19/2)X100	19.1	7.3	20.7	8.1	18.6	7.6	17.9	6.3
21. ADJUSTED CAPACITY MARGINS (%) (19/1)X100.	15.1	6.3	16.4	6.9	15.0	6.5	14.5	5.4

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1990-1994
FLORIDA COORDINATION GROUP (REGION 7)

	1990		1991		1992		1993		1994	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	28789	29846	28986	30068	29042	30112	30166	31268	30432	31520
2. PEAK DEMAND (MW)	23994	26077	24802	26839	25535	27509	26341	28307	27195	28955
3. PLANNED RESERVES (1-2)	4795	3769	4184	3229	3507	2603	3825	2961	3237	2565
4. PLANNED RESERVES (%) (3/2)X100	20.0	14.5	16.9	12.0	13.7	9.5	14.5	10.5	11.9	8.9
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	2400	2400	2400	2400	2400	2000	1200	1200	600	600
6. TOTAL CAPABILITY (1+5) (MW)	31189	32246	31386	32468	31442	32112	31366	32468	31032	32120
7. TOTAL RESERVES (6-2) (MW)	7195	6169	6584	5629	5907	4603	5025	4161	3837	3165
8. TOTAL RESERVES (%) (7/2)X100	30.0	23.7	26.5	21.0	23.1	16.7	19.1	14.7	14.1	10.9
9. SCHEDULED MAINTENANCE (MW)	1411	2615	1420	2634	1423	2638	1478	2739	1491	2761
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	29778	29631	29966	29834	30019	29474	29888	29729	29541	29359
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	5784	3554	5164	2995	4484	1965	3547	1422	2346	404
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	24.1	13.6	20.8	11.2	17.6	7.1	13.5	5.0	8.6	1.4
13. FULL FORCED OUTAGES (MW)	1465	1519	1475	1530	1478	1533	1535	1592	1549	1604
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	28313	28112	28491	28304	28541	27941	28353	28137	27992	27755
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	4319	2035	3689	1465	3006	432	2012	-170	797	-1200
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	18.0	7.8	14.9	5.5	11.8	1.6	7.6	-0.6	2.9	-4.1
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	913	946	919	953	921	955	956	991	965	999
18. ADJUSTED CAPABILITY (14-17) (MW)	27400	27166	27572	27351	27620	26986	27397	27146	27027	26756
19. ADJUSTED RESERVES (18-2) (MW)	3406	1089	2770	512	2085	-523	1056	-1161	-168	-2199
20. ADJUSTED RESERVES (%) (19/2)X100	14.2	4.2	11.2	1.9	8.2	-1.9	4.0	-4.1	-0.6	-7.6
21. ADJUSTED CAPACITY MARGIN (%) (19/1)x100.	11.8	3.6	9.6	1.7	7.2	-1.7	3.5	-3.7	-0.6	-7.0

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

CURRENT CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1985
MIDDLE SOUTH - GULF STATES GROUP (REGION 8)

	1985 SUMMER	1985 WINTER
1. PLANNED CAPABILITY (MW)	27890	28540
2. PEAK DEMAND(MW)	20113	15202
3. PLANNED RESERVES (1-2) (MW)	7777	13338
4. PLANNED RESERVES (%) (3/2)X100	38.7	87.7
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	1290	1233
6. TOTAL CAPABILITY (1+5) (MW)	29180	29773
7. TOTAL RESERVES (6-2) (MW)	9067	14571
8. TOTAL RESERVES (%) (7/2)X100	45.1	95.8
9. SCHEDULED MAINTENANCE (MW)	349	3382
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	28831	26391
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	8718	11189
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	43.3	73.6
13. FULL FORCED OUTAGES (MW)	2672	2734
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	26159	23657
15. RESERVES AFTER FULL FORCED OUTAGES (14-2)	6046	8455
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	30.1	55.6
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	563	577
18. ADJUSTED CAPABILITY (14-17) (MW)	25596	23080
19. ADJUSTED RESERVES (18-2) (MW)	5483	7878
20. ADJUSTED RESERVES (%) (19/2)X100	27.3	51.8
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	19.7	27.6

NOTE: Planned capability and peak demands in Table ER 8 include data for Jonesboro, filed after publication of IE-411.

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1986-1989
MIDDLE SOUTH - GULF STATES GROUP (REGION 8)

	1986		1987		1988		1989	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	28860	28497	28440	28440	28440	28070	28070	27738
2. PEAK DEMAND (MW)	20395	15593	20799	15877	21347	16314	21959	17701
3. PLANNED RESERVES (1-2) (MW)	8465	12904	7641	12563	7093	11756	6111	10037
4. PLANNED RESERVES (%) (3/2)X100	41.5	82.8	36.7	79.1	33.2	72.1	27.8	56.7
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	1396	1312	1481	1446	1259	1230	842	1112
6. TOTAL CAPABILITY (1+5) (MW)	30256	29809	29921	29886	29699	29300	28912	28850
7. TOTAL RESERVES (6-2) (MW)	9861	14216	9122	14009	8352	12986	6953	11149
8. TOTAL RESERVES (%) (7/2)X100	48.4	91.2	43.9	88.2	39.1	79.6	31.7	63.0
9. SCHEDULED MAINTENANCE (MW)	361	3377	355	3370	355	3326	351	3287
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	29895	26432	29566	26516	29344	25974	28561	25563
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	9500	10839	8767	10639	7997	9660	6602	7862
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	46.6	69.5	42.2	67.0	37.5	59.2	30.1	44.4
13. FULL FORCED OUTAGES (MW)	2765	2730	2725	2725	2725	2689	2689	2657
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	27130	23702	26841	23791	26619	23285	25872	22906
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	6735	8109	6042	7914	5272	6971	3913	5205
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	33.0	52.0	29.0	49.8	24.7	42.7	17.8	29.4
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	583	576	574	574	574	567	567	560
18. ADJUSTED CAPABILITY (14-17) (MW)	26547	23126	26267	23217	26045	22718	25305	22346
19. ADJUSTED RESERVES (18-2) (MW)	6152	7533	5468	7340	4698	6404	3346	4645
20. ADJUSTED RESERVES (%) (19/2)X100	30.2	48.3	26.3	46.2	22.0	39.3	15.2	26.2
21. ADJUSTED CAPACITY MARGINS (%) (19/1)X100.	21.3	26.4	19.2	25.8	16.5	22.8	11.9	16.7

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1990-1994
MIDDLE SOUTH - GULF STATES GROUP (REGION 8)

	1990		1991		1992		1993		1994	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	27641	27566	28668	28784	28784	29571	29571	30015	29905	29795
2. PEAK DEMAND (MW)	22539	17178	23056	17382	23471	17720	23890	18078	24451	18432
3. PLANNED RESERVES (1-2)	5102	10388	5612	11402	5313	11851	5681	11937	5454	11363
4. PLANNED RESERVES (%) (3/2)X100	22.6	60.5	24.3	65.6	22.6	66.9	23.8	66.0	22.3	61.6
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	802	1012	1141	1351	641	641	641	641	631	631
6. TOTAL CAPABILITY (1+5) (MW)	28443	28578	29809	30135	29425	30212	30212	30656	30536	30426
7. TOTAL RESERVES (6-2) (MW)	5904	11400	6753	12753	5954	12492	6322	12578	6085	11994
8. TOTAL RESERVES (%) (7/2)X100	26.2	66.4	29.3	73.4	25.4	70.5	26.5	69.6	24.9	65.1
9. SCHEDULED MAINTENANCE (MW)	346	3267	358	3411	360	3504	370	3557	374	3531
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	28097	25311	29451	26724	29065	26708	29842	27099	30162	26895
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	5558	8133	6395	9342	5594	8988	5952	9021	5711	8463
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	24.7	47.3	27.7	53.7	23.8	50.7	24.9	49.9	23.4	45.9
13. FULL FORCED OUTAGES (MW)	2648	2641	2746	2758	2758	2833	2833	2875	2865	2854
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	25449	22670	26705	23966	26307	23875	27009	24224	27297	24041
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	2910	5492	3649	6584	2836	6155	3119	6146	2846	5609
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	12.9	32.0	15.8	37.9	12.1	34.7	13.1	34.0	11.6	30.4
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	558	557	579	581	581	597	597	606	604	602
18. ADJUSTED CAPABILITY (14-17) (MW)	24891	22113	26126	23385	25726	23278	26412	23618	26693	23439
19. ADJUSTED RESERVES (18-2) (MW)	2352	4935	3070	6003	2255	5558	2522	5540	2242	5007
20. ADJUSTED RESERVES (%) (19/2)X100	10.4	28.7	13.3	34.5	9.6	31.4	10.6	30.6	9.2	27.2
21. ADJUSTED CAPACITY MARGIN (%) (19/1)x100.	8.5	17.9	10.7	20.9	7.8	18.8	8.5	18.5	7.5	16.8

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

CURRENT CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1985
SOUTHERN COMPANY GROUP (REGION 9)

	1985 SUMMER	1985 WINTER
1. PLANNED CAPABILITY (MW)	32405	32547
2. PEAK DEMAND(MW)	23063	18901
3. PLANNED RESERVES (1-2) (MW)	9342	13646
4. PLANNED RESERVES (%) (3/2)X100	40.5	72.2
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	-2352	-2429
6. TOTAL CAPABILITY (1+5) (MW)	30053	30118
7. TOTAL RESERVES (6-2) (MW)	6990	11217
8. TOTAL RESERVES (%) (7/2)X100	30.3	59.3
9. SCHEDULED MAINTENANCE (MW)	580	2910
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	29473	27208
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	6410	8307
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	27.8	44.0
13. FULL FORCED OUTAGES (MW)	1581	1588
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	27892	25620
15. RESERVES AFTER FULL FORCED OUTAGES (14-2)	4829	6719
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	20.9	35.5
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	813	817
18. ADJUSTED CAPABILITY (14-17) (MW)	27079	24803
19. ADJUSTED RESERVES (18-2) (MW)	4016	5902
20. ADJUSTED RESERVES (%) (19/2)X100	17.4	31.2
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	12.4	18.1

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1986-1989
SOUTHERN COMPANY GROUP (REGION 9)

	1986		1987		1988		1989	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	32497	33355	34456	34456	34411	35552	36981	36904
2. PEAK DEMAND (MW)	23618	19244	24309	19682	24982	20160	25711	20644
3. PLANNED RESERVES (1-2) (MW)	8879	14111	10147	14774	9429	15392	11270	16260
4. PLANNED RESERVES (%) (3/2)X100	37.6	73.3	41.7	75.1	37.7	76.3	43.8	78.8
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	-2429	-3029	-3049	-3049	-3049	-3049	-3049	-3049
6. TOTAL CAPABILITY (1+5) (MW)	30068	30326	31407	31407	31362	32503	33932	33855
7. TOTAL RESERVES (6-2) (MW)	6450	11082	7098	11725	6380	12343	8221	13211
8. TOTAL RESERVES (%) (7/2)X100	27.3	57.6	29.2	59.6	25.5	61.2	32.0	64.0
9. SCHEDULED MAINTENANCE (MW)	582	2982	617	3080	616	3178	662	3299
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	29486	27344	30790	28327	30746	29325	33270	30556
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	5868	8100	6481	8645	5764	9165	7559	9912
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	24.8	42.1	26.7	43.9	23.1	45.5	29.4	48.0
13. FULL FORCED OUTAGES (MW)	1586	1628	1681	1681	1679	1735	1805	1801
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	27900	25716	29109	26646	29067	27590	31465	28755
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	4282	6472	4800	6964	4085	7430	5754	8111
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	18.1	33.6	19.7	35.4	16.4	36.9	22.4	39.3
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	816	837	865	865	864	892	928	926
18. ADJUSTED CAPABILITY (14-17) (MW)	27084	24879	28244	25781	28203	26698	30537	27829
19. ADJUSTED RESERVES (18-2) (MW)	3466	5635	3935	6099	3221	6538	4826	7185
20. ADJUSTED RESERVES (%) (19/2)X100	14.7	29.3	16.2	31.0	12.9	32.4	18.8	34.8
21. ADJUSTED CAPACITY MARGINS (%) (19/1)X100.	10.7	16.9	11.4	17.7	9.4	18.4	13.0	19.5

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1990-1994
SOUTHERN COMPANY GROUP (REGION 9)

	1990		1991		1992		1993		1994	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	36834	36973	38129	36164	38253	38263	38294	38331	38294	38171
2. PEAK DEMAND (MW)	26370	20981	27039	21694	27684	22154	28330	22648	28962	23166
3. PLANNED RESERVES (1-2)	10464	15992	11090	14470	10569	16109	9964	15683	9332	15005
4. PLANNED RESERVES (%) (3/2)X100	39.7	76.2	41.0	66.7	38.2	72.7	35.2	69.2	32.2	64.8
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	-3049	-3049	-3049	-3049	-2349	-1949	-1149	-1149	-549	-549
6. TOTAL CAPABILITY (1+5) (MW)	33785	33924	35080	33115	35904	36314	37145	37182	37745	37622
7. TOTAL RESERVES (6-2) (MW)	7415	12943	8041	11421	8220	14160	8815	14534	8783	14456
8. TOTAL RESERVES (%) (7/2)X100	28.1	61.7	29.7	52.6	29.7	63.9	31.1	64.2	30.3	62.4
9. SCHEDULED MAINTENANCE (MW)	659	3305	683	3233	685	3421	685	3427	685	3412
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	33126	30619	34397	29882	35219	32893	36460	33755	37060	34210
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	6756	9638	7358	8188	7535	10739	8130	11107	8098	11044
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	25.6	45.9	27.2	37.7	27.2	48.5	28.7	49.0	28.0	47.7
13. FULL FORCED OUTAGES (MW)	1797	1804	1861	1765	1867	1867	1869	1871	1869	1863
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	31329	28815	32536	28117	33352	31026	34591	31884	35191	32347
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	4959	7834	5497	6423	5668	8872	6261	9236	6229	9181
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	18.8	37.3	20.3	29.6	20.5	40.0	22.1	40.8	21.5	39.6
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	925	928	957	908	960	960	961	962	961	958
18. ADJUSTED CAPABILITY (14-17) (MW)	30404	27887	31579	27209	32392	30066	33630	30922	34230	31389
19. ADJUSTED RESERVES (18-2) (MW)	4034	6906	4540	5515	4708	7912	5300	8274	5268	8223
20. ADJUSTED RESERVES (%) (19/2)X100	15.3	32.9	16.8	25.4	17.0	35.7	18.7	36.5	18.2	35.5
21. ADJUSTED CAPACITY MARGIN (%) (19/1)x100.	11.0	18.7	11.9	15.2	12.3	20.7	13.8	21.6	13.8	21.5

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

CURRENT CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1985
TENNESSEE VALLEY AUTHORITY GROUP (REGION 11)

	1985 SUMMER	1985 WINTER
1. PLANNED CAPABILITY (MW)	29847	31243
2. PEAK DEMAND(MW)	19743	20264
3. PLANNED RESERVES (1-2) (MW)	10104	10979
4. PLANNED RESERVES (%) (3/2)X100	51.2	54.2
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	-599	-275
6. TOTAL CAPABILITY (1+5) (MW)	29248	30968
7. TOTAL RESERVES (6-2) (MW)	9505	10704
8. TOTAL RESERVES (%) (7/2)X100	48.1	52.8
9. SCHEDULED MAINTENANCE (MW)	2197	2056
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	27051	28912
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	7308	8648
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	37.0	42.7
13. FULL FORCED OUTAGES (MW)	3268	3421
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	23783	25491
15. RESERVES AFTER FULL FORCED OUTAGES (14-2)	4040	5227
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	20.5	25.8
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	648	678
18. ADJUSTED CAPABILITY (14-17) (MW)	23135	24813
19. ADJUSTED RESERVES (18-2) (MW)	3392	4549
20. ADJUSTED RESERVES (%) (19/2)X100	17.2	22.4
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	11.4	14.6

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1986-1989
TENNESSEE VALLEY AUTHORITY GROUP (REGION 11)

	1986		1987		1988		1989	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	31017	31243	31017	31243	32187	32413	33399	33625
2. PEAK DEMAND (MW)	20626	20610	21102	21703	22326	21936	22685	22300
3. PLANNED RESERVES (1-2) (MW)	10391	10633	9915	9540	9861	10477	10714	11325
4. PLANNED RESERVES (%) (3/2)X100	50.4	51.6	47.0	44.0	44.2	47.8	47.2	50.8
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	-675	-275	-675	-475	-475	-475	-475	-475
6. TOTAL CAPABILITY (1+5) (MW)	30342	30968	30342	30768	31712	31938	32924	33150
7. TOTAL RESERVES (6-2) (MW)	9716	10358	9240	9065	9386	10002	10239	10850
8. TOTAL RESERVES (%) (7/2)X100	47.1	50.3	43.8	41.8	42.0	45.6	45.1	48.7
9. SCHEDULED MAINTENANCE (MW)	2283	2056	2283	2056	2369	2133	2458	2213
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	28059	28912	28059	28712	29343	29805	30466	30937
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	7433	8302	6957	7009	7017	7869	7781	8637
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	36.0	40.3	33.0	32.3	31.4	35.9	34.3	38.7
13. FULL FORCED OUTAGES (MW)	3396	3421	3396	3421	3524	3549	3657	3682
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	24663	25491	24663	25291	25819	26256	26809	27255
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	4037	4881	3561	3588	3493	4320	4124	4955
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	19.6	23.7	16.9	16.5	15.6	19.7	18.2	22.2
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	673	678	673	678	698	703	725	730
18. ADJUSTED CAPABILITY (14-17) (MW)	23990	24813	23990	24613	25121	25553	26084	26525
19. ADJUSTED RESERVES (18-2) (MW)	3364	4203	2888	2910	2795	3617	3399	4225
20. ADJUSTED RESERVES (%) (19/2)X100	16.3	20.4	13.7	13.4	12.5	16.5	15.0	18.9
21. ADJUSTED CAPACITY MARGINS (%) (19/1)X100.	10.8	13.5	9.3	9.3	8.7	11.2	10.2	12.6

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1990-1994
TENNESSEE VALLEY AUTHORITY GROUP (REGION 11)

	1990		1991		1992		1993		1994	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	33399	33625	34611	34837	34611	34837	34611	34837	34611	34837
2. PEAK DEMAND (MW)	23162	22721	23598	23226	24114	23581	24483	23970	24878	24331
3. PLANNED RESERVES (1-2)	10237	10904	11013	11611	10497	11256	10128	10867	9733	10506
4. PLANNED RESERVES (%) (3/2)X100	44.2	48.0	46.7	50.0	43.5	47.7	41.4	45.3	39.1	43.2
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	-475	-475	-475	-475	-475	-475	-475	-475	-475	-475
6. TOTAL CAPABILITY (1+5) (MW)	32924	33150	34136	34362	34136	34362	34136	34362	34136	34362
7. TOTAL RESERVES (6-2) (MW)	9762	10429	10538	11136	10022	10781	9653	10392	9258	10031
8. TOTAL RESERVES (%) (7/2)X100	42.1	45.9	44.7	47.9	41.6	45.7	39.4	43.4	37.2	41.2
9. SCHEDULED MAINTENANCE (MW)	2458	2213	2547	2292	2547	2292	2547	2292	2547	2292
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	30466	30937	31589	32070	31589	32070	31589	32070	31589	32070
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	7304	8216	7991	8844	7475	8489	7106	8100	6711	7739
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	31.5	36.2	33.9	38.1	31.0	36.0	29.0	33.8	27.0	31.8
13. FULL FORCED OUTAGES (MW)	3657	3682	3790	3815	3790	3815	3790	3815	3790	3815
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	26809	27255	27799	28255	27799	28255	27799	28255	27799	28255
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	3647	4534	4201	5029	3685	4674	3316	4285	2921	3924
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	15.7	20.0	17.8	21.7	15.3	19.8	13.5	17.9	11.7	16.1
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	725	730	751	756	751	756	751	756	751	756
18. ADJUSTED CAPABILITY (14-17) (MW)	26084	26525	27048	27499	27048	27499	27048	27499	27048	27499
19. ADJUSTED RESERVES (18-2) (MW)	2922	3804	3450	4273	2934	3918	2565	3529	2170	3168
20. ADJUSTED RESERVES (%) (19/2)X100	12.6	16.7	14.6	18.4	12.2	16.6	10.5	14.7	8.7	13.0
21. ADJUSTED CAPACITY MARGIN (%) (19/1)x100.	8.7	11.3	10.0	12.3	8.5	11.2	7.4	10.1	6.3	9.1

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

CURRENT CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1985
VIRGINIA-CAROLINAS GROUP (REGION 12)

	1985 SUMMER	1985 WINTER
1. PLANNED CAPABILITY (MW)	41390 a	43499
2. PEAK DEMAND(MW)	33805	33329
3. PLANNED RESERVES (1-2) (MW)	7585	10170
4. PLANNED RESERVES (%) (3/2)X100	22.4	30.5
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	1080	494
6. TOTAL CAPABILITY (1+5) (MW)	42470	43993
7. TOTAL RESERVES (6-2) (MW)	8665	10664
8. TOTAL RESERVES (%) (7/2)X100	25.6	32.0
9. SCHEDULED MAINTENANCE (MW)	4160	3319
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	38310	40674
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	4505	7345
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	13.3	22.0
13. FULL FORCED OUTAGES (MW)	2396	2519
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	35914	38155
15. RESERVES AFTER FULL FORCED OUTAGES (14-2)	2109	4826
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	6.2	14.5
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	2612	2745
18. ADJUSTED CAPABILITY (14-17) (MW)	33302	35410
19. ADJUSTED RESERVES (18-2) (MW)	-503	2081
20. ADJUSTED RESERVES (%) (19/2)X100	-1.5	6.2
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	-1.2	4.8

a Bath County Units 1, 2 and 3 have been deleted (total 630 Mw) because water conduit problems will delay operation until after the summer peak, and Catawba 1 (1145 Mw) has been added because its commercial date has been advanced to June 1, according to the SERC office. The net effect is to add 515 Mw to the IE-411 summer net dependable capability.

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1986-1989
VIRGINIA-CAROLINAS GROUP (REGION 12)

	1986		1987		1988		1989	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	42875	44475	43925	45757	45152	45839	45204	45891
2. PEAK DEMAND (MW)	34450	33906	34587	34633	35541	35446	36496	36298
3. PLANNED RESERVES (1-2) (MW)	8425	10569	9338	11124	9611	10393	8708	9593
4. PLANNED RESERVES (%) (3/2)X100	24.5	31.2	27.0	32.1	27.0	29.3	23.9	26.4
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	794	914	914	914	914	914	914	914
6. TOTAL CAPABILITY (1+5) (MW)	43669	45389	44839	46671	46066	46753	46118	46805
7. TOTAL RESERVES (6-2) (MW)	9219	11483	10252	12038	10525	11307	9622	10507
8. TOTAL RESERVES (%) (7/2)X100	26.8	33.9	29.6	34.8	29.6	31.9	26.4	28.9
9. SCHEDULED MAINTENANCE (MW)	4309	3393	4414	3491	4538	3498	4543	3501
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	39360	41996	40425	43180	41528	43255	41575	43304
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	4910	8090	5838	8547	5987	7809	5079	7006
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	14.3	23.9	16.9	24.7	16.8	22.0	13.9	19.3
13. FULL FORCED OUTAGES (MW)	2482	2575	2543	2649	2614	2654	2617	2657
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	36878	39421	37882	40531	38914	40601	38958	40647
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	2428	5515	3295	5898	3373	5155	2462	4349
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	7.0	16.3	9.5	17.0	9.5	14.5	6.7	12.0
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	2705	2806	2772	2887	2849	2892	2852	2896
18. ADJUSTED CAPABILITY (14-17) (MW)	34173	36615	35110	37644	36065	37709	36106	37751
19. ADJUSTED RESERVES (18-2) (MW)	-277	2709	523	3011	524	2263	-390	1453
20. ADJUSTED RESERVES (%) (19/2)X100	-0.8	8.0	1.5	8.7	1.5	6.4	-1.1	4.0
21. ADJUSTED CAPACITY MARGINS (%) (19/1)X100.	-0.6	6.1	1.2	6.6	1.2	4.9	-0.9	3.2

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1990-1994
VIRGINIA-CAROLINAS GROUP (REGION 12)

	1990		1991		1992		1993		1994	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	45399	46161	46807	47494	47307	48744	48861	49548	49551	50988
2. PEAK DEMAND (MW)	37305	37017	37977	37834	38792	38643	39874	39688	40859	40636
3. PLANNED RESERVES (1-2)	8094	9144	8830	9660	8515	10101	8987	9860	8692	10352
4. PLANNED RESERVES (%) (3/2)X100	21.7	24.7	23.3	25.5	22.0	26.1	22.5	24.8	21.3	25.5
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	914	914	914	914	914	914	914	914	914	914
6. TOTAL CAPABILITY (1+5) (MW)	46313	47075	47721	48408	48221	49658	49775	50462	50465	51902
7. TOTAL RESERVES (6-2) (MW)	9008	10058	9744	10574	9429	11015	9901	10774	9606	11266
8. TOTAL RESERVES (%) (7/2)X100	24.1	27.2	25.7	27.9	24.3	28.5	24.8	27.1	23.5	27.7
9. SCHEDULED MAINTENANCE (MW)	4563	3522	4704	3624	4754	3719	4911	3781	4980	3890
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	41750	43553	43017	44784	43467	45939	44864	46681	45485	48012
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	4445	6536	5040	6950	4675	7296	4990	6993	4626	7376
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	11.9	17.7	13.3	18.4	12.1	18.9	12.5	17.6	11.3	18.2
13. FULL FORCED OUTAGES (MW)	2629	2673	2710	2750	2739	2822	2829	2869	2869	2952
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	39121	40880	40307	42034	40728	43117	42035	43812	42616	45060
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	1816	3863	2330	4200	1936	4474	2161	4124	1757	4424
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	4.9	10.4	6.1	11.1	5.0	11.6	5.4	10.4	4.3	10.9
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	2865	2913	2954	2997	2985	3076	3083	3126	3127	3217
18. ADJUSTED CAPABILITY (14-17) (MW)	36256	37967	37353	39037	37743	40041	38952	40686	39489	41843
19. ADJUSTED RESERVES (18-2) (MW)	-1049	950	-624	1203	-1049	1398	-922	998	-1370	1207
20. ADJUSTED RESERVES (%) (19/2)X100	-2.8	2.6	-1.6	3.2	-2.7	3.6	-2.3	2.5	-3.4	3.0
21. ADJUSTED CAPACITY MARGIN (%) (19/1)x100.	-2.3	2.1	-1.3	2.5	-2.2	2.9	-1.9	2.0	-2.8	2.4

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

CURRENT CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1985
W.PA.-NO.CENTRAL OHIO GROUP (REGION 13)

	1985 SUMMER	1985 WINTER
1. PLANNED CAPABILITY (MW)	14529	16002
2. PEAK DEMAND(MW)	11524	10832
3. PLANNED RESERVES (1-2) (MW)	3005	5170
4. PLANNED RESERVES (%) (3/2)X100	26.1	47.7
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	-253	-69
6. TOTAL CAPABILITY (1+5) (MW)	14276	15933
7. TOTAL RESERVES (6-2) (MW)	2752	5101
8. TOTAL RESERVES (%) (7/2)X100	23.9	47.1
9. SCHEDULED MAINTENANCE (MW)	1543	1795
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	12733	14138
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	1209	3306
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	10.5	30.5
13. FULL FORCED OUTAGES (MW)	1093	1203
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	11640	12935
15. RESERVES AFTER FULL FORCED OUTAGES (14-2)	116	2103
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	1.0	19.4
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	1084	1194
18. ADJUSTED CAPABILITY (14-17) (MW)	10556	11741
19. ADJUSTED RESERVES (18-2) (MW)	-968	909
20. ADJUSTED RESERVES (%) (19/2)X100	-8.4	8.4
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	-6.7	5.7

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1986-1989
W.PA.-NO. CENTRAL OHIO GROUP (REGION 13)

	1986		1987		1988		1989	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	15692	16002	15692	16776	16453	16776	16450	16797
2. PEAK DEMAND (MW)	11723	10867	11741	11001	11839	11102	11954	11218
3. PLANNED RESERVES (1-2) (MW)	3969	5135	3951	5775	4614	5674	4496	5579
4. PLANNED RESERVES (%) (3/2)X100	33.9	47.3	33.7	52.5	39.0	51.1	37.6	49.7
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	35	-83	57	-114	9	-171	-85	-155
6. TOTAL CAPABILITY (1+5) (MW)	15727	15919	15749	16662	16462	16605	16365	16642
7. TOTAL RESERVES (6-2) (MW)	4004	5052	4008	5661	4623	5503	4411	5424
8. TOTAL RESERVES (%) (7/2)X100	34.2	46.5	34.1	51.5	39.0	49.6	36.9	48.4
9. SCHEDULED MAINTENANCE (MW)	1666	1795	1666	1882	1747	1882	1747	1885
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	14061	14124	14083	14780	14715	14723	14618	14757
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	2338	3257	2342	3779	2876	3621	2664	3539
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	19.9	30.0	19.9	34.4	24.3	32.6	22.3	31.5
13. FULL FORCED OUTAGES (MW)	1180	1203	1180	1262	1237	1262	1237	1263
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	12881	12921	12903	13518	13478	13461	13381	13494
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	1158	2054	1162	2517	1639	2359	1427	2276
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	9.9	18.9	9.9	22.9	13.8	21.2	11.9	20.3
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	1171	1194	1171	1251	1227	1251	1227	1253
18. ADJUSTED CAPABILITY (14-17) (MW)	11710	11727	11732	12267	12251	12210	12154	12241
19. ADJUSTED RESERVES (18-2) (MW)	-13	860	-9	1266	412	1108	200	1023
20. ADJUSTED RESERVES (%) (19/2)X100	-0.1	7.9	-0.1	11.5	3.5	10.0	1.7	9.1
21. ADJUSTED CAPACITY MARGINS (%) (19/1)X100.	-0.1	5.4	-0.1	7.5	2.5	6.6	1.2	6.1

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1990-1994
W. PA-NO.CENTRAL OHIO GROUP (REGION 13)

	1990		1991		1992		1993		1994	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	16474	16797	16474	16797	16474	16797	16474	16797	16474	16797
2. PEAK DEMAND (MW)	12097	11433	12334	11649	12591	11891	12861	12140	13142	12399
3. PLANNED RESERVES (1-2)	4377	5364	4140	5148	3883	4906	3613	4657	3332	4398
4. PLANNED RESERVES (%) (3/2)X100	36.2	46.9	33.6	44.2	30.8	41.3	28.1	38.4	25.4	35.5
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	-81	-135	-69	-124	-32	-92	198	132	214	146
6. TOTAL CAPABILITY (1+5) (MW)	16393	16662	16405	16673	16442	16705	16672	16929	16688	16943
7. TOTAL RESERVES (6-2) (MW)	4296	5229	4071	5024	3851	4814	3811	4789	3546	4544
8. TOTAL RESERVES (%) (7/2)X100	35.5	45.7	33.0	43.1	30.6	40.5	29.6	39.4	27.0	36.6
9. SCHEDULED MAINTENANCE (MW)	1750	1885	1750	1885	1750	1885	1750	1885	1750	1885
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	14643	14777	14655	14788	14692	14820	14922	15044	14938	15058
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	2546	3344	2321	3139	2101	2929	2061	2904	1796	2659
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	21.0	29.2	18.8	26.9	16.7	24.6	16.0	23.9	13.7	21.4
13. FULL FORCED OUTAGES (MW)	1239	1263	1239	1263	1239	1263	1239	1263	1239	1263
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	13404	13514	13416	13525	13453	13557	13683	13781	13699	13795
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	1307	2081	1082	1876	862	1666	822	1641	557	1396
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	10.8	18.2	8.8	16.1	6.8	14.0	6.4	13.5	4.2	11.3
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	1229	1253	1229	1253	1229	1253	1229	1253	1229	1253
18. ADJUSTED CAPABILITY (14-17) (MW)	12175	12261	12187	12272	12224	12304	12454	12528	12470	12542
19. ADJUSTED RESERVES (18-2) (MW)	78	828	-147	623	-367	413	-407	388	-672	143
20. ADJUSTED RESERVES (%) (19/2)X100	0.6	7.2	-1.2	5.3	-2.9	3.5	-3.2	3.2	-5.1	1.2
21. ADJUSTED CAPACITY MARGIN (%) (19/1)x100.	0.5	4.9	-0.9	3.7	-2.2	2.5	-2.5	2.3	-4.1	0.9

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

CURRENT CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1985
CINCINNATI-DAYTON-HAMILTON GROUP (REGION 14)

	1985 SUMMER	1985 WINTER
1. PLANNED CAPABILITY (MW)	6812	7005
2. PEAK DEMAND(MW)	5605	5137
3. PLANNED RESERVES (1-2) (MW)	1207	1868
4. PLANNED RESERVES (%) (3/2)X100	21.5	36.4
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	90	97
6. TOTAL CAPABILITY (1+5) (MW)	6902	7102
7. TOTAL RESERVES (6-2) (MW)	1297	1965
8. TOTAL RESERVES (%) (7/2)X100	23.1	38.3
9. SCHEDULED MAINTENANCE (MW)	196	462
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	6706	6640
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	1101	1503
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	19.6	29.3
13. FULL FORCED OUTAGES (MW)	339	348
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	6367	6292
15. RESERVES AFTER FULL FORCED OUTAGES (14-2)	762	1155
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	13.6	22.5
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	399	410
18. ADJUSTED CAPABILITY (14-17) (MW)	5968	5882
19. ADJUSTED RESERVES (18-2) (MW)	363	745
20. ADJUSTED RESERVES (%) (19/2)X100	6.5	14.5
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	5.3	10.6

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1986-1989
CINCINNATI-DAYTON-HAMILTON GROUP (REGION 14)

	1986		1987		1988		1989	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	6812	7005	6812	7005	6812	7005	6812	7005
2. PEAK DEMAND (MW)	5710	5249	5833	5368	5970	5492	6109	5597
3. PLANNED RESERVES (1-2) (MW)	1102	1756	979	1637	842	1513	703	1408
4. PLANNED RESERVES (%) (3/2)X100	19.3	33.5	16.8	30.5	14.1	27.5	11.5	25.2
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	95	92	90	74	74	59	58	58
6. TOTAL CAPABILITY (1+5) (MW)	6907	7097	6902	7079	6886	7064	6870	7063
7. TOTAL RESERVES (6-2) (MW)	1197	1848	1069	1711	916	1572	761	1466
8. TOTAL RESERVES (%) (7/2)X100	21.0	35.2	18.3	31.9	15.3	28.6	12.5	26.2
9. SCHEDULED MAINTENANCE (MW)	196	462	196	462	196	462	196	462
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	6711	6635	6706	6617	6690	6602	6674	6601
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	1001	1386	873	1249	720	1110	565	1004
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	17.5	26.4	15.0	23.3	12.1	20.2	9.2	17.9
13. FULL FORCED OUTAGES (MW)	339	348	339	348	339	348	339	348
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	6372	6287	6367	6269	6351	6254	6335	6253
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	662	1038	534	901	381	762	226	656
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	11.6	19.8	9.2	16.8	6.4	13.9	3.7	11.7
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	399	410	399	410	399	410	399	410
18. ADJUSTED CAPABILITY (14-17) (MW)	5973	5877	5968	5859	5952	5844	5936	5843
19. ADJUSTED RESERVES (18-2) (MW)	263	628	135	491	-18	352	-173	246
20. ADJUSTED RESERVES (%) (19/2)X100	4.6	12.0	2.3	9.1	-0.3	6.4	-2.8	4.4
21. ADJUSTED CAPACITY MARGINS (%) (19/1)X100.	3.9	9.0	2.0	7.0	-0.3	5.0	-2.5	3.5

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1990-1994
CINCINNATI-DAYTON-HAMILTON GROUP (REGION 14)

	1990		1991		1992		1993		1994	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	6812	6876	7687	7847	7807	7839	7790	7926	7866	8076
2. PEAK DEMAND (MW)	6224	5708	6337	5847	6449	5963	6558	6093	6674	6206
3. PLANNED RESERVES (1-2)	588	1168	1350	2000	1358	1876	1232	1833	1192	1870
4. PLANNED RESERVES (%) (3/2)X100	9.4	20.5	21.3	34.2	21.1	31.5	18.8	30.1	17.9	30.1
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	57	57	56	56	55	55	54	54	53	53
6. TOTAL CAPABILITY (1+5) (MW)	6869	6933	7743	7903	7862	7894	7844	7980	7919	8129
7. TOTAL RESERVES (6-2) (MW)	645	1225	1406	2056	1413	1931	1286	1887	1245	1923
8. TOTAL RESERVES (%) (7/2)X100	10.4	21.5	22.2	35.2	21.9	32.4	19.6	31.0	18.7	31.0
9. SCHEDULED MAINTENANCE (MW)	196	454	221	518	225	517	224	523	227	533
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	6673	6479	7522	7385	7637	7377	7620	7457	7692	7596
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	449	771	1185	1538	1188	1414	1062	1364	1018	1390
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	7.2	13.5	18.7	26.3	18.4	23.7	16.2	22.4	15.3	22.4
13. FULL FORCED OUTAGES (MW)	339	342	382	390	388	390	387	394	391	401
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	6334	6137	7140	6995	7249	6987	7233	7063	7301	7195
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	110	429	803	1148	800	1024	675	970	627	989
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	1.8	7.5	12.7	19.6	12.4	17.2	10.3	15.9	9.4	15.9
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	399	403	450	460	457	459	456	464	461	473
18. ADJUSTED CAPABILITY (14-17) (MW)	5935	5734	6690	6535	6792	6528	6777	6599	6840	6722
19. ADJUSTED RESERVES (18-2) (MW)	-289	26	353	688	343	565	219	506	166	516
20. ADJUSTED RESERVES (%) (19/2)X100	-4.6	0.5	5.6	11.8	5.3	9.5	3.3	8.3	2.5	8.3
21. ADJUSTED CAPACITY MARGIN (%) (19/1)x100.	-4.2	0.4	4.6	8.8	4.4	7.2	2.8	6.4	2.1	6.4

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

CURRENT CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1985
KENTUCKY GROUP (REGION 15)

	1985 SUMMER	1985 WINTER
1. PLANNED CAPABILITY (MW)	8895	8834
2. PEAK DEMAND(MW)	6216	6019
3. PLANNED RESERVES (1-2) (MW)	2679	2815
4. PLANNED RESERVES (%) (3/2)X100	43.1	46.8
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	393	344
6. TOTAL CAPABILITY (1+5) (MW)	9288	9178
7. TOTAL RESERVES (6-2) (MW)	3072	3159
8. TOTAL RESERVES (%) (7/2)X100	49.4	52.5
9. SCHEDULED MAINTENANCE (MW)	443	603
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	8845	8575
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	2629	2556
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	42.3	42.5
13. FULL FORCED OUTAGES (MW)	297	295
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	8548	8280
15. RESERVES AFTER FULL FORCED OUTAGES (14-2)	2332	2261
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	37.5	37.6
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	366	364
18. ADJUSTED CAPABILITY (14-17) (MW)	8182	7916
19. ADJUSTED RESERVES (18-2) (MW)	1966	1897
20. ADJUSTED RESERVES (%) (19/2)X100	31.6	31.5
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	22.1	21.5

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1986-1989
KENTUCKY GROUP (REGION 15)

	1986		1987		1988		1989	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	8895	8834	8895	8717	9273	9212	9273	9212
2. PEAK DEMAND (MW)	6390	6175	6519	6323	6679	6501	6842	6690
3. PLANNED RESERVES (1-2) (MW)	2505	2659	2376	2394	2594	2711	2431	2522
4. PLANNED RESERVES (%) (3/2)X100	39.2	43.1	36.4	37.9	38.8	41.7	35.5	37.7
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	404	333	395	299	365	267	334	264
6. TOTAL CAPABILITY (1+5) (MW)	9299	9167	9290	9016	9638	9479	9607	9476
7. TOTAL RESERVES (6-2) (MW)	2909	2992	2771	2693	2959	2978	2765	2786
8. TOTAL RESERVES (%) (7/2)X100	45.5	48.5	42.5	42.6	44.3	45.8	40.4	41.6
9. SCHEDULED MAINTENANCE (MW)	443	603	443	595	462	629	462	629
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	8856	8564	8847	8421	9176	8850	9145	8847
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	2466	2389	2328	2098	2497	2349	2303	2157
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	38.6	38.7	35.7	33.2	37.4	36.1	33.7	32.2
13. FULL FORCED OUTAGES (MW)	297	295	297	291	310	308	310	308
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	8559	8269	8550	8130	8866	8542	8835	8539
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	2169	2094	2031	1807	2187	2041	1993	1849
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	33.9	33.9	31.2	28.6	32.7	31.4	29.1	27.6
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	366	364	366	359	382	380	382	380
18. ADJUSTED CAPABILITY (14-17) (MW)	8193	7905	8184	7771	8484	8162	8453	8159
19. ADJUSTED RESERVES (18-2) (MW)	1803	1730	1665	1448	1805	1661	1611	1469
20. ADJUSTED RESERVES (%) (19/2)X100	28.2	28.0	25.5	22.9	27.0	25.5	23.5	22.0
21. ADJUSTED CAPACITY MARGINS (%) (19/1)X100.	20.3	19.6	18.7	16.6	19.5	18.0	17.4	15.9

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1990-1994
KENTUCKY GROUP (REGION 15)

	1990		1991		1992		1993		1994	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	9273	9212	9273	9212	9273	9812	9873	10462	10523	10462
2. PEAK DEMAND (MW)	7011	6889	7181	7081	7313	7215	7437	7343	7570	7488
3. PLANNED RESERVES (1-2)	2262	2323	2092	2131	1960	2597	2436	3119	2953	2974
4. PLANNED RESERVES (%) (3/2)X100	32.3	33.7	29.1	30.1	26.8	36.0	32.8	42.5	39.0	39.7
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	331	260	331	258	328	254	328	252	327	249
6. TOTAL CAPABILITY (1+5) (MW)	9604	9472	9604	9470	9601	10066	10201	10714	10850	10711
7. TOTAL RESERVES (6-2) (MW)	2593	2583	2423	2389	2288	2851	2764	3371	3280	3223
8. TOTAL RESERVES (%) (7/2)X100	37.0	37.5	33.7	33.7	31.3	39.5	37.2	45.9	43.3	43.0
9. SCHEDULED MAINTENANCE (MW)	462	629	462	629	462	670	492	715	524	715
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	9142	8843	9142	8841	9139	9396	9709	9999	10326	9996
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	2131	1954	1961	1760	1826	2181	2272	2656	2756	2508
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	30.4	28.4	27.3	24.9	25.0	30.2	30.5	36.2	36.4	33.5
13. FULL FORCED OUTAGES (MW)	310	308	310	308	310	328	330	349	351	349
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	8832	8535	8832	8533	8829	9068	9379	9650	9975	9647
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	1821	1646	1651	1452	1516	1853	1942	2307	2405	2159
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	26.0	23.9	23.0	20.5	20.7	25.7	26.1	31.4	31.8	28.8
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	382	380	382	380	382	404	407	431	434	431
18. ADJUSTED CAPABILITY (14-17) (MW)	8450	8155	8450	8153	8447	8664	8972	9219	9541	9216
19. ADJUSTED RESERVES (18-2) (MW)	1439	1266	1269	1072	1134	1449	1535	1876	1971	1728
20. ADJUSTED RESERVES (%) (19/2)X100	20.5	18.4	17.7	15.1	15.5	20.1	20.6	25.5	26.0	23.1
21. ADJUSTED CAPACITY MARGIN (%) (19/1)x100.	15.5	13.7	13.7	11.6	12.2	14.8	15.5	17.9	18.7	16.5

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

CURRENT CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1985
INDIANA GROUP (REGION 16)

	1985 SUMMER	1985 WINTER
1. PLANNED CAPABILITY (MW)	13443	13836
2. PEAK DEMAND(MW)	9828	9215
3. PLANNED RESERVES (1-2) (MW)	3615	4621
4. PLANNED RESERVES (%) (3/2)X100	36.8	50.1
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	9	11
6. TOTAL CAPABILITY (1+5) (MW)	13452	13847
7. TOTAL RESERVES (6-2) (MW)	3624	4632
8. TOTAL RESERVES (%) (7/2)X100	36.9	50.3
9. SCHEDULED MAINTENANCE (MW)	952	1212
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	12500	12635
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	2672	3420
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	27.2	37.1
13. FULL FORCED OUTAGES (MW)	604	621
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	11896	12014
15. RESERVES AFTER FULL FORCED OUTAGES (14-2)	2068	2799
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	21.0	30.4
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	879	905
18. ADJUSTED CAPABILITY (14-17) (MW)	11017	11109
19. ADJUSTED RESERVES (18-2) (MW)	1189	1894
20. ADJUSTED RESERVES (%) (19/2)X100	12.1	20.6
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	8.8	13.7

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1986-1989
INDIANA GROUP (REGION 16)

	1986		1987		1988		1989	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	14552	14695	14552	14695	14552	14695	14552	14695
2. PEAK DEMAND (MW)	10011	9431	10210	9680	10405	9925	10623	10234
3. PLANNED RESERVES (1-2) (MW)	4541	5264	4342	5015	4147	4770	3929	4461
4. PLANNED RESERVES (%) (3/2)X100	45.4	55.8	42.5	51.8	39.9	48.1	37.0	43.6
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	11	10	-191	-395	-395	-400	-400	-400
6. TOTAL CAPABILITY (1+5) (MW)	14563	14705	14361	14300	14157	14295	14152	14295
7. TOTAL RESERVES (6-2) (MW)	4552	5274	4151	4620	3752	4370	3529	4061
8. TOTAL RESERVES (%) (7/2)X100	45.5	55.9	40.7	47.7	36.1	44.0	33.2	39.7
9. SCHEDULED MAINTENANCE (MW)	1030	1287	1030	1287	1030	1287	1030	1287
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	13533	13418	13331	13013	13127	13008	13122	13008
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	3522	3987	3121	3333	2722	3083	2499	2774
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	35.2	42.3	30.6	34.4	26.2	31.1	23.5	27.1
13. FULL FORCED OUTAGES (MW)	653	660	653	660	653	660	653	660
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	12880	12758	12678	12353	12474	12348	12469	12348
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	2869	3327	2468	2673	2069	2423	1846	2114
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	28.7	35.3	24.2	27.6	19.9	24.4	17.4	20.7
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	952	961	952	961	952	961	952	961
18. ADJUSTED CAPABILITY (14-17) (MW)	11928	11797	11726	11392	11522	11387	11517	11387
19. ADJUSTED RESERVES (18-2) (MW)	1917	2366	1516	1712	1117	1462	894	1153
20. ADJUSTED RESERVES (%) (19/2)X100	19.1	25.1	14.8	17.7	10.7	14.7	8.4	11.3
21. ADJUSTED CAPACITY MARGINS (%) (19/1)X100.	13.2	16.1	10.4	11.7	7.7	9.9	6.1	7.8

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1990-1994
INDIANA GROUP (REGION 16)

	1990		1991		1992		1993		1994	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	14612	14765	14628	14791	14703	14954	15084	15394	15189	15424
2. PEAK DEMAND (MW)	10803	10499	11001	10750	11183	10985	11400	11252	11640	11531
3. PLANNED RESERVES (1-2)	3809	4266	3627	4041	3520	3969	3684	4142	3549	3893
4. PLANNED RESERVES (%) (3/2)X100	35.3	40.6	33.0	37.6	31.5	36.1	32.3	36.8	30.5	33.8
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	-400	-400	-400	-400	-400	-400	-400	-400	-400	-400
6. TOTAL CAPABILITY (1+5) (MW)	14212	14365	14228	14391	14303	14554	14684	14994	14789	15024
7. TOTAL RESERVES (6-2) (MW)	3409	3866	3227	3641	3120	3569	3284	3742	3149	3493
8. TOTAL RESERVES (%) (7/2)X100	31.6	36.8	29.3	33.9	27.9	32.5	28.8	33.3	27.1	30.3
9. SCHEDULED MAINTENANCE (MW)	1035	1293	1036	1296	1041	1310	1068	1349	1075	1351
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	13177	13072	13192	13095	13262	13244	13616	13645	13714	13673
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	2374	2573	2191	2345	2079	2259	2216	2393	2074	2142
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	22.0	24.5	19.9	21.8	18.6	20.6	19.4	21.3	17.8	18.6
13. FULL FORCED OUTAGES (MW)	656	663	657	664	660	671	677	691	682	693
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	12521	12409	12535	12431	12602	12573	12939	12954	13032	12980
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	1718	1910	1534	1681	1419	1588	1539	1702	1392	1449
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	15.9	18.2	13.9	15.6	12.7	14.5	13.5	15.1	12.0	12.6
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	956	966	957	967	962	978	986	1007	993	1009
18. ADJUSTED CAPABILITY (14-17) (MW)	11565	11443	11578	11464	11640	11595	11953	11947	12039	11971
19. ADJUSTED RESERVES (18-2) (MW)	762	944	577	714	457	610	553	695	399	440
20. ADJUSTED RESERVES (%) (19/2)X100	7.1	9.0	5.2	6.6	4.1	5.6	4.9	6.2	3.4	3.8
21. ADJUSTED CAPACITY MARGIN (%) (19/1)x100.	5.2	6.4	3.9	4.8	3.1	4.1	3.7	4.5	2.6	2.9

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

CURRENT CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1985
SOUTH CENTRAL ILLINOIS-EAST MISSOURI GROUP (REGION 17)

	1985 SUMMER	1985 WINTER
1. PLANNED CAPABILITY (MW)	17227	17337
2. PEAK DEMAND(MW)	12959	10523
3. PLANNED RESERVES (1-2) (MW)	4268	6814
4. PLANNED RESERVES (%) (3/2)X100	32.9	64.8
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	-485	-501
6. TOTAL CAPABILITY (1+5) (MW)	16742	16836
7. TOTAL RESERVES (6-2) (MW)	3783	6313
8. TOTAL RESERVES (%) (7/2)X100	29.2	60.0
9. SCHEDULED MAINTENANCE (MW)	207	1370
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	16535	15466
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	3576	4943
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	27.6	47.0
13. FULL FORCED OUTAGES (MW)	885	891
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	15650	14575
15. RESERVES AFTER FULL FORCED OUTAGES (14-2)	2691	4052
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	20.8	38.5
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	806	811
18. ADJUSTED CAPABILITY (14-17) (MW)	14844	13764
19. ADJUSTED RESERVES (18-2) (MW)	1885	3241
20. ADJUSTED RESERVES (%) (19/2)X100	14.5	30.8
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	10.9	18.7

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1986-1989
SOUTH CENTRAL ILLINOIS-EAST MISSOURI GROUP (REGION 17)

	1986		1987		1988		1989	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	17099	18287	18049	18287	18049	18287	18049	18287
2. PEAK DEMAND (MW)	13094	10743	13157	10979	13320	11272	13479	11563
3. PLANNED RESERVES (1-2) (MW)	4005	7544	4892	7308	4729	7015	4570	6724
4. PLANNED RESERVES (%) (3/2)X100	30.6	70.2	37.2	66.6	35.5	62.2	33.9	58.2
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	-474	-491	-469	-486	-468	-486	-468	-486
6. TOTAL CAPABILITY (1+5) (MW)	16625	17796	17580	17801	17581	17801	17581	17801
7. TOTAL RESERVES (6-2) (MW)	3531	7053	4423	6822	4261	6529	4102	6238
8. TOTAL RESERVES (%) (7/2)X100	27.0	65.7	33.6	62.1	32.0	57.9	30.4	53.9
9. SCHEDULED MAINTENANCE (MW)	205	1445	217	1445	217	1445	217	1445
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	16420	16351	17363	16356	17364	16356	17364	16356
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	3326	5608	4206	5377	4044	5084	3885	4793
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	25.4	52.2	32.0	49.0	30.4	45.1	28.8	41.5
13. FULL FORCED OUTAGES (MW)	879	940	928	940	928	940	928	940
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	15541	15411	16435	15416	16436	15416	16436	15416
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	2447	4668	3278	4437	3116	4144	2957	3853
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	18.7	43.5	24.9	40.4	23.4	36.8	21.9	33.3
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	800	856	845	856	845	856	845	856
18. ADJUSTED CAPABILITY (14-17) (MW)	14741	14555	15590	14560	15591	14560	15591	14560
19. ADJUSTED RESERVES (18-2) (MW)	1647	3812	2433	3581	2271	3288	2112	2997
20. ADJUSTED RESERVES (%) (19/2)X100	12.6	35.5	18.5	32.6	17.0	29.2	15.7	25.9
21. ADJUSTED CAPACITY MARGINS (%) (19/1)X100.	9.6	20.8	13.5	19.6	12.6	18.0	11.7	16.4

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1990-1994
SOUTH CENTRAL ILLINOIS-EAST MISSOURI GROUP (REGION 17)

	1990		1991		1992		1993		1994	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	18079	18317	18079	18317	18079	18317	18079	18317	18041	18279
2. PEAK DEMAND (MW)	13654	11893	13836	12226	14020	12550	14210	12899	14414	13241
3. PLANNED RESERVES (1-2)	4425	6424	4243	6091	4059	5767	3869	5418	3627	5038
4. PLANNED RESERVES (%) (3/2)X100	32.4	54.0	30.7	49.8	29.0	46.0	27.2	42.0	25.2	38.0
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	-462	-481	-457	-476	-456	-476	135	115	136	115
6. TOTAL CAPABILITY (1+5) (MW)	17617	17836	17622	17841	17623	17841	18214	18432	18177	18394
7. TOTAL RESERVES (6-2) (MW)	3963	5943	3786	5615	3603	5291	4004	5533	3763	5153
8. TOTAL RESERVES (%) (7/2)X100	29.0	50.0	27.4	45.9	25.7	42.2	28.2	42.9	26.1	38.9
9. SCHEDULED MAINTENANCE (MW)	217	1447	217	1447	217	1447	217	1447	216	1444
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	17400	16389	17405	16394	17406	16394	17997	16985	17961	16950
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	3746	4496	3569	4168	3386	3844	3787	4086	3547	3709
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	27.4	37.8	25.8	34.1	24.2	30.6	26.7	31.7	24.6	28.0
13. FULL FORCED OUTAGES (MW)	929	941	929	941	929	941	929	941	927	940
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	16471	15448	16476	15453	16477	15453	17068	16044	17034	16010
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	2817	3555	2640	3227	2457	2903	2858	3145	2620	2769
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	20.6	29.9	19.1	26.4	17.5	23.1	20.1	24.4	18.2	20.9
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	846	857	846	857	846	857	846	857	844	855
18. ADJUSTED CAPABILITY (14-17) (MW)	15625	14591	15630	14596	15631	14596	16222	15187	16190	15155
19. ADJUSTED RESERVES (18-2) (MW)	1971	2698	1794	2370	1611	2046	2012	2288	1776	1914
20. ADJUSTED RESERVES (%) (19/2)X100	14.4	22.7	13.0	19.4	11.5	16.3	14.2	17.7	12.3	14.5
21. ADJUSTED CAPACITY MARGIN (%) (19/1)x100.	10.9	14.7	9.9	12.9	8.9	11.2	11.1	12.5	9.8	10.5

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

CURRENT CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1985
LOWER MICHIGAN SYSTEMS (REGION 18)

	1985 SUMMER	1985 WINTER
1. PLANNED CAPABILITY (MW)	17547	17908
2. PEAK DEMAND(MW)	13118	11488
3. PLANNED RESERVES (1-2) (MW)	4429	6420
4. PLANNED RESERVES (%) (3/2)X100	33.8	55.9
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	-985	-674
6. TOTAL CAPABILITY (1+5) (MW)	16562	17234
7. TOTAL RESERVES (6-2) (MW)	3444	5746
8. TOTAL RESERVES (%) (7/2)X100	26.3	50.0
9. SCHEDULED MAINTENANCE (MW)	1046	1601
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	15516	15633
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	2398	4145
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	18.3	36.1
13. FULL FORCED OUTAGES (MW)	798	815
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	14718	14818
15. RESERVES AFTER FULL FORCED OUTAGES (14-2)	1600	3330
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	12.2	29.0
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	983	1003
18. ADJUSTED CAPABILITY (14-17) (MW)	13735	13815
19. ADJUSTED RESERVES (18-2) (MW)	617	2327
20. ADJUSTED RESERVES (%) (19/2)X100	4.7	20.3
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	3.5	13.0

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1986-1989
LOWER MICHIGAN SYSTEMS (REGION 18)

	1986		1987		1988		1989	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	17557	17968	17607	17988	18076	17753	17422	18530
2. PEAK DEMAND (MW)	13485	11768	13790	12043	14173	12338	14442	12552
3. PLANNED RESERVES (1-2) (MW)	4072	6200	3817	5945	3903	5415	2980	5978
4. PLANNED RESERVES (%) (3/2)X100	30.2	52.7	27.7	49.4	27.5	43.9	20.6	47.6
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	-673	-685	-673	-685	-685	-377	-361	-373
6. TOTAL CAPABILITY (1+5) (MW)	16884	17283	16934	17303	17391	17376	17061	18157
7. TOTAL RESERVES (6-2) (MW)	3399	5515	3144	5260	3218	5038	2619	5605
8. TOTAL RESERVES (%) (7/2)X100	25.2	46.9	22.8	43.7	22.7	40.8	18.1	44.7
9. SCHEDULED MAINTENANCE (MW)	1046	1606	1049	1608	1077	1587	1038	1657
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	15838	15677	15885	15695	16314	15789	16023	16500
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	2353	3909	2095	3652	2141	3451	1581	3948
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	17.4	33.2	15.2	30.3	15.1	28.0	10.9	31.5
13. FULL FORCED OUTAGES (MW)	799	818	801	818	822	808	793	843
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	15039	14859	15084	14877	15492	14981	15230	15657
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	1554	3091	1294	2834	1319	2643	788	3105
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	11.5	26.3	9.4	23.5	9.3	21.4	5.5	24.7
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	983	1006	986	1007	1012	994	976	1038
18. ADJUSTED CAPABILITY (14-17) (MW)	14056	13853	14098	13870	14480	13987	14254	14619
19. ADJUSTED RESERVES (18-2) (MW)	571	2085	308	1827	307	1649	-188	2067
20. ADJUSTED RESERVES (%) (19/2)X100	4.2	17.7	2.2	15.2	2.2	13.4	-1.3	16.5
21. ADJUSTED CAPACITY MARGINS (%) (19/1)X100.	3.3	11.6	1.7	10.2	1.7	9.3	-1.1	11.2

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1990-1994
LOWER MICHIGAN SYSTEMS (REGION 18)

	1990		1991		1992		1993		1994	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	18162	18550	18182	18570	18202	18580	18212	18590	18222	18600
2. PEAK DEMAND (MW)	14695	12764	14924	12983	15176	13185	15406	13408	15653	13633
3. PLANNED RESERVES (1-2)	3467	5786	3258	5587	3026	5395	2806	5182	2569	4967
4. PLANNED RESERVES (%) (3/2)X100	23.6	45.3	21.8	43.0	19.9	40.9	18.2	38.6	16.4	36.4
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	-360	-177	-157	22	38	162	192	169	184	163
6. TOTAL CAPABILITY (1+5) (MW)	17802	18373	18025	18592	18240	18742	18404	18759	18406	18763
7. TOTAL RESERVES (6-2) (MW)	3107	5609	3101	5609	3064	5557	2998	5351	2753	5130
8. TOTAL RESERVES (%) (7/2)X100	21.1	43.9	20.8	43.2	20.2	42.1	19.5	39.9	17.6	37.6
9. SCHEDULED MAINTENANCE (MW)	1082	1658	1084	1660	1085	1661	1085	1662	1086	1663
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	16720	16715	16941	16932	17155	17081	17319	17097	17320	17100
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	2025	3951	2017	3949	1979	3896	1913	3689	1667	3467
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	13.8	31.0	13.5	30.4	13.0	29.5	12.4	27.5	10.6	25.4
13. FULL FORCED OUTAGES (MW)	826	844	827	845	828	845	829	846	829	846
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	15894	15871	16114	16087	16327	16236	16490	16251	16491	16254
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	1199	3107	1190	3104	1151	3051	1084	2843	838	2621
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	8.2	24.3	8.0	23.9	7.6	23.1	7.0	21.2	5.4	19.2
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	1017	1039	1018	1040	1019	1040	1020	1041	1020	1042
18. ADJUSTED CAPABILITY (14-17) (MW)	14877	14832	15096	15047	15308	15196	15470	15210	15471	15212
19. ADJUSTED RESERVES (18-2) (MW)	182	2068	172	2064	132	2011	64	1802	-182	1579
20. ADJUSTED RESERVES (%) (19/2)X100	1.2	16.2	1.2	15.9	0.9	15.3	0.4	13.4	-1.2	11.6
21. ADJUSTED CAPACITY MARGIN (%) (19/1)x100.	1.0	11.1	0.9	11.1	0.7	10.8	0.4	9.7	-1.0	8.5

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

CURRENT CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1985
WISCONSIN-UPPER MICHIGAN GROUP (REGION 19)

	1985 SUMMER	1985 WINTER
1. PLANNED CAPABILITY (MW)	9785	9975
2. PEAK DEMAND(MW)	7246	6743
3. PLANNED RESERVES (1-2) (MW)	2539	3232
4. PLANNED RESERVES (%) (3/2)X100	35.0	47.9
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	-18	-15
6. TOTAL CAPABILITY (1+5) (MW)	9767	9960
7. TOTAL RESERVES (6-2) (MW)	2521	3217
8. TOTAL RESERVES (%) (7/2)X100	34.8	47.7
9. SCHEDULED MAINTENANCE (MW)	789	848
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	8978	9112
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	1732	2369
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	23.9	35.1
13. FULL FORCED OUTAGES (MW)	317	323
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	8661	8789
15. RESERVES AFTER FULL FORCED OUTAGES (14-2)	1415	2046
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	19.5	30.3
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	488	498
18. ADJUSTED CAPABILITY (14-17) (MW)	8173	8291
19. ADJUSTED RESERVES (18-2) (MW)	927	1548
20. ADJUSTED RESERVES (%) (19/2)X100	12.8	23.0
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	9.5	15.5

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1986-1989
WISCONSIN-UPPER MICHIGAN GROUP (REGION 19)

	1986		1987		1988		1989	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	9888	10072	9899	10089	9922	10106	9932	10082
2. PEAK DEMAND (MW)	7318	6839	7500	7024	7631	7157	7751	7289
3. PLANNED RESERVES (1-2) (MW)	2570	3233	2399	3065	2291	2949	2181	2793
4. PLANNED RESERVES (%) (3/2)X100	35.1	47.3	32.0	43.6	30.0	41.2	28.1	38.3
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	206	210	-20	-16	-20	-16	-21	-17
6. TOTAL CAPABILITY (1+5) (MW)	10094	10282	9879	10073	9902	10090	9911	10065
7. TOTAL RESERVES (6-2) (MW)	2776	3443	2379	3049	2271	2933	2160	2776
8. TOTAL RESERVES (%) (7/2)X100	37.9	50.3	31.7	43.4	29.8	41.0	27.9	38.1
9. SCHEDULED MAINTENANCE (MW)	797	856	798	858	800	859	801	857
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	9297	9426	9081	9215	9102	9231	9110	9208
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	1979	2587	1581	2191	1471	2074	1359	1919
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	27.0	37.8	21.1	31.2	19.3	29.0	17.5	26.3
13. FULL FORCED OUTAGES (MW)	320	326	321	327	321	327	322	327
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	8977	9100	8760	8888	8781	8904	8788	8881
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	1659	2261	1260	1864	1150	1747	1037	1592
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	22.7	33.1	16.8	26.5	15.1	24.4	13.4	21.8
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	493	503	494	503	495	504	496	503
18. ADJUSTED CAPABILITY (14-17) (MW)	8484	8597	8266	8385	8286	8400	8292	8378
19. ADJUSTED RESERVES (18-2) (MW)	1166	1758	766	1361	655	1243	541	1089
20. ADJUSTED RESERVES (%) (19/2)X100	15.9	25.7	10.2	19.4	8.6	17.4	7.0	14.9
21. ADJUSTED CAPACITY MARGINS (%) (19/1)X100.	11.8	17.5	7.7	13.5	6.6	12.3	5.4	10.8

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1990-1994
WISCONSIN-UPPER MICHIGAN GROUP (REGION 19)

	1990		1991		1992		1993		1994	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	9915	10102	9931	9998	9814	9999	9829	10014	9849	10034
2. PEAK DEMAND (MW)	7871	7419	7973	7515	8065	7609	8142	7704	8234	7817
3. PLANNED RESERVES (1-2)	2044	2683	1958	2483	1749	2390	1687	2310	1615	2217
4. PLANNED RESERVES (%) (3/2)X100	26.0	36.2	24.6	33.0	21.7	31.4	20.7	30.0	19.6	28.4
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	-21	-17	-22	-17	-23	-18	-23	-19	-24	-19
6. TOTAL CAPABILITY (1+5) (MW)	9894	10085	9909	9981	9791	9981	9806	9995	9825	10015
7. TOTAL RESERVES (6-2) (MW)	2023	2666	1936	2466	1726	2372	1664	2291	1591	2198
8. TOTAL RESERVES (%) (7/2)X100	25.7	35.9	24.3	32.8	21.4	31.2	20.4	29.7	19.3	28.1
9. SCHEDULED MAINTENANCE (MW)	799	859	800	850	791	850	792	851	794	853
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	9095	9226	9109	9131	9000	9131	9014	9144	9031	9162
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	1224	1807	1136	1616	935	1522	872	1440	797	1345
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	15.6	24.4	14.2	21.5	11.6	20.0	10.7	18.7	9.7	17.2
13. FULL FORCED OUTAGES (MW)	321	327	322	324	318	324	318	324	319	325
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	8774	8899	8787	8807	8682	8807	8696	8820	8712	8837
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	903	1480	814	1292	617	1198	554	1116	478	1020
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	11.5	19.9	10.2	17.2	7.7	15.7	6.8	14.5	5.8	13.0
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	495	504	496	499	490	499	490	500	491	501
18. ADJUSTED CAPABILITY (14-17) (MW)	8279	8395	8291	8308	8192	8308	8206	8320	8221	8336
19. ADJUSTED RESERVES (18-2) (MW)	408	976	318	793	127	699	64	616	-13	519
20. ADJUSTED RESERVES (%) (19/2)X100	5.2	13.2	4.0	10.6	1.6	9.2	0.8	8.0	-0.2	6.6
21. ADJUSTED CAPACITY MARGIN (%) (19/1)x100.	4.1	9.7	3.2	7.9	1.3	7.0	0.7	6.2	-0.1	5.2

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

CURRENT CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1985
MID-CONTINENT AREA POWER POOL (REGION 20)
(U.S. ONLY)

	1985 SUMMER	1985 WINTER
1. PLANNED CAPABILITY (MW)	28628	29442
2. PEAK DEMAND(MW)	21813	19607
3. PLANNED RESERVES (1-2) (MW)	6815	9835
4. PLANNED RESERVES (%) (3/2)X100	31.2	50.2
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	503	-573
6. TOTAL CAPABILITY (1+5) (MW)	29131	28869
7. TOTAL RESERVES (6-2) (MW)	7318	9262
8. TOTAL RESERVES (%) (7/2)X100	33.5	47.2
9. SCHEDULED MAINTENANCE (MW)	1543	1993
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	27588	26876
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	5775	7269
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	26.5	37.1
13. FULL FORCED OUTAGES (MW)	1360	1398
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	26228	25478
15. RESERVES AFTER FULL FORCED OUTAGES (14-2)	4415	5871
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	20.2	29.9
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	925	951
18. ADJUSTED CAPABILITY (14-17) (MW)	25303	24527
19. ADJUSTED RESERVES (18-2) (MW)	3490	4920
20. ADJUSTED RESERVES (%) (19/2)X100	16.0	25.1
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	12.2	16.7

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1986-1989
MID-CONTINENT AREA POWER POOL (REGION 20)
(U.S.ONLY)

	1986		1987		1988		1989	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	29057	30099	29144	30636	29819	30668	29809	30719
2. PEAK DEMAND (MW)	22395	19960	22878	20458	23407	21078	23964	21617
3. PLANNED RESERVES (1-2) (MW)	6662	10139	6266	10178	6412	9590	5845	9102
4. PLANNED RESERVES (%) (3/2)X100	29.7	50.8	27.4	49.8	27.4	45.5	24.4	42.1
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	315	-678	304	-690	343	-646	336	-655
6. TOTAL CAPABILITY (1+5) (MW)	29372	29421	29448	29946	30162	30022	30145	30064
7. TOTAL RESERVES (6-2) (MW)	6977	9461	6570	9488	6755	8944	6181	8447
8. TOTAL RESERVES (%) (7/2)X100	31.2	47.4	28.7	46.4	28.9	42.4	25.8	39.1
9. SCHEDULED MAINTENANCE (MW)	1566	2038	1571	2074	1607	2076	1607	2080
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	27806	27383	27877	27872	28555	27946	28538	27984
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	5411	7423	4999	7414	5148	6868	4574	6367
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	24.2	37.2	21.9	36.2	22.0	32.6	19.1	29.5
13. FULL FORCED OUTAGES (MW)	1380	1430	1384	1455	1416	1457	1416	1459
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	26426	25953	26493	26417	27139	26489	27122	26525
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	4031	5993	3615	5959	3732	5411	3158	4908
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	18.0	30.0	15.8	29.1	15.9	25.7	13.2	22.7
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	939	972	941	990	963	991	963	992
18. ADJUSTED CAPABILITY (14-17) (MW)	25487	24981	25552	25427	26176	25498	26159	25533
19. ADJUSTED RESERVES (18-2) (MW)	3092	5021	2674	4969	2769	4420	2195	3916
20. ADJUSTED RESERVES (%) (19/2)X100	13.8	25.2	11.7	24.3	11.8	21.0	9.2	18.1
21. ADJUSTED CAPACITY MARGINS (%) (19/1)X100.	10.6	16.7	9.2	16.2	9.3	14.4	7.4	12.7

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1990-1994
MID-CONTINENT AREA POWER POOL (REGION 20)
(U.S.ONLY)

	1990		1991		1992		1993		1994	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	29870	30773	29735	30729	29779	30648	29654	30648	30065	31048
2. PEAK DEMAND (MW)	24530	22099	24948	22578	25460	23096	25983	23623	26538	24051
3. PLANNED RESERVES (1-2)	5340	8674	4787	8151	4319	7552	3671	7025	3527	6997
4. PLANNED RESERVES (%) (3/2)X100	21.8	39.3	19.2	36.1	17.0	32.7	14.1	29.7	13.3	29.1
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	335	-450	546	-442	546	-442	549	364	539	349
6. TOTAL CAPABILITY (1+5) (MW)	30205	30323	30281	30287	30325	30206	30203	31012	30604	31397
7. TOTAL RESERVES (6-2) (MW)	5675	8224	5333	7709	4865	7110	4220	7389	4066	7346
8. TOTAL RESERVES (%) (7/2)X100	23.1	37.2	21.4	34.1	19.1	30.8	16.2	31.3	15.3	30.5
9. SCHEDULED MAINTENANCE (MW)	1610	2083	1603	2080	1605	2075	1598	2075	1621	2102
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	28595	28240	28678	28207	28720	28131	28605	28937	28983	29295
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	4065	6141	3730	5629	3260	5035	2622	5314	2445	5244
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	16.6	27.8	15.0	24.9	12.8	21.8	10.1	22.5	9.2	21.8
13. FULL FORCED OUTAGES (MW)	1419	1462	1412	1460	1415	1456	1409	1456	1428	1475
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	27176	26778	27266	26747	27305	26675	27196	27481	27555	27820
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	2646	4679	2318	4169	1845	3579	1213	3858	1017	3769
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	10.8	21.2	9.3	18.5	7.2	15.5	4.7	16.3	3.8	15.7
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	965	994	960	993	962	990	958	990	971	1003
18. ADJUSTED CAPABILITY (14-17) (MW)	26211	25784	26306	25754	26343	25685	26238	26491	26584	26817
19. ADJUSTED RESERVES (18-2) (MW)	1681	3685	1358	3176	883	2589	255	2868	46	2766
20. ADJUSTED RESERVES (%) (19/2)X100	6.9	16.7	5.4	14.1	3.5	11.2	1.0	12.1	0.2	11.5
21. ADJUSTED CAPACITY MARGIN (%) (19/1)x100.	5.6	12.0	4.6	10.3	3.0	8.4	0.9	9.4	0.2	8.9

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

CURRENT CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1985
MISSOURI-KANSAS GROUP (REGION 21)

	1985 SUMMER	1985 WINTER
1. PLANNED CAPABILITY (MW)	15176	15400
2. PEAK DEMAND(MW)	11071	8227
3. PLANNED RESERVES (1-2) (MW)	4105	7173
4. PLANNED RESERVES (%) (3/2)X100	37.1	87.2
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	383	374
6. TOTAL CAPABILITY (1+5) (MW)	15559	15774
7. TOTAL RESERVES (6-2) (MW)	4488	7547
8. TOTAL RESERVES (%) (7/2)X100	40.5	91.7
9. SCHEDULED MAINTENANCE (MW)	369	1300
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	15190	14474
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	4119	6247
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	37.2	75.9
13. FULL FORCED OUTAGES (MW)	1094	1110
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	14096	13364
15. RESERVES AFTER FULL FORCED OUTAGES (14-2)	3025	5137
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	27.3	62.4
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	291	296
18. ADJUSTED CAPABILITY (14-17) (MW)	13805	13068
19. ADJUSTED RESERVES (18-2) (MW)	2734	4841
20. ADJUSTED RESERVES (%) (19/2)X100	24.7	58.8
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	18.0	31.4

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1986-1989
MISSOURI-KANSAS GROUP (REGION 21)

	1986		1987		1988		1989	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	15196	15420	15200	15404	15319	15523	15319	15523
2. PEAK DEMAND (MW)	11276	8440	11523	8704	11756	8939	11999	9168
3. PLANNED RESERVES (1-2) (MW)	3920	6980	3677	6700	3563	6584	3320	6355
4. PLANNED RESERVES (%) (3/2)X100	34.8	82.7	31.9	77.0	30.3	73.7	27.7	69.3
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	513	467	467	436	185	168	251	234
6. TOTAL CAPABILITY (1+5) (MW)	15709	15887	15667	15840	15504	15691	15570	15757
7. TOTAL RESERVES (6-2) (MW)	4433	7447	4144	7136	3748	6752	3571	6589
8. TOTAL RESERVES (%) (7/2)X100	39.3	88.2	36.0	82.0	31.9	75.5	29.8	71.9
9. SCHEDULED MAINTENANCE (MW)	369	1301	369	1300	372	1310	372	1310
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	15340	14586	15298	14540	15132	14381	15198	14447
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	4064	6146	3775	5836	3376	5442	3199	5279
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	36.0	72.8	32.8	67.0	28.7	60.9	26.7	57.6
13. FULL FORCED OUTAGES (MW)	1096	1112	1096	1111	1104	1119	1104	1119
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	14244	13474	14202	13429	14028	13262	14094	13328
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	2968	5034	2679	4725	2272	4323	2095	4160
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	26.3	59.6	23.2	54.3	19.3	48.4	17.5	45.4
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	292	296	292	296	294	298	294	298
18. ADJUSTED CAPABILITY (14-17) (MW)	13952	13178	13910	13133	13734	12964	13800	13030
19. ADJUSTED RESERVES (18-2) (MW)	2676	4738	2387	4429	1978	4025	1801	3862
20. ADJUSTED RESERVES (%) (19/2)X100	23.7	56.1	20.7	50.9	16.8	45.0	15.0	42.1
21. ADJUSTED CAPACITY MARGINS (%) (19/1)X100.	17.6	30.7	15.7	28.8	12.9	25.9	11.8	24.9

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1990-1994
MISSOURI-KANSAS GROUP (REGION 21)

	1990		1991		1992		1993		1994	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	15324	15528	16104	16308	16233	16437	16265	16469	16862	17066
2. PEAK DEMAND (MW)	12237	9461	12548	9714	12853	9958	13165	10194	13465	10425
3. PLANNED RESERVES (1-2)	3087	6067	3556	6594	3380	6479	3100	6275	3397	6641
4. PLANNED RESERVES (%) (3/2)X100	25.2	64.1	28.3	67.9	26.3	65.1	23.5	61.6	25.2	63.7
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	227	209	180	162	114	95	207	88	199	79
6. TOTAL CAPABILITY (1+5) (MW)	15551	15737	16284	16470	16347	16532	16472	16557	17061	17145
7. TOTAL RESERVES (6-2) (MW)	3314	6276	3736	6756	3494	6574	3307	6363	3596	6720
8. TOTAL RESERVES (%) (7/2)X100	27.1	66.3	29.8	69.5	27.2	66.0	25.1	62.4	26.7	64.5
9. SCHEDULED MAINTENANCE (MW)	372	1311	391	1376	394	1387	395	1390	410	1440
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	15179	14426	15893	15094	15953	15145	16077	15167	16651	15705
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	2942	4965	3345	5380	3100	5187	2912	4973	3186	5280
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	24.0	52.5	26.7	55.4	24.1	52.1	22.1	48.8	23.7	50.6
13. FULL FORCED OUTAGES (MW)	1105	1120	1161	1176	1170	1185	1173	1187	1216	1230
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	14074	13306	14732	13918	14783	13960	14904	13980	15435	14475
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	1837	3845	2184	4204	1930	4002	1739	3786	1970	4050
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	15.0	40.6	17.4	43.3	15.0	40.2	13.2	37.1	14.6	38.8
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	294	298	309	313	312	316	312	316	324	328
18. ADJUSTED CAPABILITY (14-17) (MW)	13780	13008	14423	13605	14471	13644	14592	13664	15111	14147
19. ADJUSTED RESERVES (18-2) (MW)	1543	3547	1875	3891	1618	3686	1427	3470	1646	3722
20. ADJUSTED RESERVES (%) (19/2)X100	12.6	37.5	14.9	40.1	12.6	37.0	10.8	34.0	12.2	35.7
21. ADJUSTED CAPACITY MARGIN (%) (19/1)x100.	10.1	22.8	11.6	23.9	10.0	22.4	8.8	21.1	9.8	21.8

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

CURRENT CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1985
OKLAHOMA GROUP (REGION 22)

	1985 SUMMER	1985 WINTER
1. PLANNED CAPABILITY (MW)	22023	22940
2. PEAK DEMAND(MW)	16514	12399
3. PLANNED RESERVES (1-2) (MW)	5509	10541
4. PLANNED RESERVES (%) (3/2)X100	33.4	85.0
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	-906	-1197
6. TOTAL CAPABILITY (1+5) (MW)	21117	21743
7. TOTAL RESERVES (6-2) (MW)	4603	9344
8. TOTAL RESERVES (%) (7/2)X100	27.9	75.4
9. SCHEDULED MAINTENANCE (MW)	363	2640
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	20754	19103
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	4240	6704
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	25.7	54.1
13. FULL FORCED OUTAGES (MW)	1117	1163
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	19637	17940
15. RESERVES AFTER FULL FORCED OUTAGES (14-2)	3123	5541
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	18.9	44.7
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	266	278
18. ADJUSTED CAPABILITY (14-17) (MW)	19371	17662
19. ADJUSTED RESERVES (18-2) (MW)	2857	5263
20. ADJUSTED RESERVES (%) (19/2)X100	17.3	42.4
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	13.0	22.9

NOTE: Planned capability and peak demands in Table ER22 include data for Ponca City, reported after publication of IE-411.

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1986-1989
OKLAHOMA GROUP (REGION 22)

	1986		1987		1988		1989	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	22980	23196	23119	23192	23115	23192	23215	23292
2. PEAK DEMAND (MW)	17092	12746	17572	13150	18119	13593	18674	14059
3. PLANNED RESERVES (1-2) (MW)	5888	10450	5547	10042	4996	9599	4541	9233
4. PLANNED RESERVES (%) (3/2)X100	34.4	82.0	31.6	76.4	27.6	70.6	24.3	65.7
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	-927	-1039	-833	-934	-723	-955	-690	-985
6. TOTAL CAPABILITY (1+5) (MW)	22053	22157	22286	22258	22392	22237	22525	22307
7. TOTAL RESERVES (6-2) (MW)	4961	9411	4714	9108	4273	8644	3851	8248
8. TOTAL RESERVES (%) (7/2)X100	29.0	73.8	26.8	69.3	23.6	63.6	20.6	58.7
9. SCHEDULED MAINTENANCE (MW)	379	2670	381	2669	381	2669	383	2681
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	21674	19487	21905	19589	22011	19568	22142	19626
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	4582	6741	4333	6439	3892	5975	3468	5567
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	26.8	52.9	24.7	49.0	21.5	44.0	18.6	39.6
13. FULL FORCED OUTAGES (MW)	1165	1176	1172	1176	1172	1176	1177	1181
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	20509	18311	20733	18413	20839	18392	20965	18445
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	3417	5565	3161	5263	2720	4799	2291	4386
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	20.0	43.7	18.0	40.0	15.0	35.3	12.3	31.2
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	278	281	280	281	280	281	281	282
18. ADJUSTED CAPABILITY (14-17) (MW)	20231	18030	20453	18132	20559	18111	20684	18163
19. ADJUSTED RESERVES (18-2) (MW)	3139	5284	2881	4982	2440	4518	2010	4104
20. ADJUSTED RESERVES (%) (19/2)X100	18.4	41.5	16.4	37.9	13.5	33.2	10.8	29.2
21. ADJUSTED CAPACITY MARGINS (%) (19/1)X100.	13.7	22.8	12.5	21.5	10.6	19.5	8.7	17.6

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1990-1994
OKLAHOMA GROUP (REGION 22)

	1990		1991		1992		1993		1994	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	23987	24062	24185	24337	24440	24683	25490	25762	25723	25810
2. PEAK DEMAND (MW)	19248	14538	19926	15125	20530	15626	21153	16144	21707	16680
3. PLANNED RESERVES (1-2)	4739	9524	4259	9212	3910	9057	4337	9618	4016	9130
4. PLANNED RESERVES (%) (3/2)X100	24.6	65.5	21.4	60.9	19.0	58.0	20.5	59.6	18.5	54.7
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	-924	-1180	-941	-1131	-922	-968	-1110	-1157	-1111	-1142
6. TOTAL CAPABILITY (1+5) (MW)	23063	22882	23244	23206	23518	23715	24380	24605	24612	24668
7. TOTAL RESERVES (6-2) (MW)	3815	8344	3318	8081	2988	8089	3227	8461	2905	7988
8. TOTAL RESERVES (%) (7/2)X100	19.8	57.4	16.7	53.4	14.6	51.8	15.3	52.4	13.4	47.9
9. SCHEDULED MAINTENANCE (MW)	396	2770	399	2801	403	2841	421	2965	424	2971
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	22667	20112	22845	20405	23115	20874	23959	21640	24188	21697
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	3419	5574	2919	5280	2585	5248	2806	5496	2481	5017
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	17.8	38.3	14.6	34.9	12.6	33.6	13.3	34.0	11.4	30.1
13. FULL FORCED OUTAGES (MW)	1216	1220	1226	1234	1239	1251	1292	1306	1304	1309
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	21451	18892	21619	19171	21876	19623	22667	20334	22884	20388
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	2203	4354	1693	4046	1346	3997	1514	4190	1177	3708
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	11.4	29.9	8.5	26.8	6.6	25.6	7.2	26.0	5.4	22.2
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	290	291	293	294	296	299	308	312	311	312
18. ADJUSTED CAPABILITY (14-17) (MW)	21161	18601	21326	18877	21580	19324	22359	20022	22573	20076
19. ADJUSTED RESERVES (18-2) (MW)	1913	4063	1400	3752	1050	3698	1206	3878	866	3396
20. ADJUSTED RESERVES (%) (19/2)X100	9.9	27.9	7.0	24.8	5.1	23.7	5.7	24.0	4.0	20.4
21. ADJUSTED CAPACITY MARGIN (%) (19/1)x100.	8.0	16.9	5.8	15.4	4.3	15.0	4.7	15.1	3.4	13.2

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

CURRENT CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1985
TEXAS INTERCONNECTED SYSTEMS GROUP (REGION 23)

	1985 SUMMER	1985 WINTER
1. PLANNED CAPABILITY (MW)	44368	45834
2. PEAK DEMAND(MW)	38464	29828
3. PLANNED RESERVES (1-2) (MW)	5904	16006
4. PLANNED RESERVES (%) (3/2)X100	15.3	53.7
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	654	654
6. TOTAL CAPABILITY (1+5) (MW)	45022	46488
7. TOTAL RESERVES (6-2) (MW)	6558	16660
8. TOTAL RESERVES (%) (7/2)X100	17.0	55.9
9. SCHEDULED MAINTENANCE (MW)	1331	6893
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	43691	39595
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	5227	9767
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	13.6	32.7
13. FULL FORCED OUTAGES (MW)	1464	1513
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	42227	38082
15. RESERVES AFTER FULL FORCED OUTAGES (14-2)	3763	8254
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	9.8	27.7
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	2525	2608
18. ADJUSTED CAPABILITY (14-17) (MW)	39702	35474
19. ADJUSTED RESERVES (18-2) (MW)	1238	5646
20. ADJUSTED RESERVES (%) (19/2)X100	3.2	18.9
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	2.8	12.3

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1986-1989
TEXAS INTERCONNECTED SYSTEMS GROUP (REGION 23)

	1986		1987		1988		1989	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	46784	47651	50496	50961	51759	52189	53276	54311
2. PEAK DEMAND (MW)	39663	30595	40809	32049	42372	33564	43917	35068
3. PLANNED RESERVES (1-2) (MW)	7121	17056	9687	18912	9387	18625	9359	19243
4. PLANNED RESERVES (%) (3/2)X100	18.0	55.7	23.7	59.0	22.2	55.5	21.3	54.9
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	656	756	683	683	696	696	724	674
6. TOTAL CAPABILITY (1+5) (MW)	47440	48407	51179	51644	52455	52885	54000	54985
7. TOTAL RESERVES (6-2) (MW)	7777	17812	10370	19595	10083	19321	10083	19917
8. TOTAL RESERVES (%) (7/2)X100	19.6	58.2	25.4	61.1	23.8	57.6	23.0	56.8
9. SCHEDULED MAINTENANCE (MW)	1404	7167	1515	7665	1553	7849	1598	8168
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	46036	41240	49664	43979	50902	45036	52402	46817
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	6373	10645	8855	11930	8530	11472	8485	11749
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	16.1	34.8	21.7	37.2	20.1	34.2	19.3	33.5
13. FULL FORCED OUTAGES (MW)	1544	1572	1666	1682	1708	1722	1758	1792
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	44492	39668	47998	42297	49194	43314	50644	45025
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	4829	9073	7189	10248	6822	9750	6727	9957
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	12.2	29.7	17.6	32.0	16.1	29.0	15.3	28.4
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	2662	2711	2873	2900	2945	2970	3031	3090
18. ADJUSTED CAPABILITY (14-17) (MW)	41830	36957	45125	39397	46249	40344	47613	41935
19. ADJUSTED RESERVES (18-2) (MW)	2167	6362	4316	7348	3877	6780	3696	6867
20. ADJUSTED RESERVES (%) (19/2)X100	5.5	20.8	10.6	22.9	9.1	20.2	8.4	19.6
21. ADJUSTED CAPACITY MARGINS (%) (19/1)X100.	4.6	13.4	8.5	14.4	7.5	13.0	6.9	12.6

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1990-1994
TEXAS INTERCONNECTED SYSTEMS GROUP (REGION 23)

	1990		1991		1992		1993		1994	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	54877	55640	56608	57696	58226	59568	60596	61662	62442	63924
2. PEAK DEMAND (MW)	45446	36745	46969	38441	48660	40052	50612	41859	52408	43581
3. PLANNED RESERVES (1-2)	9431	18895	9639	19255	9566	19516	9984	19803	10034	20343
4. PLANNED RESERVES (%) (3/2)X100	20.8	51.4	20.5	50.1	19.7	48.7	19.7	47.3	19.1	46.7
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	698	687	715	718	696	667	674	742	675	644
6. TOTAL CAPABILITY (1+5) (MW)	55575	56327	57323	58414	58922	60235	61270	62404	63117	64568
7. TOTAL RESERVES (6-2) (MW)	10129	19582	10354	19973	10262	20183	10658	20545	10709	20987
8. TOTAL RESERVES (%) (7/2)X100	22.3	53.3	22.0	52.0	21.1	50.4	21.1	49.1	20.4	48.2
9. SCHEDULED MAINTENANCE (MW)	1646	8368	1698	8677	1747	8959	1818	9274	1873	9614
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	53929	47959	55625	49737	57175	51276	59452	53130	61244	54954
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	8483	11214	8656	11296	8515	11224	8840	11271	8836	11373
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	18.7	30.5	18.4	29.4	17.5	28.0	17.5	26.9	16.9	26.1
13. FULL FORCED OUTAGES (MW)	1811	1836	1868	1904	1921	1966	2000	2035	2061	2109
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	52118	46123	53757	47833	55254	49310	57452	51095	59183	52845
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	6672	9378	6788	9392	6594	9258	6840	9236	6775	9264
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	14.7	25.5	14.5	24.4	13.6	23.1	13.5	22.1	12.9	21.3
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	3123	3166	3221	3283	3313	3389	3448	3509	3553	3637
18. ADJUSTED CAPABILITY (14-17) (MW)	48995	42957	50536	44550	51941	45921	54004	47586	55630	49208
19. ADJUSTED RESERVES (18-2) (MW)	3549	6212	3567	6109	3281	5869	3392	5727	3222	5627
20. ADJUSTED RESERVES (%) (19/2)X100	7.8	16.9	7.6	15.9	6.7	14.7	6.7	13.7	6.1	12.9
21. ADJUSTED CAPACITY MARGIN (%) (19/1)x100.	6.5	11.2	6.3	10.6	5.6	9.9	5.6	9.3	5.2	8.8

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

CURRENT CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1985
ROCKY MOUNTAIN POWER AREA (REGION 24)

	1985 SUMMER	1985 WINTER
1. PLANNED CAPABILITY (MW)	9674	9839
2. PEAK DEMAND(MW)	6190	6089
3. PLANNED RESERVES (1-2) (MW)	3484	3750
4. PLANNED RESERVES (%) (3/2)X100	56.3	61.6
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	-925	-894
6. TOTAL CAPABILITY (1+5) (MW)	8749	8945
7. TOTAL RESERVES (6-2) (MW)	2559	2856
8. TOTAL RESERVES (%) (7/2)X100	41.3	46.9
9. SCHEDULED MAINTENANCE (MW)	373	466
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	8376	8479
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	2186	2390
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	35.3	39.3
13. FULL FORCED OUTAGES (MW)	221	224
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	8155	8255
15. RESERVES AFTER FULL FORCED OUTAGES (14-2)	1965	2166
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	31.7	35.6
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	296	301
18. ADJUSTED CAPABILITY (14-17) (MW)	7859	7954
19. ADJUSTED RESERVES (18-2) (MW)	1669	1865
20. ADJUSTED RESERVES (%) (19/2)X100	27.0	30.6
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	17.3	19.0

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1986-1989
ROCKY MOUNTAIN POWER AREA (REGION 24)

	1986		1987		1988		1989	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	9753	9915	9846	10008	9900	10076	9925	10112
2. PEAK DEMAND (MW)	6446	6310	6751	6594	6991	6794	7216	6970
3. PLANNED RESERVES (1-2) (MW)	3307	3605	3095	3414	2909	3282	2709	3142
4. PLANNED RESERVES (%) (3/2)X100	51.3	57.1	45.8	51.8	41.6	48.3	37.5	45.1
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	-896	-885	-888	-869	-872	-867	-872	-865
6. TOTAL CAPABILITY (1+5) (MW)	8857	9030	8958	9139	9028	9209	9053	9247
7. TOTAL RESERVES (6-2) (MW)	2411	2720	2207	2545	2037	2415	1837	2277
8. TOTAL RESERVES (%) (7/2)X100	37.4	43.1	32.7	38.6	29.1	35.5	25.5	32.7
9. SCHEDULED MAINTENANCE (MW)	376	470	380	474	382	478	383	479
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	8481	8560	8578	8665	8646	8731	8670	8768
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	2035	2250	1827	2071	1655	1937	1454	1798
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	31.6	35.7	27.1	31.4	23.7	28.5	20.1	25.8
13. FULL FORCED OUTAGES (MW)	222	226	224	228	226	230	226	231
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	8259	8334	8354	8437	8420	8501	8444	8537
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	1813	2024	1603	1843	1429	1707	1228	1567
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	28.1	32.1	23.7	27.9	20.4	25.1	17.0	22.5
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	298	303	301	306	303	308	304	309
18. ADJUSTED CAPABILITY (14-17) (MW)	7961	8031	8053	8131	8117	8193	8140	8228
19. ADJUSTED RESERVES (18-2) (MW)	1515	1721	1302	1537	1126	1399	924	1258
20. ADJUSTED RESERVES (%) (19/2)X100	23.5	27.3	19.3	23.3	16.1	20.6	12.8	18.0
21. ADJUSTED CAPACITY MARGINS (%) (19/1)X100.	15.5	17.4	13.2	15.4	11.4	13.9	9.3	12.4

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1990-1994
ROCKY MOUNTAIN POWER AREA (REGION 24)

	1990		1991		1992		1993		1994	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	9958	10220	10545	10717	10905	11065	10903	11065	11210	11315
2. PEAK DEMAND (MW)	7447	7173	7596	7405	7842	7654	8086	7880	8335	7844
3. PLANNED RESERVES (1-2)	2511	3047	2949	3312	3063	3411	2817	3185	2875	3471
4. PLANNED RESERVES (%) (3/2)X100	33.7	42.5	38.8	44.7	39.1	44.6	34.8	40.4	34.5	44.3
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	-872	-864	-872	-863	-872	-862	-873	-862	-872	-858
6. TOTAL CAPABILITY (1+5) (MW)	9086	9356	9673	9854	10033	10203	10030	10203	10338	10457
7. TOTAL RESERVES (6-2) (MW)	1639	2183	2077	2449	2191	2549	1944	2323	2003	2613
8. TOTAL RESERVES (%) (7/2)X100	22.0	30.4	27.3	33.1	27.9	33.3	24.0	29.5	24.0	33.3
9. SCHEDULED MAINTENANCE (MW)	384	484	407	508	421	524	421	524	433	536
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	8702	8872	9266	9346	9612	9679	9609	9679	9905	9921
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	1255	1699	1670	1941	1770	2025	1523	1799	1570	2077
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	16.9	23.7	22.0	26.2	22.6	26.5	18.8	22.8	18.8	26.5
13. FULL FORCED OUTAGES (MW)	227	233	240	244	249	252	249	252	256	258
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	8475	8639	9026	9102	9363	9427	9360	9427	9649	9663
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	1028	1466	1430	1697	1521	1773	1274	1547	1314	1819
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	13.8	20.4	18.8	22.9	19.4	23.2	15.8	19.6	15.8	23.2
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	305	313	323	328	334	339	334	339	343	346
18. ADJUSTED CAPABILITY (14-17) (MW)	8170	8326	8703	8774	9029	9088	9026	9088	9306	9317
19. ADJUSTED RESERVES (18-2) (MW)	723	1153	1107	1369	1187	1434	940	1208	971	1473
20. ADJUSTED RESERVES (%) (19/2)X100	9.7	16.1	14.6	18.5	15.1	18.7	11.6	15.3	11.6	18.8
21. ADJUSTED CAPACITY MARGIN (%) (19/1)x100.	7.3	11.3	10.5	12.8	10.9	13.0	8.6	10.9	8.7	13.0

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

CURRENT CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1985
NORTHWEST POWER POOL AREA (REGION 25)
(U.S. ONLY)

	1985 SUMMER	1985 WINTER
1. PLANNED CAPABILITY (MW)	43447	44262
2. PEAK DEMAND(MW)	25039	32826
3. PLANNED RESERVES (1-2) (MW)	18408	11436
4. PLANNED RESERVES (%) (3/2)X100	73.5	34.8
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	-1982	-904
6. TOTAL CAPABILITY (1+5) (MW)	41465	43358
7. TOTAL RESERVES (6-2) (MW)	16426	10532
8. TOTAL RESERVES (%) (7/2)X100	65.6	32.1
9. SCHEDULED MAINTENANCE (MW)	5626	2333
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	35839	41025
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	10800	8199
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	43.1	25.0
13. FULL FORCED OUTAGES (MW)	1568	1598
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	34271	39427
15. RESERVES AFTER FULL FORCED OUTAGES (14-2)	9232	6601
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	36.9	20.1
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	639	651
18. ADJUSTED CAPABILITY (14-17) (MW)	33632	38776
19. ADJUSTED RESERVES (18-2) (MW)	8593	5950
20. ADJUSTED RESERVES (%) (19/2)X100	34.3	18.1
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	19.8	13.4

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1986-1989
NORTHWEST POWER POOL AREA (REGION 25)
(U.S. ONLY)

	1986		1987		1988		1989	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	44163	45209	44259	46766	45775	46766	45829	46820
2. PEAK DEMAND (MW)	25387	33601	26052	34240	26407	34842	26871	35494
3. PLANNED RESERVES (1-2) (MW)	18776	11608	18207	12526	19368	11924	18958	11326
4. PLANNED RESERVES (%) (3/2)X100	74.0	34.5	69.9	36.6	73.3	34.2	70.6	31.9
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	-2337	-737	-2114	-128	-961	13	-849	11
6. TOTAL CAPABILITY (1+5) (MW)	41826	44472	42145	46638	44814	46779	44980	46831
7. TOTAL RESERVES (6-2) (MW)	16439	10871	16093	12398	18407	11937	18109	11337
8. TOTAL RESERVES (%) (7/2)X100	64.8	32.4	61.8	36.2	69.7	34.3	67.4	31.9
9. SCHEDULED MAINTENANCE (MW)	5719	2383	5732	2465	5928	2465	5935	2467
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	36107	42089	36413	44173	38886	44314	39045	44364
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	10720	8488	10361	9933	12479	9472	12174	8870
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	42.2	25.3	39.8	29.0	47.3	27.2	45.3	25.0
13. FULL FORCED OUTAGES (MW)	1594	1632	1598	1688	1652	1688	1654	1690
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	34513	40457	34815	42485	37234	42626	37391	42674
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	9126	6856	8763	8245	10827	7784	10520	7180
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	35.9	20.4	33.6	24.1	41.0	22.3	39.2	20.2
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	649	665	651	687	673	687	674	688
18. ADJUSTED CAPABILITY (14-17) (MW)	33864	39792	34164	41798	36561	41939	36717	41986
19. ADJUSTED RESERVES (18-2) (MW)	8477	6191	8112	7558	10154	7097	9846	6492
20. ADJUSTED RESERVES (%) (19/2)X100	33.4	18.4	31.1	22.1	38.5	20.4	36.6	18.3
21. ADJUSTED CAPACITY MARGINS (%) (19/1)X100.	19.2	13.7	18.3	16.2	22.2	15.2	21.5	13.9

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1990-1994
NORTHWEST POWER POOL AREA (REGION 25)
(U.S. ONLY)

	1990		1991		1992		1993		1994	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	46399	46820	46413	46842	47661	48082	47661	49351	48930	49568
2. PEAK DEMAND (MW)	27340	36146	27836	36828	28273	37559	28817	38226	29245	37069
3. PLANNED RESERVES (1-2)	19059	10674	18577	10014	19388	10523	18844	11125	19685	12499
4. PLANNED RESERVES (%) (3/2)X100	69.7	29.5	66.7	27.2	68.6	28.0	65.4	29.1	67.3	33.7
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	-848	11	-756	-138	-224	-107	-221	-105	-219	-134
6. TOTAL CAPABILITY (1+5) (MW)	45551	46831	45657	46704	47437	47975	47440	49246	48711	49434
7. TOTAL RESERVES (6-2) (MW)	18211	10685	17821	9876	19164	10416	18623	11020	19466	12365
8. TOTAL RESERVES (%) (7/2)X100	66.6	29.6	64.0	26.8	67.8	27.7	64.6	28.8	66.6	33.4
9. SCHEDULED MAINTENANCE (MW)	6009	2467	6010	2469	6172	2534	6172	2601	6336	2612
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	39542	44364	39647	44235	41265	45441	41268	46645	42375	46822
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	12202	8218	11811	7407	12992	7882	12451	8419	13130	9753
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	44.6	22.7	42.4	20.1	46.0	21.0	43.2	22.0	44.9	26.3
13. FULL FORCED OUTAGES (MW)	1675	1690	1676	1691	1721	1736	1721	1782	1766	1789
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	37867	42674	37971	42544	39544	43705	39547	44863	40609	45033
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	10527	6528	10135	5716	11271	6146	10730	6637	11364	7964
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	38.5	18.1	36.4	15.5	39.9	16.4	37.2	17.4	38.9	21.5
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	682	688	682	689	701	707	701	725	719	729
18. ADJUSTED CAPABILITY (14-17) (MW)	37185	41986	37289	41855	38843	42998	38846	44138	39890	44304
19. ADJUSTED RESERVES (18-2) (MW)	9845	5840	9453	5027	10570	5439	10029	5912	10645	7235
20. ADJUSTED RESERVES (%) (19/2)X100	36.0	16.2	34.0	13.6	37.4	14.5	34.8	15.5	36.4	19.5
21. ADJUSTED CAPACITY MARGIN (%) (19/1)x100.	21.2	12.5	20.4	10.7	22.2	11.3	21.0	12.0	21.8	14.6

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

CURRENT CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1985
ARIZONA-NEW MEXICO AREA (REGION 26)

	1985 SUMMER	1985 WINTER
1. PLANNED CAPABILITY (MW)	14307	14602
2. PEAK DEMAND(MW)	10092	7510
3. PLANNED RESERVES (1-2) (MW)	4215	7092
4. PLANNED RESERVES (%) (3/2)X100	41.8	94.4
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	-1557	-1742
6. TOTAL CAPABILITY (1+5) (MW)	12750	12860
7. TOTAL RESERVES (6-2) (MW)	2658	5350
8. TOTAL RESERVES (%) (7/2)X100	26.3	71.2
9. SCHEDULED MAINTENANCE (MW)	102	1545
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	12648	11315
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	2556	3805
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	25.3	50.7
13. FULL FORCED OUTAGES (MW)	561	572
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	12087	10743
15. RESERVES AFTER FULL FORCED OUTAGES (14-2)	1995	3233
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	19.8	43.0
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	349	356
18. ADJUSTED CAPABILITY (14-17) (MW)	11738	10387
19. ADJUSTED RESERVES (18-2) (MW)	1646	2877
20. ADJUSTED RESERVES (%) (19/2)X100	16.3	38.3
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	11.5	19.7

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1986-1989
ARIZONA-NEW MEXICO AREA (REGION 26)

	1986		1987		1988		1989	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	16165	16673	19056	19396	19618	19587	20041	19848
2. PEAK DEMAND (MW)	10447	7918	11320	8642	11677	8946	12124	9274
3. PLANNED RESERVES (1-2) (MW)	5718	8755	7736	10754	7941	10641	7917	10574
4. PLANNED RESERVES (%) (3/2)X100	54.7	110.6	68.3	124.4	68.0	118.9	65.3	114.0
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	-2035	-2477	-3345	-3773	-3631	-3675	-3104	-3149
6. TOTAL CAPABILITY (1+5) (MW)	14130	14196	15711	15623	15987	15912	16937	16699
7. TOTAL RESERVES (6-2) (MW)	3683	6278	4391	6981	4310	6966	4813	7425
8. TOTAL RESERVES (%) (7/2)X100	35.3	79.3	38.8	80.8	36.9	77.9	39.7	80.1
9. SCHEDULED MAINTENANCE (MW)	115	1764	135	2052	139	2072	142	2100
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	14015	12432	15576	13571	15848	13840	16795	14599
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	3568	4514	4256	4929	4171	4894	4671	5325
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	34.2	57.0	37.6	57.0	35.7	54.7	38.5	57.4
13. FULL FORCED OUTAGES (MW)	634	654	747	760	769	768	786	778
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	13381	11778	14829	12811	15079	13072	16009	13821
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	2934	3860	3509	4169	3402	4126	3885	4547
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	28.1	48.7	31.0	48.2	29.1	46.1	32.0	49.0
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	394	407	465	473	479	478	489	484
18. ADJUSTED CAPABILITY (14-17) (MW)	12987	11371	14364	12338	14600	12594	15520	13337
19. ADJUSTED RESERVES (18-2) (MW)	2540	3453	3044	3696	2923	3648	3396	4063
20. ADJUSTED RESERVES (%) (19/2)X100	24.3	43.6	26.9	42.8	25.0	40.8	28.0	43.8
21. ADJUSTED CAPACITY MARGINS (%) (19/1)X100.	15.7	20.7	16.0	19.1	14.9	18.6	16.9	20.5

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1990-1994
ARIZONA-NEW MEXICO AREA (REGION 26)

	1990		1991		1992		1993		1994	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	20087	20056	20767	20736	20847	20924	20955	20924	21055	21026
2. PEAK DEMAND (MW)	12559	9591	13003	9933	13449	10265	13909	10592	14368	10703
3. PLANNED RESERVES (1-2)	7528	10465	7764	10803	7398	10659	7046	10332	6687	10323
4. PLANNED RESERVES (%) (3/2)X100	59.9	109.1	59.7	108.8	55.0	103.8	50.7	97.5	46.5	96.4
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	-2937	-2980	-2835	-2880	-2885	-2931	-2886	-2931	-2836	-2947
6. TOTAL CAPABILITY (1+5) (MW)	17150	17076	17932	17856	17962	17993	18069	17993	18219	18079
7. TOTAL RESERVES (6-2) (MW)	4591	7485	4929	7923	4513	7728	4160	7401	3851	7376
8. TOTAL RESERVES (%) (7/2)X100	36.6	78.0	37.9	79.8	33.6	75.3	29.9	69.9	26.8	68.9
9. SCHEDULED MAINTENANCE (MW)	143	2122	147	2194	148	2214	149	2214	149	2225
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	17007	14954	17785	15662	17814	15779	17920	15779	18070	15854
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	4448	5363	4782	5729	4365	5514	4011	5187	3702	5151
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	35.4	55.9	36.8	57.7	32.5	53.7	28.8	49.0	25.8	48.1
13. FULL FORCED OUTAGES (MW)	787	786	814	813	817	820	821	820	825	824
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	16220	14168	16971	14849	16997	14959	17099	14959	17245	15030
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	3661	4577	3968	4916	3548	4694	3190	4367	2877	4327
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	29.2	47.7	30.5	49.5	26.4	45.7	22.9	41.2	20.0	40.4
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	490	489	507	506	509	511	511	511	514	513
18. ADJUSTED CAPABILITY (14-17) (MW)	15730	13679	16464	14343	16488	14448	16588	14448	16731	14517
19. ADJUSTED RESERVES (18-2) (MW)	3171	4088	3461	4410	3039	4183	2679	3856	2363	3814
20. ADJUSTED RESERVES (%) (19/2)X100	25.2	42.6	26.6	44.4	22.6	40.8	19.3	36.4	16.4	35.6
21. ADJUSTED CAPACITY MARGIN (%) (19/1)x100.	15.8	20.4	16.7	21.3	14.6	20.0	12.8	18.4	11.2	18.1

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

CURRENT CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1985
CALIFORNIA-SO. NEVADA AREA (REGION 27)

	1985 SUMMER	1985 WINTER
1. PLANNED CAPABILITY (MW)	45657	47242
2. PEAK DEMAND(MW)	40253	30403
3. PLANNED RESERVES (1-2) (MW)	5404	16839
4. PLANNED RESERVES (%) (3/2)X100	13.4	55.4
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	5918	4447
6. TOTAL CAPABILITY (1+5) (MW)	51575	51689
7. TOTAL RESERVES (6-2) (MW)	11322	21286
8. TOTAL RESERVES (%) (7/2)X100	28.1	70.0
9. SCHEDULED MAINTENANCE (MW)	1580	6080
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	49995	45609
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	9742	15206
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	24.2	50.0
13. FULL FORCED OUTAGES (MW)	3068	3175
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	46927	42434
15. RESERVES AFTER FULL FORCED OUTAGES (14-2)	6674	12031
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	16.6	39.6
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	2602	2693
18. ADJUSTED CAPABILITY (14-17) (MW)	44325	39741
19. ADJUSTED RESERVES (18-2) (MW)	4072	9338
20. ADJUSTED RESERVES (%) (19/2)X100	10.1	30.7
21. ADJUSTED CAPACITY MARGINS (%) (19/1)x100	8.9	19.8

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1986-1989
CALIFORNIA-SO. NEVADA AREA (REGION 27)

	1986		1987		1988		1989	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	48547	48699	48362	48149	48609	48714	49387	49564
2. PEAK DEMAND (MW)	41036	31072	41711	31571	42878	32451	43620	32996
3. PLANNED RESERVES (1-2) (MW)	7511	17627	6651	16578	5731	16263	5767	16568
4. PLANNED RESERVES (%) (3/2)X100	18.3	56.7	15.9	52.5	13.4	50.1	13.2	50.2
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	6824	5165	7635	5939	7748	5979	7614	5836
6. TOTAL CAPABILITY (1+5) (MW)	55371	53864	55997	54088	56357	54693	57001	55400
7. TOTAL RESERVES (6-2) (MW)	14335	22792	14286	22517	13479	22242	13381	22404
8. TOTAL RESERVES (%) (7/2)X100	34.9	73.4	34.2	71.3	31.4	68.5	30.7	67.9
9. SCHEDULED MAINTENANCE (MW)	1680	6268	1673	6197	1682	6269	1709	6379
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	53691	47596	54324	47891	54675	48424	55292	49021
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	12655	16524	12613	16320	11797	15973	11672	16025
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	30.8	53.2	30.2	51.7	27.5	49.2	26.8	48.6
13. FULL FORCED OUTAGES (MW)	3262	3273	3250	3236	3267	3274	3319	3331
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	50429	44323	51074	44655	51408	45150	51973	45690
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	9393	13251	9363	13084	8530	12699	8353	12694
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	22.9	42.6	22.4	41.4	19.9	39.1	19.1	38.5
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	2767	2776	2757	2744	2771	2777	2815	2825
18. ADJUSTED CAPABILITY (14-17) (MW)	47662	41547	48317	41911	48637	42373	49158	42865
19. ADJUSTED RESERVES (18-2) (MW)	6626	10475	6606	10340	5759	9922	5538	9869
20. ADJUSTED RESERVES (%) (19/2)X100	16.1	33.7	15.8	32.8	13.4	30.6	12.7	29.9
21. ADJUSTED CAPACITY MARGINS (%) (19/1)X100.	13.6	21.5	13.7	21.5	11.8	20.4	11.2	19.9

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

FUTURE CAPABILITY (MW) AND RESERVES (MW AND PERCENT) - 1990-1994
CALIFORNIA-SO. NEVADA AREA (REGION 27)

	1990		1991		1992		1993		1994	
	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER	SUMMER	WINTER
1. PLANNED CAPABILITY (MW)	49963	49996	50795	50883	51264	51328	52038	51901	52702	52662
2. PEAK DEMAND (MW)	44611	33793	45418	34450	46464	35204	47363	35973	48464	36732
3. PLANNED RESERVES (1-2)	5352	16203	5377	16433	4800	16124	4675	15928	4238	15930
4. PLANNED RESERVES (%) (3/2)X100	12.0	47.9	11.8	47.7	10.3	45.8	9.9	44.3	8.7	43.4
5. NET TRANSACTIONS (IMPORTS-EXPORTS) (MW)	7589	5784	7644	5849	8016	6182	8141	6296	8305	6398
6. TOTAL CAPABILITY (1+5) (MW)	57552	55780	58439	56732	59280	57510	60179	58197	61007	59060
7. TOTAL RESERVES (6-2) (MW)	12941	21987	13021	22282	12816	22306	12816	22224	12543	22328
8. TOTAL RESERVES (%) (7/2)X100	29.0	65.1	28.7	64.7	27.6	63.4	27.1	61.8	25.9	60.8
9. SCHEDULED MAINTENANCE (MW)	1729	6434	1758	6549	1774	6606	1801	6680	1823	6778
10. CAPABILITY AFTER MAINTENANCE (6-9) (MW)	55823	49346	56681	50183	57506	50904	58378	51517	59184	52282
11. RESERVES AFTER MAINTENANCE (10-2) (MW)	11212	15553	11263	15733	11042	15700	11015	15544	10720	15550
12. RESERVES (%) AFTER MAINTENANCE (11/2)X100	25.1	46.0	24.8	45.7	23.8	44.6	23.3	43.2	22.1	42.3
13. FULL FORCED OUTAGES (MW)	3358	3360	3413	3419	3445	3449	3497	3488	3542	3539
14. CAPABILITY AFTER FULL FORCED OUTAGES (10-13) (MW)	52465	45986	53268	46764	54061	47455	54881	48029	55642	48743
15. RESERVES AFTER FULL FORCED OUTAGES (14-2) (MW)	7854	12193	7850	12314	7597	12251	7518	12056	7178	12011
16. RESERVES (%) AFTER FULL FORCED OUTAGES (15/2)X100	17.6	36.1	17.3	35.7	16.4	34.8	15.9	33.5	14.8	32.7
17. OTHER UNAVAILABLE CAPABILITY (MW) 1/	2848	2850	2895	2900	2922	2926	2966	2958	3004	3002
18. ADJUSTED CAPABILITY (14-17) (MW)	49617	43136	50373	43864	51139	44529	51915	45071	52638	45741
19. ADJUSTED RESERVES (18-2) (MW)	5006	9343	4955	9414	4675	9325	4552	9098	4174	9009
20. ADJUSTED RESERVES (%) (19/2)X100	11.2	27.6	10.9	27.3	10.1	26.5	9.6	25.3	8.6	24.5
21. ADJUSTED CAPACITY MARGIN (%) (19/1)x100.	10.0	18.7	9.8	18.5	9.1	18.2	8.7	17.5	7.9	17.1

1/ OTHER UNAVAILABLE CAPABILITY IS THAT CAPABILITY WHICH IS UNAVAILABLE FOR LOAD FOR REASONS OTHER THAN SCHEDULED MAINTENANCE OR FULL FORCED OUTAGES.

NORTH AMERICAN ELECTRIC RELIABILITY COUNCIL

ECAR
East Central Area Reliability Coordination Agreement

ERCOT
Electric Reliability Council of Texas

MAAC
Mid-Atlantic Area Council

MAIN
Mid-America Interpool Network

MAPP
Mid-Continent Area Power Pool

NPCC
Northeast Power Coordinating Council

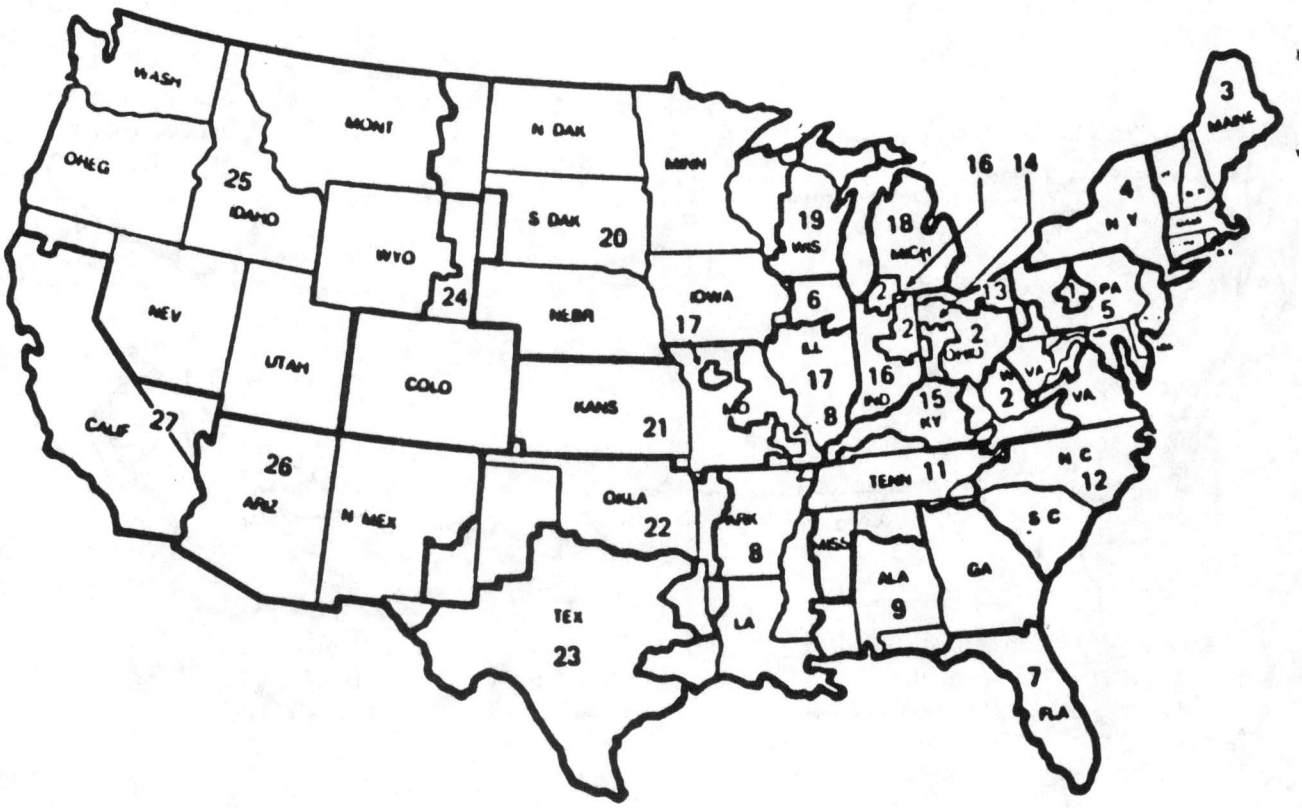
SERC
Southeastern Electric Reliability Council

SPP
Southwest Power Pool

WSCC
Western Systems Coordinating Council

1985

ELECTRIC REGIONS IN THE CONTIGUOUS UNITED STATES



RELIABILITY COUNCIL — ELECTRIC REGION

ECAR
1. APS (Allegheny Power System)
2. WOIM (West Virginia-Ohio-Indiana-Michigan Systems)
13. WPANCO (Western Pennsylvania-North Central Ohio Group)
14. CDH (Cincinnati-Dayton-Hamilton Group)
15. KY (Kentucky Group)
16. IND (Indiana Group)
18. LMS (Lower Michigan Systems)

ERCOT
23. No Subregions

MAAC
5. No Subregions

MAIN
6. CECO (Commonwealth Edison Company)
17. SCIM (South Central Illinois-East Missouri Group)
19. WIUM (Wisconsin-Upper Michigan Systems Group)

MAPP
20. No Subregions

RELIABILITY COUNCIL — ELECTRIC REGION

NPCC
3. NEPOOL (New England Power Pool)
4. NYPP (New York Power Pool)

SERC
7. FCG (Florida Electric Power Coordinating Group)
9. SOCO (Southern Company Group)
11. TVA (Tennessee Valley Authority)
12. VACAR (Virginia-Carolinas Group)

SPP
8. MSGS (Middle South-Gulf States Group)
21. MOKN (Missouri-Kansas Group)
22. OKLA (Oklahoma Group)

WSCC
24. RMPA (Rocky Mountain Power Area)
25. NWPP (Northwest Power Pool Area)
26. AZNM (Arizona-New Mexico Power Area)
27. CASN (California-Southern Nevada Power Area)

System Generating Capacity Unavailability

At any specified time, some of a system's installed generating capacity may not be available for service. Generating units may be out of service for maintenance, because of forced outage, or for refueling (if nuclear). Some units may not be operable at full rated output because of poor fuel quality, because heat transfer surfaces have not recently been cleaned, because of boiler tube leaks, failure of some components, or other reasons. Reports filed by utilities with the Federal Power Commission (and later with the Department of Energy) 1/ provide data that allow a quantitative estimate of capacity unavailable each month at the time of monthly peak demand. Table A-1, derived from capacity unavailability data for 1979-84, gives percentages that can be used to obtain estimates of capacity unavailable at peak load periods. In this report, the percentages were applied to the planned capability to obtain an estimate of the capacity unavailable, during each peak period, because of scheduled maintenance, forced outages, and other reasons. The estimated magnitude of the unavailable capacity, so computed, is shown in Tables C1 through C9 and ER1 through ER27. It is recognized that the procedure is not rigorous and yields only an approximate result. The actual capacity unavailable at the time of seasonal peak demand in any of the three categories is likely to be different from the amount shown in Tables C1 through C9 and ER1 through ER27. However, it is believed that the magnitudes shown are reasonable and useful for the purpose of approximation.

The adjusted reserve obtained by the procedure is useful for indicating regions that might experience supply problems. If the adjusted reserve for a region appears to be low, as a result of allowances made for estimated outages, further analysis is usually performed. Such analysis would review, among other things, the possible support that could be obtained from other regions, and the transmission capability between systems.

1/ FPC 12E-2, replaced by ERA-119M, replaced by EIA-119M. The Energy Information Administration discontinued the collection of this information at the end of 1982. Item 3C, in the EP-411 reports for 1984, contains outage data for 1983 as reported by the Councils. Data for 1984 is reported in Item 3C of the 1985 IE-411 reports.

Table A1
Average Capacity Unavailable At Time of Peak Load
As Percent of Installed Capacity (Planned Capability)

Council	Region	Scheduled Maintenance Summer 1/	Scheduled Maintenance Winter 2/	Forced Outage 3/	Other Outage 3/
ECAR		8.28	7.81	5.57	5.49
APS	1	9.77	6.76	8.67	6.48
WOIM	2	11.13	5.28	5.84	3.62
WPANCO	13	10.62	11.22	7.52	7.46
CDH	14	2.88	6.60	4.97	5.86
KY	15	4.98	6.83	3.34	4.12
IND	16	7.08	8.76	4.49	6.54
LMS	18	5.96	8.94	4.45	5.60
MAAC	5	6.53	10.37	12.16	1.93
MAIN		3.62	8.71	7.60	7.52
CECO	6	3.59	10.06	11.58	11.84
SCIM	17	1.20	7.90	5.14	4.68
WIUM	19	8.06	8.50	3.24	4.99
MAPP	20	5.39	6.77	4.75	3.23
NPCC		8.03	8.45	6.83	4.85
NEPOOL	3	7.80	7.27	8.64	3.75
NYPP	4	8.14	10.13	8.64	4.43
SERC		6.27	7.87	6.61	3.73
FCG	7	4.90	8.76	5.09	3.17
SOCO	9	1.79	8.94	4.88	2.51
TVA	11	7.36	6.58	10.95	2.17
VACAR	12	10.05	7.63	5.79	6.31
SPP		1.57	10.24	7.69	1.78
MSGS	8	1.25	11.85	9.58	2.02
MOKN	21	2.43	8.44	7.21	1.92
OKLA	22	1.65	11.51	5.07	1.21
ERCOT	23	3.00	15.04	3.30	5.69
WSCC		7.40	9.57	4.98	3.15
RMPA	24	3.86	4.74	2.28	3.06
NWPP	25	12.95	5.27	3.61	1.47
AZNM	26	0.71	10.58	3.92	2.44
CASN	27	3.46	12.87	6.72	5.70

1/ Average of June, July, August in each year 1979-1984.
2/ Average of December, January, February in each year 1979-1984.
3/ 72-Month average for January 1979 through December 1984.

Identification of Reporting Utilities
By Council and Electric Region
From IE-411 Reports April 1, 1985

Electric Region	Acronym	Reporting Utility	Reporting Code
		EAST CENTRAL AREA RELIABILITY COORDINATION AGREEMENT (ECAR)	
1	APS	Allegheny Power System	APS
2	WOIM	West Virginia-Ohio-Indiana-Michigan	-
		American Electric Power System	AEP
		Buckeye Power, Incorporated	BUCK
		Ohio Valley Electric Corporation	OVEC
		Richmond Power and Light (Muni)	RP&L
13	WPANCO	W. Pennsylvania - No. Central Ohio	-
		Bryan Municipal Light and Water	BMLW
		Central Area Power Coordination Group	CAPCO
		Cleveland Electric Illuminating Co.	CEI
		Duquesne Light Company	DLCO
		Ohio Edison System	OE
		Toledo Edison Company	TECO
		Cleveland Public Power (Muni)	CLEV
14	CDH	Cincinnati-Dayton-Hamilton	-
		Cincinnati Gas & Electric Company	CG&E
		Dayton Power and Light Company	DP&L
		Hamilton Department of Public Utilities - Electric Division	HAMI
15	KY	Kentucky	-
		Big Rivers Electric Corporation	BREC
		East Kentucky Power Cooperative, Inc.	EKPC
		Henderson Municipal Power & Light	HMPL
		Kentucky Utilities Company	KU
		Louisville Gas and Electric Company	LG&E
		Owensboro Municipal Utilities	OMU
16	IND	Indiana	-
		Hoosier Energy Rural Electric Cooperative, Inc.	HE
		Indianapolis Power & Light Company	IP&L
		Northern Indiana Public Service Co.	NIPS
		Public Service Company of Indiana, Inc.	PSI
		Southern Indiana Gas and Electric Company	SIGE
		Wabash Valley Power Association	WVPA

Electric Region	Acronym	Reporting Utility	Reporting Code
18	LMS	Lower Michigan Systems	
		City of Detroit - Public Lighting Department	DPLD
		Edison Sault Electric Company	ESEC
		Lansing Board of Water and Light	LBWL
		Michigan Electric Coordinated Systems	MECS
		Consumers Power Company	CP
		Detroit Edison Company	DECO
		Michigan Municipal Cooperative Pool	MMCP
		Grand Haven Board of Light & Power	GHLP
		Lowell Light & Power	LL&P
		Traverse City Light & Power Dept.	TCLP
		Wolverine Power Supply Coop., Inc.	WPSC
		Zeeland Board of Public Works	ZBPW
		Michigan Public Power Agency	MPPA
		MID-ATLANTIC AREA COUNCIL (MAAC)	
5	PJM	Pennsylvania-New Jersey-Maryland	PJM
		Atlantic City Electric Company	AECO
		Baltimore Gas and Electric Company	BCCO
		Delmarva Power & Light Company	DPLC
		General Public Utilities Corp.	GPUS
		Jersey Central Power & Light Co.	-
		Metropolitan Edison Company	
		Pennsylvania Electric Company	-
		Philadelphia Electric Company	PECO
		Pennsylvania Power & Light Co.	PLCO
		Potomac Electric Power Company	PPCO
		Public Service Electric & Gas Co.	PSCO
		UGI Corporation	UGIC
		Allegheny Electric Cooperative	ALEC
		Associates:	
		Allegheny Electric Cooperative representing the Pennsylvania and New Jersey Cooperatives	
		The Easton Utilities Commission representing the Maryland Municipals	
		The City of Vineland Electric Utility representing the New Jersey Municipals	
		The City of Dover representing the Delaware Municipals	
		Southern Maryland Electric Cooperative representing the Maryland Cooperatives	

Electric Region	Acronym	Reporting Utility	Reporting Code
		MID-AMERICA INTERPOOL NETWORK (MAIN)	
6	CECO	Commonwealth Edison Company	CECO
17	SCIM	So. Central Illinios-E. Missouri	-
		South Central Illinois Subregion	SCIL
		Central Illinois Light Company	CIL
		Central Illinois Public Service Co.	CIPS
		City Water, Light & Power, Springfield, IL	CWLP
		Illinois Power Company	IP
		Southern Illinois Power Cooperative, Inc.	SIPC
		Western Illinois Power Cooperative, Inc.	WIPC
		Soyland Power Cooperative, Inc.	SYPC
		East Missouri Subregion	EMO
		Columbia, Missouri, Water & Light Department	CWL
		Union Electric Company	UE
19	WIUM	Wisconsin-Upper Michigan	WIUM
		Kaukauna, Wisconsin, Electric & Water Dept.	KAUK
		Madison Gas & Electric Company	MGE
		Manitowoc, Wisconsin, Public Utilities	MPU
		Marquette, Michigan, Board of Light & Power	MARQ
		Marshfield, Wisconsin, Electric & Water Dept.	MARF
		Menasha, Wisconsin, Electric & Water Utilities	MEWU
		Upper Peninsula Power Company	UPP
		Wisconsin Electric Power Company	WEP
		Wisconsin Power & Light Company	WPL
		Wisconsin Public Service Corporation	WPS
		MID-CONTINENT AREA POWER POOL (MAPP)	
20	MAPP	Mid-Continent Area Power Pool	MAPP
		Basin Electric Power Cooperative	BEPC
		Cooperative Power Association	CPA
		Dairyland Power Cooperative	DPC
		Heartland Consumers Power District	HCPD
		Interstate Power Company	IPW

Electric Region	Acronym	Reporting Utility	Reporting Code
20 (Cont.)		Iowa Electric Light and Power Co.	IELP
		Central Iowa Power Cooperative	CIPC
		Iowa-Illinois Gas and Electric Co.	IIGE
		Iowa Power and Light Company	IPL
		Iowa Public Service Company	IPS
		Corn Belt Power Cooperative	CBPC
		Iowa Southern Utilities Company	ISU
		Lincoln Electric System	LES
		Minnesota Power & Light Company	MP
		Minnkota Power Cooperative, Inc.	MPC
		Missouri Basin Municipal Power Agency	MBMP
		Montana-Dakotas Utilities Co.	MDU
		Muscatine Power and Water (Muni)	MPW
		Nebraska Public Power District	NPPD
		Northern States Power Company	NSP
		Northwest Iowa Power Cooperative	NIPC
		Northwestern Public Service Company	NWPS
		Omaha Public Power District	OPPD
		Otter Tail Power Company	OTP
		Southern Minnesota Municipal Power Agency	SMMP
		United Power Association	UPA
		Western Area Power Administration - Billings Area	WAPA
		NORTHEAST POWER COORDINATING COUNCIL (NPCC)	
3	NEPOOL	New England Power Pool	NEPOOL
		Bangor Hydro-Electric Company	BAHE (1)
		Boston Edison Company	BOEC
		Braintree Electric Light Department	BRAI
		Central Maine Power Company	CEMP
		Chicopee Light Department	CHIC (1)
		Commonwealth Electric System	COMW (2)
		Connecticut Municipals	CONN
		Eastern Utilities Associates System	EUAS
		Fitchburg Gas & Electric Company	FIGE (1)
		Holden Municipal Light Dept.	HOLD
		Holyoke Gas & Electric Department	HOGE (1)
		Hudson Light & Power Department	HLPD (1)
		Ipswich Municipal Light Department	IPSW (1)
		Maine Electric Power Company	MAPO
		Maine Municipals	MAMU
		Maine Public Service Company	MAPS (1)
		Marblehead Municipal Light Dept.	MMLD (1)

Electric Region	Acronym	Reporting Utility	Reporting Code
3 (Cont.)		Mass. Municipal Wholesale Electric Co.	MMWE
		New England Electric System	NEES
		New England Electric Transmission Corp.	NEET
		New Hampshire Municipals	NEWH (1)
		Newport Electric Corporation	NEWP (1)
		Northeast Utilities	NOEU
		Peabody Municipal Light Department	PEAB (1)
		Princeton Municipal Light Dept.	PMLD
		Public Service Company of New Hampshire	PSNH
		Shrewsbury Electric Light Department	SELD (1)
		Taunton Municipal Light Department	TAUN (1)
		United Illuminating Company	UNIC
		Vermont Group	VTGP
4	NYPP	New York Power Pool	NYPP
		Central Hudson Gas & Electric Corp.	CEHG
		Consolidated Edison Company of New York, Inc.	COEN
		Village of Freeport	FREP (1)
		Jamestown Municipal Electric System	JAME (1)
		Long Island Lighting Company	LOIL
		New York Power Authority	NYPA (3)
		New York State Electric & Gas Corp.	NEYE
		Niagara Mohawk Power Corporation	NIMP
		Orange and Rockland Utilities, Inc.	ORRU
		Rochester Gas and Electric Corp.	ROGE

(1) Non-member of Northeast Power Coordinating Council

(2) Commonwealth Electric System was formerly New England Gas and Electric Association (NEGEA)

(3) New York Power Authority was formerly Power Authority of the State of New York (POAS)

Electric Region	Acronym	Reporting Utility	Reporting Code
		SOUTHEASTERN ELECTRIC RELIABILITY COUNCIL (SERC)	
7	FCG	FEPC Subregion	-
		Florida Power Corporation	FLPC
		Florida Power & Light Company	FLPL
		Florida Municipal Power Agency	FMPA
		Fort Pierce Utilities Authority	FOPC
		Gainesville Regional Utilities	GAMW
		City of Homestead	HSTM
		Jacksonville Electric Authority	JACO
		City of Kissimmee	KISM
		Lake Worth Utilities Authority	LWUA
		City of Lakeland	LALW
		New Smyrna Beach Utilities Commission	NSBM
		Orlando Utilities Commission	ORLA
		City of St. Cloud	STCM
		Sebring Utilities Commission	SEBM
		Seminole Electric Cooperative, Inc.	SECI
		Southeastern Power Administration	SEPA
		City of Tallahassee	TALL
		Tampa Electric Company	TAEC
		City of Vero Beach	VEBM
9	SOCO	Southern Subregion	-
		Alabama Electric Cooperative, Inc.	ALEC
		Crisp County Power Commission	CCPC
		Dalton Utilities	DALTON
		Municipal Electric Association of Georgia	MEAG
		Oglethorpe Power Corp.	OPC
		Savannah Electric and Power Company	SAEP
		Southeastern Power Administration	SEPA
		Southern Company System	-
		Alabama Power Company	ALAP
		Georgia Power Company	GEPC
		Gulf Power Company	GUPC
		Mississippi Power Company	MIPR
		South Mississippi Electric Power Association	SOMI
11	TVA	Tennessee Valley Authority	TVA
		Nantahala Power & Light Co.	
		Tapoco, Incorporated	
12	VACAR	Virginia-Carolinas Group	
		Carolina Power & Light Company	CAPO
		Duke Power Company	DUPC
		Southeastern Power Administration	SEPA
		So. Carolina Public Service Authority	SOCA
		So. Carolina Electric & Gas Company	SOCG
		Virginia Electric and Power Company	VIEP
		Yadkin, Inc.	YADI

Electric Region	Acronym	Reporting Utility	Reporting Code
		SOUTHWEST POWER POOL (SPP)	
8	MSGS	Middle South - Gulf States (Southeast)	-
		Arkansas Electric Cooperative Corp.	AREC
		Cajun Electric Power Cooperative, Inc.	CAJN
		Central Louisiana Electric Co., Inc.	CELE
		Gulf States Utilities Company	GUSU
		Middle South Utilities, Inc.	MSUI
		Arkansas Power & Light Company	ARPL
		Louisiana Power & Light Company	LOLP
		Mississippi Power & Light Company	MIPO
		New Orleans Public Service, Inc.	NEOP
		City of Lafayette	LAFA
		Jonesboro, Arkansas (non-member)	JONES
		Ponca City, OK (non-member)	PONC
21	MOKN	Missouri-Kansas-Nebraska (Northern)	-
		Board of Public Utilties, Kansas City, KA	KACY
		Associated Electric Cooperative, Inc.	ASEC
		Empire District Electric Company	EMDE
		City Power & Light, Independence, MO	INDN
		Kansas City Power & Light Company	KACP
		Kansas Gas & Electric Company	KAGE
		Kansas Power & Light Company	KAPL
		Missouri Public Service Company	MIPU
		City Utilities, Springfield, MO	SPRM
		St. Joseph Light & Power Company	STJO
		Sunflower Electric Cooperative, Inc.	SUNC
		Western Power Div. - Centel Corporation	CTKS
		Midwest Energy, Inc.	MIDW
22	OKLA	Oklahoma (West Central)	-
		Grand River Dam Authority	GRRD
		Oklahoma Gas & Electric Company	OKGE
		Public Service Company of Oklahoma 1/	PSOK
		Southwestern Electric Power Company 1/	SOEP
		Southwestern Power Administration	SWPA
		Southwestern Public Service Company	SWPS
		Western Farmers Electric Cooperative	WEFA
		ELECTRIC RELIABILITY COUNCIL OF TEXAS (ERCOT)	
23	ERCOT	Electric Reliability Council of Texas	ERCOT
		City of Austin Electric Utilities	AUST
		Brownsville Public Utilities Board	BROV
		Central Power & Light Company 1/	CP&L
		City Public Service of San Antonio	CPSA

1/ Subsidiary of Central & South West Corp.

Electric Region	Acronym	Reporting Utility	Reporting Code
23 (Cont.)		Houston Lighting & Power Company	HL&P
		Lower Colorado River Authority	LCRA
		South Texas & Medina Electric Cooperative Pool	ST&M
		Texas Municipal Power Pool	TMPP
		City of Bryan	BRYN
		Brazos Electric Power Cooperative, Inc.	BEPC
		City of Denton	DENT
		City of Garland	GARL
		City of Greenville	GRNV
		Texas Municipal Power Agency	TMPA
		Texas Utilities Electric Company	TUEC
		Dallas Power & Light Company	DP&L
		Texas Electric Service Company	TESC
		Texas Power & Light Company	TP&L
		West Texas Utilities Company 1/	WETU
		WESTERN SYSTEMS COORDINATING COUNCIL (WSCC)	
24	RMPA	Rocky Mountain Power Area 2/	RMPA
		Basin Electric Power Cooperative (Wyoming & South Dakota Rushmore G&T)	BEPC/WALM
		Black Hills Power & Light Company	BHPL
		Colorado Springs, City of	CCS/WAUC
		Colorado-Ute Electric Association, Inc.	CUEA/WAUC
		Platte River Power Authority	PRPA/WALM/WAUC
		Public Service Company of Colorado	PSC
		So. Colorado Power - Centel Corp.	SCPC
		Tri-State Generation & Transmission Assoc., Inc.	TSGT/WALM/WAUC/BEPC
		USBR - Lower Missouri Region	USLM
		USBR - Upper Colorado Region	USUC
		Western Area Power Administration - Fort Collins	WALM
		Western Area Power Administration - Salt Lake Area	WAUC
25	NWPP	Northwest Power Pool Area 3/	NWPP
		Bonneville Power Administration	BPA
		Chelan County PUD	CHPD
		Cowlitz County PUD	COPD/BPA
		Deseret Generation & Transmission Cooperative	DGT

1/ Subsidiary of Central & South West Corp.
2/ 89 additional systems, not members of WSCC, are listed as having contributed data to the IE-411 Report.
3/ U.S. members only. There are 2 Canadian members. See note on following page.

Electric Region	Acronym	Reporting Utility	Reporting Code
25 (Cont.)		Douglas County PUD	DOPD
		Eugene Water & Electric Board	EWEB
		Grant County PUD	GCPD
		Idaho Power Company	IPC
		Montana Power Company	MPC
		Pacific Power & Light Company	PPL
		Portland General Electric Company	PGE
		Puget Sound Power & Light Company	PSPL
		Seattle City Light	SCL
		Sierra Pacific Power Company	SPP
		Tacoma City Light	TCL
		USBR Pacific Northwest Region	USPN/BPA
		USBR Upper Colorado Region	USUC/WAUC
		USBR Upper Missouri Region	USUM/WAUM
		U.S. Corps of Engineers (North Pacific Division)	USCE
		Utah Power & Light Company	UPLC
		WAUC Loads wheeled by Utah Power & Light Company	WAUC
		Washington Water Power Company	WWPC
		Western Area Power Administration - Billings	WAUM

Note: In addition to the 24 U.S. and 2 Canadian members, NWPP lists 191 entities that have provided data. Some of these are Canadian, but this report includes only the U.S. portion of WSCC.

26	AZNM	Arizona-New Mexico Power Area 1/	AZNM
		Arizona Electric Power Cooperative, Inc.	AEPC
		Arizona Power Authority	APA/APS
		Arizona Public Service Company	APS
		El Paso Electric Comapny	EPE
		Farmington, City of	FARM/WAUC
		Imperial Irrigation District	IID
		Plains Electric G & T Cooperative, Inc.	PEGT
		Public Service Company of New Mexico	PNM
		Salt River Project	SRP
		Southern California Edison Company (Blythe Dist.)	SCE
		Tucson Electric Power Company	TEP
		USBR - Lower Colorado Region	USLC
		USBR Rio Grande Project (Southwest Region)	USSW
		Western Area Power Administration - Boulder City	WALC

1/ AZNM lists 54 additional systems that have contributed data.

Electric Region	Acronym	Reporting Utility	Reporting Code
27	CASN	California-Southern Nevada Power Area 1/	CASN
		City of Anaheim	ANHM
		Burbank Public Service Department	BURB
		Department of Water Resources/ California	CDWR
		Glendale Public Service Department	GLEN
		Los Angeles Department of Water & Power	LDWP
		Metropolitan Water District/So. Cal.	MWD
		Modesto Irrigation District	MID
		Nevada Power Company	NEVP
		Northern California Power Agency	NCPA
		Pacific Gas & Electric Company	PG&E
		City of Pasadena	PASA
		City of Riverside	RVSD
		Sacramento Muncipal Utility District	SMUD
		San Diego Gas & Electric Company	SDGE
		City of Santa Clara	SNCL
		Southern California Edison Company	SCE
		USBR - Boulder City	USLC/USBC
		USBR - Mid-Pacific Region	USMP
		Western Area Power Administration - Sacramento	WAMP

1/ In addition to the member systems listed, CASN lists 45 other entities whose data are included.

* U.S. GOVERNMENT PRINTING OFFICE: 1985-461-208:20058