Prince George's and Montgomery, and a small section of Arlington County, Virginia. In addition, PEPCO supplies all of the bulk power requirements of SMECO.

The three principal regions which directly or indirectly comprise PEPCO's service area have widely divergent characteristics. The District is a highly urbanized environment of government and commercial office buildings and large apartment complexes. The suburban Maryland region is a more affluent, largely residential area, with a large retail trade sector. The Southern Maryland region, which is served only indirectly by PEPCO, is largely rural and small town, though with some suburban development.

The distinguishing aspect of the PEPCO area economy is the virtual absence of any significant manufacturing activity. In fact, PEPCO is the only large utility in the nation without a large industrial load. That fact, along with the predominance of air conditioning in the Washington area, accounts for the relatively low system load factor which PEPCO has experienced over the years. The main "industry" in the area served by PEPCO is the federal government. Thus, the lack of a manufacturing base coupled with the federal presence tends to insulate PEPCO sales from the effects of the business cycle. Whereas the nationwide unemployment rate in 1982 was 9.7 percent, the Washington area averaged only 5.5 percent (9).

Table I-13 indicates the employment patterns within the Washington Metropolitan Area for selected years. These figures should be viewed cautiously since the geographic coverage of these data includes certain areas outside of the PEPCO service area (e.g., Northern Virginia), and it excludes Southern Maryland. It nevertheless serves as a useful guide.

Over the past decade and a half major employment gains have taken place, but the sectoral shares have been remarkably stable. The only noticeable change has been a tendency in recent years for the service/finance sector to displace government employment. That tendency is, however, not dramatic and has little effect on energy demand. Manufacturing, which occupies roughly 20 percent of employment nationwide, accounts for less than 4 percent of Washington area jobs. Moreover, even this small amount tends to be in such activities as printing and food processing which use little energy. The combination of government and services/finance dominate employment in the Washington area comprising nearly 70 percent of the total.

Table I-13. Employment by Sector Washington, D.C. Area[a] (Thousands)

Sector	1982[b] Number	1982[b] Percent	1973[b] Number	1973[b] Percent
Manufacturing	58.8	3.7%	45.2	3.6%
Construction	65.8	4.2	77.9	6.2
Transportation/ Utilities	73.2	4.6	61.6	4.9
Trade	299.6	18.9	247.1	19.7
Services/Finance	557.2	35.2	348.9	27.7
Government	529.2	33.4	477.1	37.9
Total	1,583.8	100.0	1,257.8	100.0

(a) Data from Ref. 9.
(b) Figures are for April of indicated year.

Table I-14 demonstrates the extent to which power demand growth rates on the PEPCO system have fallen since 1973. Prior to that year, sales were growing by more than 8 percent per year, and have since slowed to slightly over 2 percent per year. Peak demand growth has fallen even more dramatically, revealing a slight tendency for PEPCO's very low annual load factor to improve over time. The pattern of growth in the residential and general service class is similar. (See also Figure I-6.) Sales to SMECO continue to grow fairly rapidly as the Southern Maryland region continues to undergo a gradual suburbanization process.

Table I-14. Growth in Energy and Peak Demand on the PEPCO System[a] (Thousands of MWh)

	1966	1973	1982	Annual Growth Rates 1966-1973	Annual Growth Rates 1973-1982
Residential	1,978	3,529	4,095	8.6%	1.7%
Nonresidential	5,661	9,704	11,882	8.0	2.3
Sales to SMECO	330	755	1,140	12.6	4.7
Total	7,969	13,988	17,117	8.4	2.3
Peak Demand (MW)	2,123	3,680	4,146	8.2	1.3
Load Factor	46.5%	46.7%	50.0%		

(a) Data from Ref. 3 and 4.

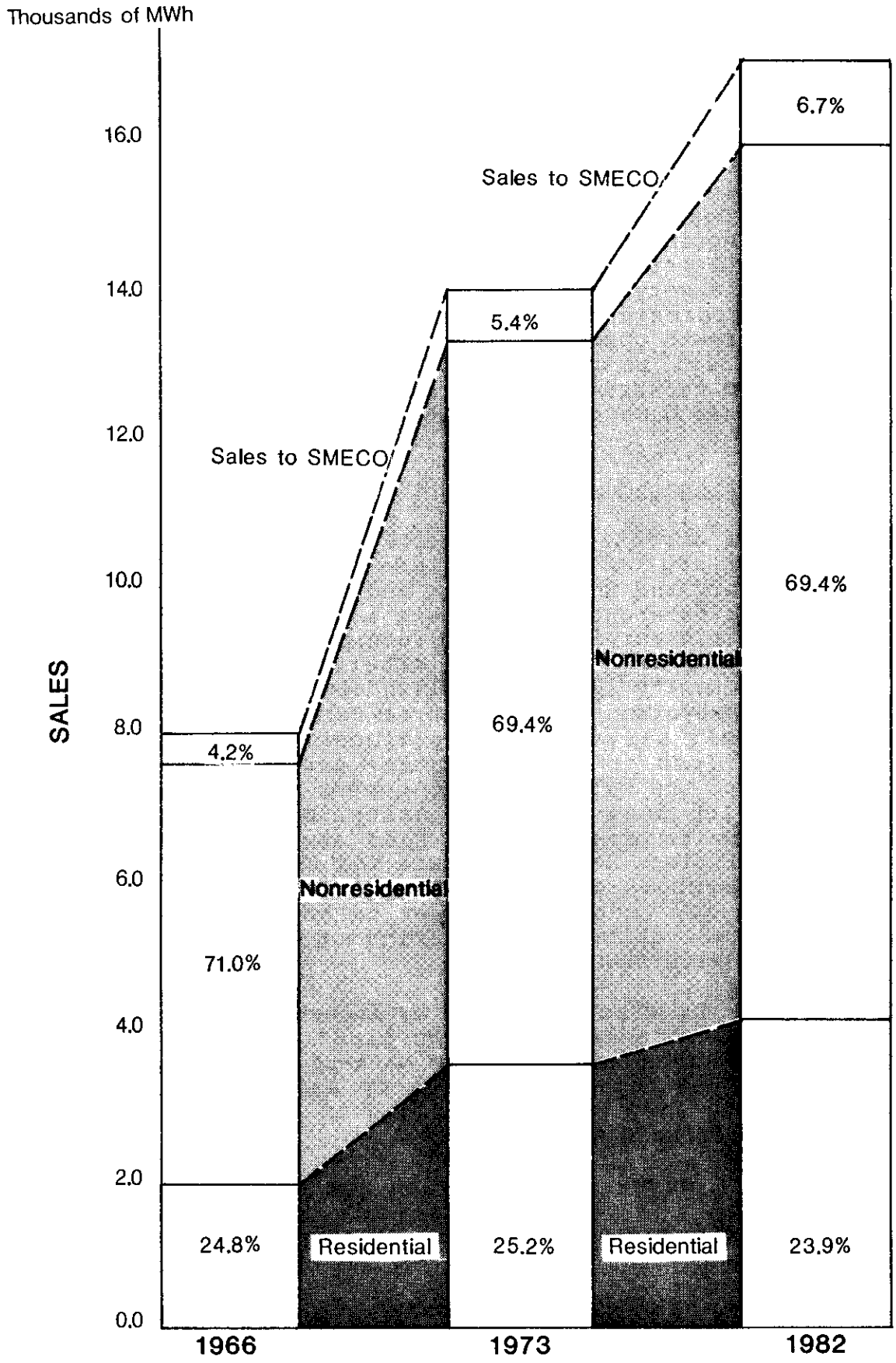

FIGURE I-6. GROWTH IN ENERGY ON THE PEPCO SYSTEM

(data from Table I-14)

There are several identifiable factors accounting for the decline in demand growth. Although some economic development in the Washington area has occurred in recent years, it has done so at slower rate than in the past. Population growth, in particular, has slowed considerably. Moreover, much of the Washington area development which has occurred in recent years has been outside of the PEPCO service area -- i.e., in Northern Virginia and the extremities of Prince George's and Montgomery counties. The District's population, which is entirely served by PEPCO, has been declining in absolute terms. Also, it has been hypothesized that PEPCO residential and commercial customers have already achieved a very high level of air conditioning saturation (which represents a large percentage of the Company's load), and the growth opportunities from further saturation may be modest. Finally, it is likely that the combined effects of higher prices and conservation programs also have substantially contributed to this demand growth rate reduction.

Delmarva Power & Light Company

DP&L serves directly or indirectly the Delmarva Peninsula -- a geographic region which includes the entire State of Delaware, the Maryland Eastern Shore and two Virginia counties. This region contains about 5,700 square miles and a population of 860,000. Electric service is also furnished to households and businesses on the Peninsula by one other, very much smaller, privately owned utility (Lincoln & Ellendale); by nine municipal electric utility systems[1]; and by three rural electric cooperatives. DP&L itself serves directly almost 80 percent of the retail electric load on the Peninsula; and it generates more than 90 percent of the bulk power consumed. DP&L has a larger role in generation than in retail sales, because it provides indirect service to much of the load served by the other distribution utilities. Dover, Delaware and Easton, Maryland are the only other systems generating significant quantities of power, and they buy (and sell) power on an interchange basis with DP&L. Thus, all utilities operating on the Peninsula are fully integrated with DP&L.

Some energy is also generated by industrial companies for their own use. Dupont's Seaford nylon plant generates most of the power it consumes and purchases back-up power from DP&L. A small amount of energy from the Getty Oil Company's joint steam-electricity facility is produced in excess of refinery requirements and is sold to DP&L.

Except for a major manufacturing and urban center in and around Wilmington, the Delmarva Peninsula is a largely rural region. An important food processing industry has developed in recent years as a natural complement to the region's agricultur-

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[1]Until recently the Maryland towns of St. Michaels and Centreville operated their own municipal electric system. Currently those two towns are now served at retail by DP&L.

al activity. In addition, there are several popular ocean and Bay resorts, the largest being Ocean City, Maryland. Maryland comprises only about one quarter of DP&L's total load, and virtually all of the heavy manufacturing on the Peninsula is in Delaware. The Virginia service territory is very small and accounts for less than 5 percent of total Peninsula power demands.

The economy of the Peninsula, as well as the differences among the three states there, can best be understood by examining employment patterns as shown below on Table I-15 for the year 1977. U.S. breakdowns are included on this table as a benchmark.

Table I-15. Employment Shares by Major Sector on the Delmarva Peninsula, 1977(a)

	Delaware	Maryland	Virginia	Total Peninsula	U.S.
Agriculture	2.3%	10.6%	12.0%	4.9%	3.6%
Manufacturing	26.2	21.5	26.8	25.1	21.7
Trade	19.4	21.4	13.4	19.6	20.4
Government	18.7	15.9	19.7	18.0	16.7
Other	33.4	30.6	28.1	32.4	37.6

(a) Data from Ref. 10.

Table I-16. Customer Class Shares of Electricity Demand On the Delmarva Power and Light System, 1981(a)

	Delaware	Maryland	Virginia	Total Peninsula	U.S.
Total Sales (Thousands of Mwh)					
	5,226	1,835	294	7,358	2,147,101
Percentage Distribution by Economic Sector					
Residential	27.3%	45.8%	42.8%	32.1%	33.6%
Commercial	24.4	34.0	39.8	27.1	24.0
Industrial	47.6	19.5	16.8	40.0	38.5
Other	0.7	0.7	0.6	0.8	3.9

(a) Data from Ref. 11.

This table suggests that the structure of the Delmarva economy is similar to the rest of the nation. However, these sector definitions are extremely broad and tend to hide important differences among the various portions of the Peninsula. For example the most important manufacturing industry in the Maryland service area is food processing, an activity which does not use large quantities of energy. By contrast, chemicals, an extremely energy intensive industry, dominates manufacturing in Delaware. Thus, within these employment categories are major differences in economic activity which are themselves expressed in electricity demand. This is shown below in Table I-16.

The obvious differences are in the industrial energy sales category. Delaware's industry uses 47.6 percent, whereas in Maryland and Virginia the industrial sector accounts for less than 20 percent of total electricity usage. On the other hand, Maryland and Virginia have very large residential sectors.

Clearly, a precipitous decline in energy sales and peak demand growth rates has taken place since 1973. (See Table I-17 and Figure I-7.) This tendency can be explained by the various forces which have operated nationwide --sluggish economic growth, responses to higher energy prices and so forth. But a prominent part of the explanation lies in the stagnant industrial power demands. (Note that 1982 industrial sales were actually below those in 1973.) The long-run outlook for heavy manufacturing industry in Delaware is one of virtually no growth. Because of the importance of this sector, overall system demand growth will be restrained.

Table I-17. Growth in Energy and Peak Demand on the Delmarva Power and Light System(a) (Thousands of MWh)

				Average Annual Growth Rates	
	1966	1973	1982	1966-1973	1973-1982
Residential	839	1,630	2,026	10.5%	2.4%
Commercial	1,025	1,360	1,730	9.8	2.7
Industrial	1,510	2,513	2,256	7.6	-1.2
Total	3,638	6,756	7,249	9.2	0.8
Peak Demand (MW)	661	1,489	1,523	10.8	0.3
Load Factor	67.8%	55.8%	58.5%		

(a) Data from Ref. 3 and 4.

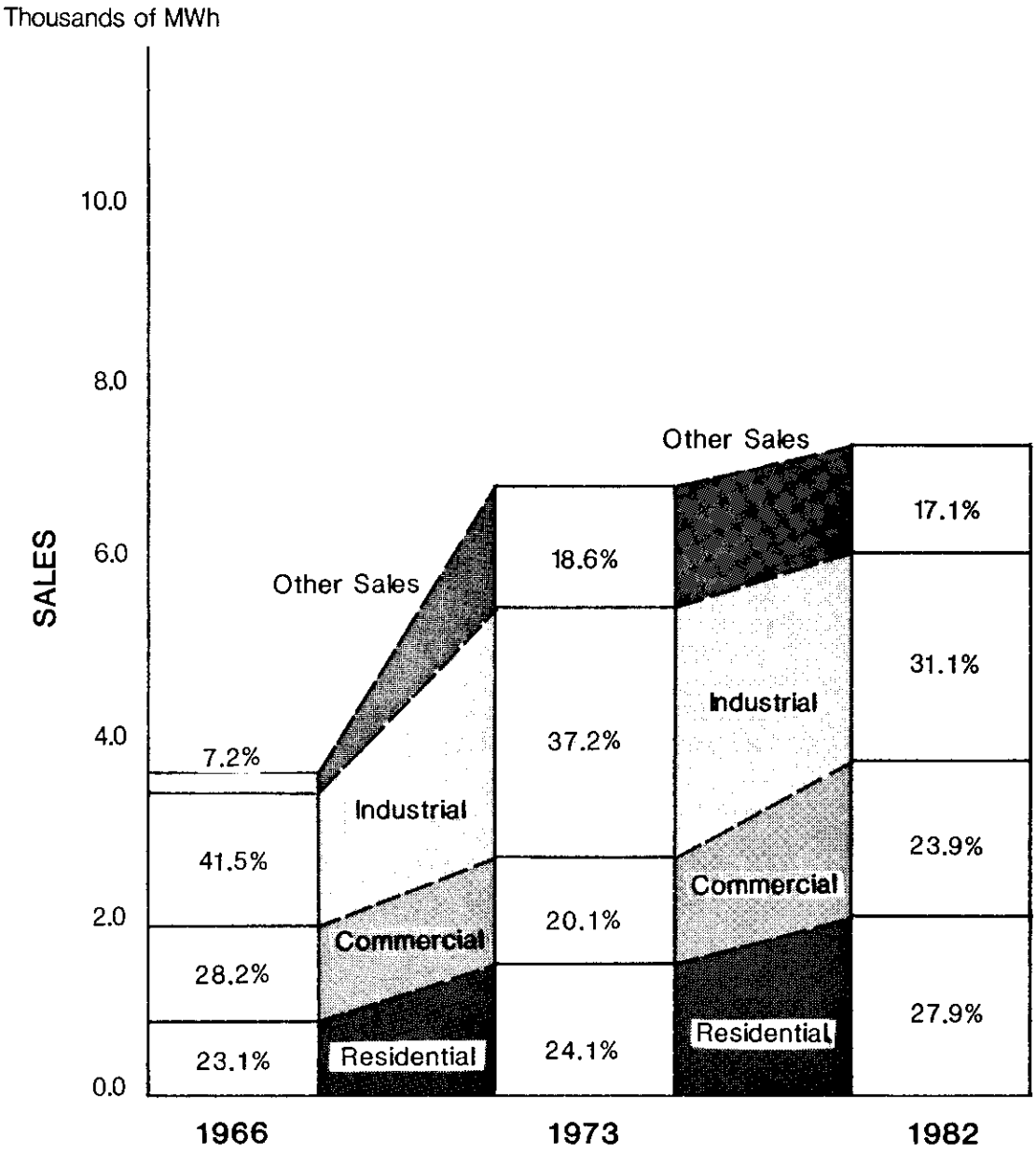

FIGURE I-7. GROWTH IN ENERGY ON THE DELMARVA POWER AND LIGHT SYSTEM

(data from Table I-17)

The Allegheny Power System

APS is a holding company whose principal operating subsidiaries are The Potomac Edison Company (PE), The Monongahela Power Company (MP) and The West Penn Power Company. These three companies serve a sprawling, largely rural service territory which extends over five states, approximately 86 counties and 29,000 squares miles. Approximately 2.6 million people live in this geographic region. The rural nature of the system is attested to by the fact that the largest city in the APS service territory, Parkersburg, West Virginia, has a population of about 44,000.

Potomac Edison operates in western Maryland, the eastern West Virginia panhandle, and the northwestern portion of Virginia. Monongahela Power serves the northern half of West Virginia and a small area in eastern Ohio along the Ohio River. West Penn serves the southwest and central areas of Pennsylvania. The relative sizes of the three companies are shown in Table I-18.

On the basis of energy sales, West Penn is the single largest portion of the system; PE and MP are approximately equal in size. The Ohio and Virginia service areas of APS are quite small compared to those in Maryland, Pennsylvania and West Virginia. From the above table it is apparent that power demands in the various areas have been growing at different rates. Between 1965 and 1982, PE grew by 7 percent per year compared to less than 4 percent for West Penn. The rather extraordinary growth in Maryland is partly explained by the establishment of the Eastalco Aluminum Company plant in 1970 near Frederick. As of 1982, that single customer represented nearly a third of the Maryland load and approximately a fifth of the total Potomac Edison load.

Table I-18. APS Retail Energy Sales, 1982[a]
(Thousands of MWh)

Company	Sales	% of APS	1965-1982 Annual Growth Rate
Potomac Edison	7,410	26.9%	7.0%
Monongahela Power	7,266	26.4	4.2
West Penn	12,864	46.7	3.1
APS	27,540	100.0	4.3

(a) Data from Ref. 12.

It should also be noted that APS serves several municipals and cooperatives in its service territory on a wholesale basis. In 1982 the APS companies sold 780 thousand MWh to 13 resale customers, the largest being Hagerstown, Maryland. However, those sales represented only about 2.6 percent of the System's energy sales.

APS serves a vast rural region containing small towns and a few small cities. Despite the absence of large cities in the service area, agriculture is relatively unimportant (less than 6 percent of total employment) compared to heavy manufacturing. APS serves a rather large industrial load due to the predominance of electricity intensive industries in the area such as steel, aluminum, chemicals, glass and coal mining. The employment shares shown below on Table I-19 demonstrate that the structure of APS service area economy is not atypical of the rest of the nation.

Table I-19. Employment Shares by Major Sector, 1977(a)

	Potomac Edison	Monongahela Power	West Penn	APS	US
Agriculture	7.2%	6.1%	4.8%	5.9%	3.6%
Mining	0.7	6.3	4.1	3.9	0.9
Manufacturing	23.9	15.6	24.4	21.8	21.7
Trade	19.2	21.8	16.8	18.6	20.4
Government	15.2	16.3	16.2	16.0	16.7
Other	33.7	33.9	33.7	33.8	36.7

(a) Data from Ref. 10.

These figures demonstrate that agriculture and coal mining are far more important activities in the APS service area than nationwide; but employment shares in the other major sectors compare rather closely with those of the U.S. Even though the manufacturing share is virtually identical to the U.S. average, manufacturing activity in this region has been disproportionately concentrated in the energy intensive industries. As of 1977 nearly 75 percent of the industrial electricity sales revenues came from a few, very energy intensive industries -- coal mining; stone, clay and glass; primary metals; paper and chemicals. Nationwide, these industries account for about 50 percent of industrial electricity sales revenues. The downturn in these industries helps to explain the sharp decline experienced by APS in its industrial sales category.

The pattern of electricity sales reflect the nature of the APS service territory economy. A breakdown of electricity sales by major customer class for APS and the U.S. shown below for 1982 reveal important differences.

Table I-20. Electricity Sales by Class, 1982(a)

	APS	U.S.
Residential	31.1%	35.0%
Commercial	17.2	25.2
Industrial	48.5	35.7
Other	3.1	4.1

(a) Data from Ref. 1 and 12.

The combination of a concentration of heavy industry and the lack of any major commercial centers is largely responsible for the pattern of APS sales shown above. Also, the relatively mild summer climate and lower than average per capita incomes tend to hold down residential usage relative to the rest of the U.S.

Although the customer class distribution of electricity sales is quite different from the rest of the nation, historical sales growth experience for APS has been quite typical. Prior to 1973 sales and peak demand were growing rapidly. A slight decline in demand occurred during the 1974-1975 period, and demand since then has been growing sluggishly. The slowdown in demand experienced by APS has been for substantially the same reasons as for the rest of the electric utility industry. In addition, however, demand has reflected the poor performance in recent years of the steel industry upon which the service area economy is highly dependent. As the figures in Table I-21 demonstrate, the post-1973 decline in demand has been sharpest for industrial customers.

It is also interesting to note that peak demand has grown more rapidly than energy sales since 1973. The figure listed for 1973 is the peak demand for the winter of 1973-1974 -- in the midst of the Arab oil embargo. The 1973 energy sales figure is for the calendar year and therefore largely pre-embargo. This tends to exaggerate post-1973 peak demand growth somewhat. It should also be noted that the complete absence of growth in industrial sales shown on Table I-21 is somewhat misleading. Substantial growth in that sector took place in the mid and late 1970s. However, this growth was offset by actual declines since 1979. Further, it has been the nonindustrial sales which are the fastest growing part of the system. (See also Figure I-8.) Since these customers tend to have lower load factors (and higher

Table I-21. Growth of Energy and Peak Demand for the Allegheny Power System[a] (Thousands of MWh)

	1966	1973	1982	Average Annual Growth Rates 1966-1973	1973-1982
Residential	3,711	6,614	8,834	8.6%	3.3%
Commercial	1,865	3,621	4,880	9.9	3.4
Industrial	8,822	13,760	13,732	6.6	-0.02
Total	14,712	24,672	27,540	7.7	1.2
Peak Demand (MW)	2,661	4,230	5,720	6.2	3.4
Load Factor	68.7%	71.7%	61.3%		

(a) Data from Ref. 3, 12 and 13.

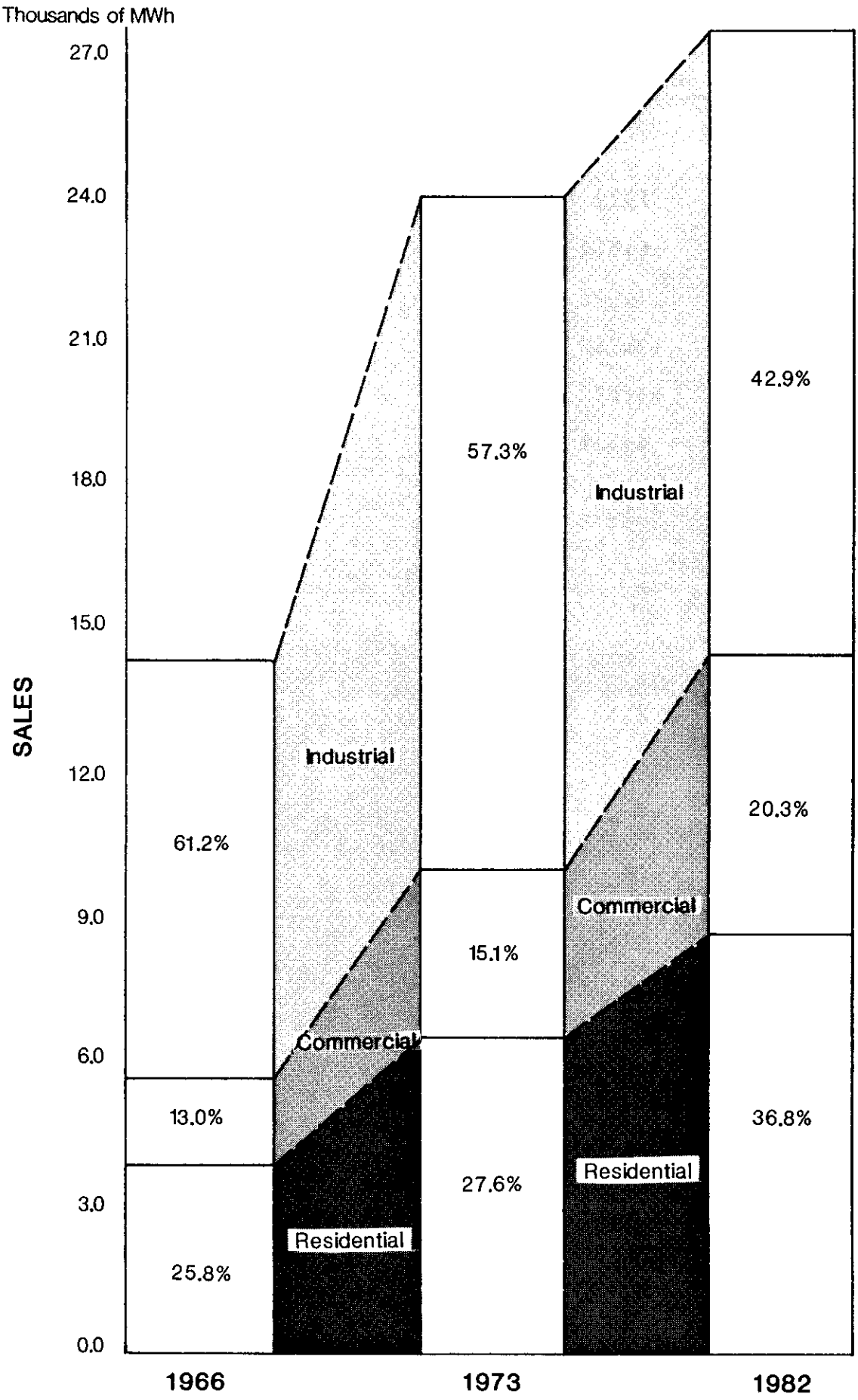

FIGURE I-8.
GROWTH IN ENERGY ON THE ALLEGHENY POWER SYSTEM

(data from Table I-21)

coincidence factors) than the system average, this has also caused peak to grow more rapidly than energy. Despite the deterioration which has occurred over the past few years, APS still maintains a relatively high system load factor, especially compared to the other Maryland utilities.

Summary of Economic and Energy Usage Trends

Table I-22 summarizes the historical demand experience of major Maryland utilities. It reveals that the pattern of load growth of the four utilities has been similar. From 1966 to 1973 energy sales and peak demand grew at annual average rates of 8.0 percent and 8.4 percent, respectively, for the four major systems combined. Sales fell in 1974 and 1975, and demand fell in 1973 and 1978. From 1981 to 1982 sales dropped by 6 percent whereas peak demand grew by 1.6 percent. This stagnation of growth reflects the depressed economic conditions. The historical demand patterns in the residential class are shown graphically in Figure I-9.

According to utility and Power Plant Siting Program (PPSP) forecasts, future electricity demand growth will more closely resemble the past ten years than the decade prior to the early 1970s. The slow economic growth of the 1970s, in comparison to the more rapid economic expansion of the 1960s, is expected to persist in the 1980s. The U.S. Bureau of Economic Analysis is projecting that real per capita income in Maryland will increase by only 2.3 percent per year over the next decade. The Maryland Department of State Planning (DSP) is projecting statewide employment growth of less than 1 percent per year and population growth of 0.7 percent per year over this same period. Perhaps even more important, DSP foresees virtually no growth in manufacturing employment. (See Appendix A for a more complete discussion of DSP projections.)

Another prominent explanation for declines in load growth is the massive increases in electricity prices during the mid and late 1970s. These price increases are documented for residential customers on Table I-23. With the exception of BG&E, whose electric rates (in real terms) decreased slightly between 1972 and 1982, Table I-23 shows rapid real increases until 1980 and stable or declining prices (in real terms) for the past two years. Determining electricity price trends likely to prevail in the future for Maryland utilities is extremely difficult. However, even if prices remain stable in real terms, the large price increases of earlier years will serve to suppress demand. This is because customers require many years to fully adjust to price changes.

Finally, governmental programs, innovative rate designs and utility interest in "demand-side planning" have only recently emerged. Although less important in determining energy demand

Table I-22. Historic Energy Sales and Peak Demand of the Major Utility Systems[a] (MW and Thousand MWh)

	PEPCO		BG&E		DP&L		APS		TOTAL	
	Sales[b]	Peak	Sales	Peak	Sales	Peak[c]	Sales	Peak	Sales	Peak
1966	7,639	2,123	8,653	1,817	3,638	661	14,712	2,661	34,642	7,262
1970	11,183	2,908	11,971	2,496	5,440	1,045	20,119	3,785	48,713	10,234
1973	13,645	3,680	14,341	3,334	6,756	1,489	24,672	4,230	59,414	12,733
1974	12,526	3,502	13,990	3,190	6,592	1,429	24,944	4,272	58,052	12,393
1975	13,064	3,623	13,857	3,256	6,393	1,443	23,962	4,650	57,276	12,972
1976	13,444	3,500	14,758	3,234	6,660	1,301	26,704	4,993	61,566	13,028
1977	14,020	3,857	15,462	3,588	6,906	1,499	28,247	5,031	64,635	13,975
1978	14,469	3,714	16,170	3,553	7,248	1,476	28,733	5,174	66,620	13,917
1979	14,651	3,804	16,823	3,621	7,492	1,501	30,377	5,335	69,343	14,261
1980	15,451	4,142	17,228	3,969	7,460	1,581	29,958	5,272	70,097	14,964
1981	15,645	4,152	17,584	3,871	7,395	1,575	29,679	5,564	70,303	15,118
1982	15,977	4,146	17,292	3,924	7,249	1,576	27,540	5,720	66,055	15,366
					Annual Rates of Growth					
1966-1973	8.6%	8.2%	7.5%	9.1%	9.2%	12.3%	7.7%	6.8%	8.0%	8.4%
1973-1982	1.8	1.3	2.1	1.8	0.8	0.6	1.2	3.41	1.5	2.1
1966-1982	4.7	4.3	4.4	4.9	4.4	5.6	4.0	4.9	4.3	4.8

(a) Data from Ref. 3, 4 and 11.
(b) Excludes sales to SMECO.
(c) Includes sales for resale loads.

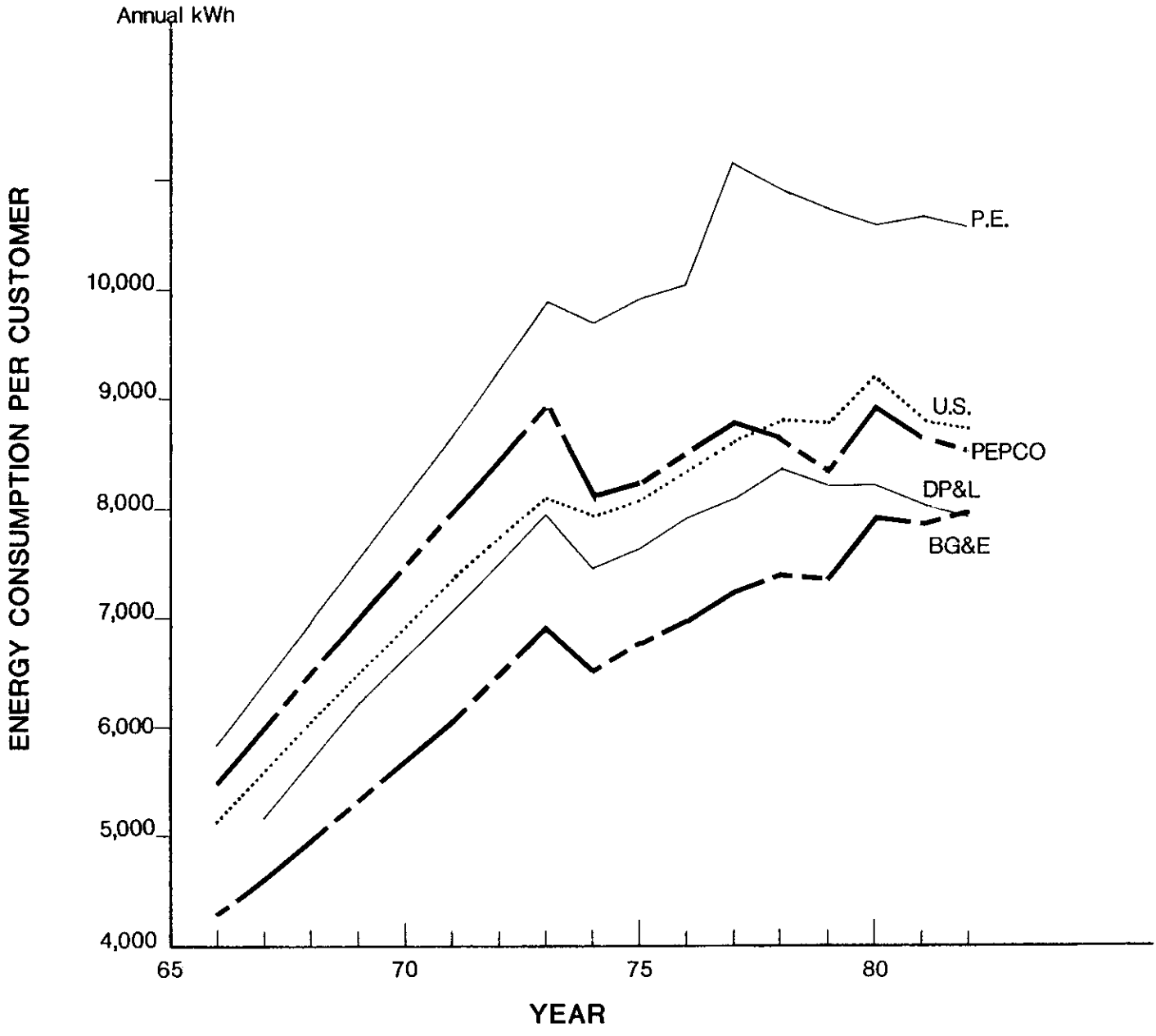

FIGURE I-9. ANNUAL AVERAGE ENERGY USE PER CUSTOMER
(data from Ref. 10)

Table I-23. Monthly Residential Electric Bills[a]

Service Areas	1972	1980	1982	Annual Growth Rate 1972-1980	Annual Growth Rate 1980-1982
PEPCO	$10.35	$29.62	$36.68	14.1%	11.3%
(CPI Adjusted)	10.35	15.92	16.00	5.5	0.3
BG&E	15.30	28.11	34.98	7.9	11.6
(CPI Adjusted)	15.30	15.11	15.25	-0.2	0.5
DP&L	13.19	36.11	42.74	13.4	8.8
(CPI Adjusted)	13.19	19.40	18.64	4.9	-2.0
Potomac Edison	10.62	27.12	29.48	12.4	4.3
(CPI Adjusted)	10.62	14.57	12.86	4.0	-6.1
Maryland	13.82	28.57	35.37	9.5	11.3
(CPI Adjusted)	13.82	15.35	15.43	1.3	0.3
U.S.	11.99	27.50	37.26	10.9	16.4
(CPI Adjusted)	11.99	14.78	16.25	2.6	4.9

(a) Bills are based upon 500 kWh per month on January 1 of designated year. Bills for specific utilities are for Maryland service area only. Data from Ref. 14.

than economic growth and energy prices, these actions will also serve to slow demand growth. (See Chapter II for a detailed discussion of these programs.)

In cooperation with DSP, PPSP has maintained a program of conducting independent long-range load forecasts. Since 1977 studies have been conducted on each of the four major systems. A PEPCO study was recently completed, and a new BG&E study is currently in progress. The program of load forecasting involves updating each study approximately every two years.

The load forecasts were developed through the application of econometric models. This methodology requires two main stages. First, statistical models of the demand for electricity are estimated from historical data. These models describe and quantify the relationships between the demand for electric energy and the various factors (i.e., explanatory variables) that govern it, such as population, income, employment, climate, electric rates, appliance ownership, etc. In the second stage, projected or assumed future values of the explanatory variables are inserted into the estimated model, and the forecast is then calculated for each year. Peak demand is largely explained by the level of sales occurring in the month in which the annual peak occurs. Thus the energy sales forecast must first be obtained in order to forecast the peak.

All PPSP/DSP forecast studies have modeled electricity sales separately for the residential and nonresidential classes of customers and for the summer and winter seasons. In all cases the models were estimated using ordinary least squares regression -- in some cases using quarterly or monthly time-series data and in other cases using pooled time-series/cross-section data.

In each study numerous simulations and scenarios were run by varying the key forecasting assumptions such as economic growth and energy prices. As might be expected, these forecasts are highly sensitive to the particular economic and energy price outlook assumed. These simulation results serve to emphasize the uncertainty in long-term load forecasting. In each study a most likely case set of assumptions was developed based upon economic/demographic projections prepared by federal, State and local agencies along with PPSP's best judgment. The recently completed PEPCO study employed an economic forecasting model of the PEPCO service area prepared by Wharton Econometric Forecasting Associates. The projections from that model were used in conjunction with DSP projections and other sources of information.

Table I-24 presents the PPSP/DSP projections of total sales and peak demand over the next decade. These results show expected load growth of 1 to 3 percent per year, which is slightly below national projections prepared by EIA. The PPSP/DSP projections of peak load are compared with company-prepared projections in Table I-25. In general, the company-

Table I-24. PPSP/DSP Projected Energy Sales and Peak Demand of the Major Utilities[a] (MW and Thousand MWh)

	1982		1986		1992		Annual Rates of Growth 1973-1982		Annual Rates of Growth 1982-1992	
	Sales	Peak	Sales	Peak	Sales	Peak	Sales	Peak	Sales	Peak
PEPCO[b]	15,977	4,146	16,135	4,339	17,467	4,684	1.8%	1.3%	0.9%	1.2%
BG&E	17,292	3,924	20,245	4,406	24,958	5,262	2.1	1.8	3.7	3.0
DP&L[c]	7,249	1,523	8,075	1,749	9,526	2,086	0.8	0.7	2.8	3.2
(Md. Portion)[d]	1,509	438	1,751	518	2,134	611	4.6	2.6	3.5	3.4
APS	27,540	5,720	34,828	6,443	41,022	7,580	1.2	3.4	4.1	2.9
(Md. Portion)[d]	5,170	1,107	6,424	1,206	7,473	1,452	2.9	5.5	3.5	2.8
Md. Total[e]	39,948	9,615	44,550	10,469	52,032	12,009	2.3	2.0	2.7	2.2
Total	68,058	15,313	79,283	16,937	92,973	19,612	1.6	2.1	3.2	2.5

(a) Data from Ref. 15. 1982 figures are actuals.

(b) PEPCO projections are preliminary.

(c) Includes entire Delmarva Peninsula.

(d) Projections for the Maryland portions of DP&L and APS are estimates since formal projections of peak demand were not prepared.

(e) Includes non-Maryland portions of PEPCO.

Table I-25. Comparison of PPSP/DSP and Company-Prepared Peak Demand Forecasts[a] (Megawatts)

	1983		1986		1992			Annual Rates of Growth 1973-1982	Annual Rates of Growth 1983-1992	
	PPSP	Company	PPSP	Company	PPSP	Company	Difference[d]		PPSP	Company
PEPCO	4,197	4,000	4,339	4,153	4,684	4,439	5.2%	1.3%	1.2%	1.2%
BG&E	4,001	4,200	4,406	4,500	5,262	5,040	4.2	-0.1	3.1	2.0
DP&L[b]	1,594	1,512	1,749	1,634	2,138	1,795	16.0	0.7	3.3	1.9
(Md. Portion)	468	365	518	447	632	524	17.1	3.3	3.4	4.1
APS	5,910	5,550	6,443	6,150	7,580	7,258	4.2	3.4	2.8	3.0
(Md. Portion)	1,089	993	1,206	1,104	1,452	1,318	9.2	15.5	3.2	3.2
Md. Total[c]	9,755	9,558	10,469	10,204	12,030	11,321	5.9	2.0	2.4	1.9
Total	15,702	15,262	16,937	16,419	19,664	18,532	5.8	2.6	2.5	2.2

(a) Data from Ref. 5 and 15.

(b) Figures exclude Getty Refinery load.

(c) Includes non-Maryland portions of PEPCO.

(d) Figures represent the percent difference between Company and PPSP forecasts.

prepared projections are somewhat below those prepared by PPSP/DSP. This is partly explained by the fact that the company projections in most cases have been prepared more recently and thus incorporate the depressed economic conditions and load declines that occurred in 1981 and 1982. For example, PPSP's DP&L study was completed in early 1980.

E. Capacity Profiles and Expansion Plans

In the last several years progress has been made by the Maryland utilities in reducing dependency upon oil-fired generation. This trend is expected to continue over the next decade though at a much slower pace. The slowdown in this trend is partially attributable to construction deferrals resulting from reductions in forecasted load growth.

This section presents the capacity expansion plans of the State's utilities and evaluates the adequacy of those plans for meeting anticipated load growth. Since capacity planning is normally performed on a systemwide basis, the discussion refers to non-Maryland as well as changes to Maryland-located capacity. The major changes announced by the Maryland utilities are summarized on Table I-26 on a year-by-year basis through 1995.

Tables I-27 and I-28 summarize the current, recent-past and projected generation capacity profiles for the major generating utilities. The megawatts by fuel type are shown on Table I-27, and Table I-28 breaks those figures down into percentages. Over the next ten years there will be a moderate trend toward replacing oil capacity with coal and hydro. However, this trend is not dramatic. The oil and gas share of capacity over the ten-year period will decline from 28.5 to 22.2 percent, coal will rise from 58.6 to 62.3 percent, and hydro will rise from 3.4 to 7.1 percent.

Perhaps of even more relevance than capacity by fuel type is generation by fuel type, as shown in Table I-29 and Figure I-10, for 1982. Generation and capacity percentages may differ because the utility attempts to serve load, to the greatest extent possible, with those generating units with the lowest operating cost. Thus, PEPCO, which identifies almost 40 percent of its capacity as oil and gas, produced 93.9 percent of its energy from coal. Similarly, APS produced virtually all of its energy with coal even though it has almost 450 megawatts of oil-fired generating capacity. DP&L and BG&E each have large amounts of oil and gas capacity, 30.7 percent and 47.2 percent, respectively, but they also minimize their gas/oil usage. DP&L generated almost 80 percent of its energy from coal and nuclear plants in 1982, and BG&E's generation mix consisted of 26.3 percent coal, 3.2 percent hydro and 58.2 percent nuclear generation in 1982.

Table I-26. Summary of Capacity Changes of Maryland Utilities[a]
(Megawatts)

	Additions	Reductions
1983	7.9 Indian River 4 Uprate (DP&L) 1.0 Keystone 1 & 2 Rerate (DP&L) 192 Crane 1 Coal (BG&E)[b] 192 Crane 2 Coal (BG&E)[b] 82 Edge Moor 3 Coal (DP&L)[b]	-70 Edge Moor 1 Retirement (DP&L) -70 Edge Moor 2 Retirement (DP&L) -86 Springdale 7 Cold Reserve Status (APS) -121 Springdale 8 Cold Reserve Status (APS) -77 Mitchell 1 Cold Reserve Status (APS) -77 Mitchell 2 Cold Reserve Status (APS) -192 Crane 1 Oil (BG&E) -192 Crane 2 Oil (BG&E) -82 Edge Moor Oil (DP&L)
1984	620 Brandon Shores 1 (BG&E) 25 Harrison 2 Rerate (APS)	-12 Edge Moor 4 Steam Sale to Dupont (DP&L) -51 Westport 1, 13, 14 (BG&E) -23 Milesburg 1 Retirement (APS) -23 Milesburg 2 Retirement (APS)
1985	51.5 Termination of Indian River 4 Lease (DP&L) 47 Solid Waste Facility (BG&E) 50 Safe Harbor (BG&E) 420 Bath County Project (APS)	None
1986	75 Safe Harbor(BG&E) 420 Bath County Project (APS)	None
1987	None	-40 Delaware City 3 (DP&L) -58 Westport 3 (BG&E)
1988	620 Brandon Shores 2 (BG&E) 77 Mitchell 1 Reactivate (APS) 77 Mitchell 2 Reactivate (APS)	None
1989	86 Springdale 7 Reactivate (APS) 121 Springdale 8 Reactivate (APS)	None

Table I-26 (Cont'd.)

	Additions	Reductions
1990	37 Combustion Turbine (DP&L)	-37 Edge Moor 10, Madison St., West Sub. Retirement (DP&L)
1991	630 Coal #1 (APS)	-174 Potomac River 1 & 2 (PEPCO)
1992	42 Combustion Turbine (DP&L)	-42 Delaware City 10, Indian River 10, Vienna 10 Retirement (DP&L) -68 Westport 4 (BG&E)
1993	300 Coal Plant (PEPCO) 630 Coal #2 (APS)	None
1994	None	None
1995	325 Vienna - 9 (DP&L) 58 Switch from Summer to Winter Ratings (DP&L)	

BG&E provided information only to 1992.

(a) Data from Ref. 5

(b) Coal conversion

Table I-27. Generating Capacity of Maryland Utility Systems by Fuel Type, 1979-1992[a] (Megawatts)

	PEPCO	DP&L[b]	APS	BG&E	Other[c] Md.	Total[d]
1979						
Oil/Gas	1,986	1,291	486	2,371	75	6,209
Coal	3,013	793	6,451	852	-	11,109
Nuclear	-	237	-	1,635	-	1,872
Hydro	-	-	62	152	494	708
Total	4,999	2,321	6,999	5,010	569	19,898
1982						
Oil/Gas	2,336	707	466	2,371	75	5,935
Coal	3,007	1,277	7,072	852	-	12,208
Nuclear	-	319	-	1,650	-	1,969
Hydro	-	-	62	152	494	708
Total	5,343	2,303	7,580	5,025	569	20,820
1987						
Oil/Gas	2,336	567	0	1,936	75	4,914
Coal	3,007	1,285	7,095	1,856	-	13,243
Nuclear	-	319	-	1,650	-	1,969
Hydro	-	-	902	277	494	1,673
Total	5,343	2,171	7,997	5,719	569	21,799
1992						
Oil/Gas	2,336	567	361	1,868	75	5,207
Coal	3,133	1,285	7,725	2,476	-	14,619
Nuclear	-	319	-	1,650	-	1,969
Hydro	-	-	902	277	494	1,673
Total	5,469	2,171	8,988	6,271	569	23,468

(a) Data from Ref. 3 and 5.

(b) DP&L figures do not include capacity associated with Getty refinery.

(c) Includes oil-burning unts at Hagerstown, Easton and Berlin, and hydro units at Deep Creek Lake and Conowingo.

(d) Table excludes a 47-megawatt municipal solid waste unit supplying the BG&E system. That unit is expected to begin service in 1985.

Table I-28. Generating Capacity of Maryland Utility Systems by Fuel Type, 1979-1992[a] (Percent)

	PEPCO	DP&L	APS	BG&E	Total
1979					
Oil/Gas	39.7%	55.6%	6.9%	47.3%	31.2%
Coal	60.3	34.2	92.2	17.0	55.9
Nuclear	--	10.2	--	32.6	9.4
Hydro	--	--	0.9	3.0	3.5
1982					
Oil/Gas	43.7	30.7	5.9	47.2	28.5
Coal	56.3	55.4	93.3	17.0	58.6
Nuclear	--	13.9	--	32.8	9.5
Hydro	--	--	0.8	3.0	3.4
1987					
Oil/Gas	43.7	26.1	0.0	33.9	22.5
Coal	56.3	59.2	88.7	32.5	60.8
Nuclear	--	14.7	--	28.9	9.0
Hydro	--	--	11.3	4.8	7.7
1992					
Oil/Gas	42.7	26.1	4.0	29.8	22.2
Coal	57.3	59.2	86.0	39.5	62.3
Nuclear	--	14.7	--	26.3	8.4
Hydro	--	--	10.0	4.4	7.1

(a) Data from Table I-27.

Table I-29. 1982 Generation Profiles of the Maryland Utilities[a]

	PEPCO	BG&E	DP&L[b]	APS	Total
Generation (Thousand MWh)					
Oil/Gas	1,006	2,173	1,863	8	5,050
Coal	15,457	4,668	5,415	36,627	62,166
Hydro	--	574	--	186	760
Nuclear	--	10,345	1,893	--	12,238
Total	16,463	17,760	9,171	36,821	80,215
Percent					
Oil/Gas	6.1%	12.2%	20.3%	<0.1%	6.3%
Coal	93.9	26.3	59.0	99.5	77.5
Hydro	--	3.2	--	0.5	0.9
Nuclear	--	58.2	20.6	--	15.2

(a) Data from Ref. 5.

(b) Generation from Delaware City 1 & 2 has been subtracted.

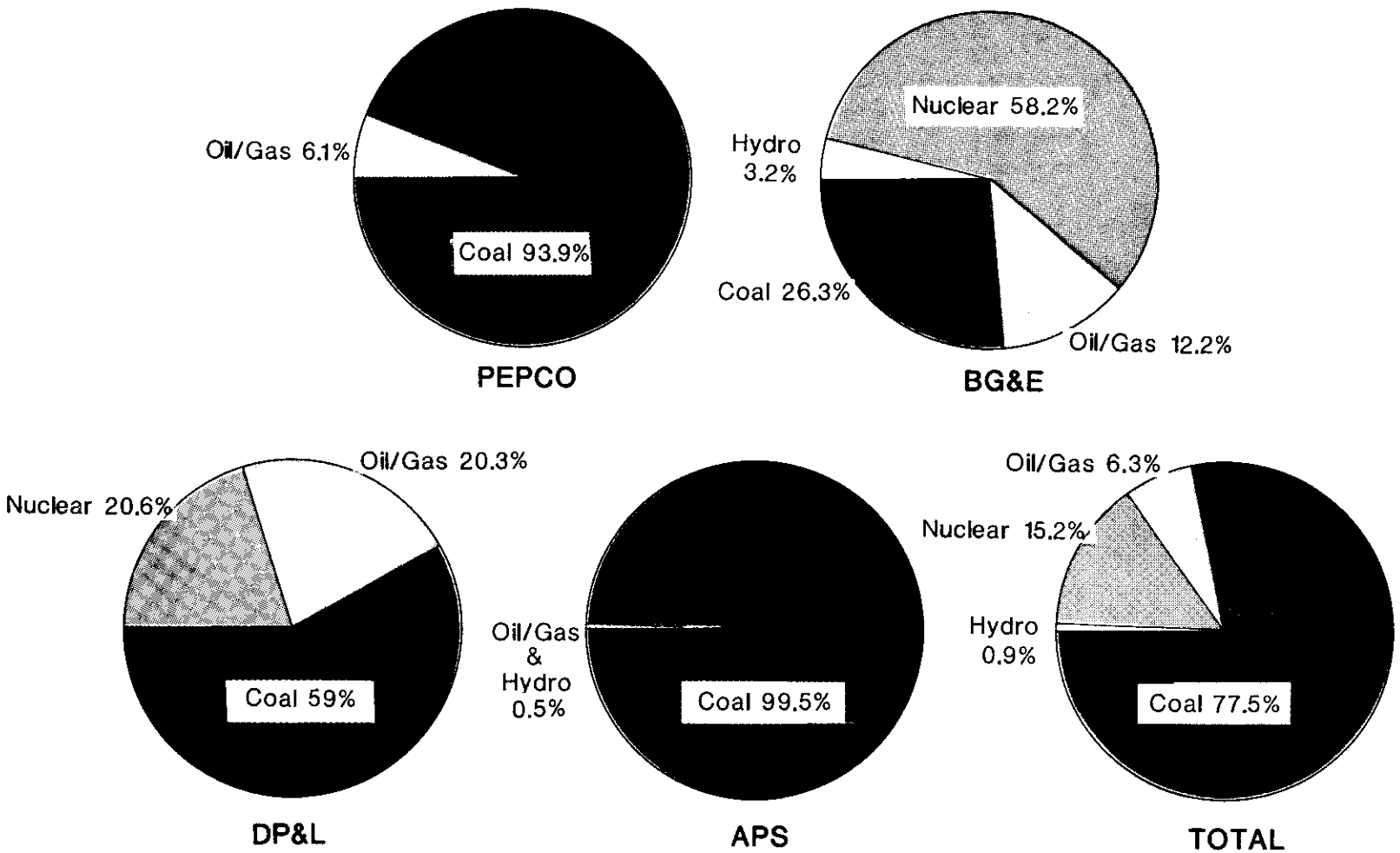

FIGURE I-10.
1982 GENERATION PROFILES OF THE MARYLAND UTILITIES(% KWH by fuel type)
(data from Table I-29)

The remainder of this section describes the utility expansion plans and current profiles on a company-by-company basis.

Baltimore Gas & Electric

On the basis of capacity BG&E in 1982 displayed a greater dependence on oil (47 percent) and had proportionately less coal (17 percent) than any other utility. Those figures, however, are somewhat misleading. The two Calvert Cliffs nuclear units accounted for over 58 percent of total generation in that year, while only 12 percent of the Company's output came from oil or gas. BG&E currently has 5,025 megawatts of total installed capacity.

With 1,240 megawatts from the two Brandon Shores units entering service within the next five years, BG&E will experience a sharp increase in its installed capacity. Both units will burn coal. The first unit is scheduled for service in 1984, and the second unit will begin service in late 1988. Further contributing to BG&E's coal capacity is the conversion of the two Crane units (total of 384 megawatts) from oil to coal in 1983. Thus the Company's coal capacity will rise from 852 megawatts in 1982 to 2,476 megawatts in 1992 -- an increase from 17.0 percent to 39.5 percent of total capacity. BG&E has projected that its production of power from gas and oil burning units will fall sharply over the next several years. Gas and oil's share of energy production is projected to fall from 10 percent in 1982 to 3 percent in 1983. By 1992, BG&E expects to supply only 1 percent of its load from oil-fired units (16).

Some other less dramatic changes will also be occurring over the next decade. Much of BG&E's old, oil-fired capacity at its Westport Station will be retired. In 1985 and 1986, 125 megawatts of capacity from the Safe Harbor hydroelectric facility will be obtained. The Safe Harbor Water Power Corporation, which owns the facility, is itself jointly owned by BG&E and Pennsylvania Power and Light Company. BG&E's current share is 152 megawatts, or two-thirds of the total. Finally, the Company has contracted to buy 47 megawatts of power from a solid waste facility owned and operated by the Northeast Maryland Waste Disposal Authority. This facility is scheduled for service in 1985.

Beyond 1992 BG&E's plans are uncertain. The Company had previously announced plans to construct an 800-megawatt unit at its Perryman site in the early 1990's. While that timeframe remains a possibility, BG&E is currently exploring scheduling, technology and power supply options. Among the technology options under consideration for Perryman are fluidized-bed combustion and coal gasification.

Allegheny Power System

APS is an almost entirely coal-fired system. In 1982, 93.3 percent of its capacity was coal-fired with an additional 5.9 percent oil-fired and 1 percent hydro. However, the oil-fired capacity was almost entirely unused. Coal accounted for 99.5 percent of the System's power generation in 1982. APS' generating capability is presently 7,573 megawatts, making it the largest of the four major systems described in this section. (12).

The Bath County pumped storage project is the only major generating capacity addition to which to Company is presently committed. Scheduled for completion in 1986, the project is a 2,100-megawatt facility being constructed by VEPCO. APS will own at least 420 megawatts (20 percent) and at a minimum is committed to leasing an additional 20 percent through 1996. Under its contract with VEPCO, APS has the option of purchasing a total interest of 50 percent, or 1,050 megawatts, of the facility. This option must be exercised before the end of 1984. The Bath project will result in hydro capacity as a percentage of total APS capacity increasing from less than one percent to over 11 - percent. The figures in Tables I-26 through I-29 assume only the minimum 840-megawatt participation.

APS retired the 39-megawatt oil-fired Riverton Station on December 31, 1982. In 1983 it will place approximately 360 megawatts, over three-quarters of its oil capacity, into cold reserve status, and in 1984 it plans to retire 46 megawatts of oil-fired capacity at its Milesburg station. The cold reserve capacity will be reactivated in 1988 and 1989.

For the last several years the Company's ten-year plans identified three 630-megawatt coal plants at the proposed Lower Armstrong site. No substantial licensing or construction work on those units has taken place or is scheduled to take place. The Company's 1982 Annual Report to shareholders (page 2) states that Lower Armstrong "is no longer part of our generation planning..." and "...is no longer feasible from the financial standpoint. The Lower Armstrong site remains an excellent one for additional base-load generating capacity." Tables I-26 through I-28, however, assume that two 630-megawatt coal-fired units will be available for service in 1991 and 1993, as indicated by the Company.

Delmarva Power & Light

In recent years Delmarva has been the most oil-dependent of the four major Maryland utilities and one of the most oil-dependent utilities in the nation. A major reason for this is the fact that Edge Moor 5, a 417-megawatt oil-fired unit, represents nearly one-fifth of its capacity. It also maintains a substantial amount of combustion turbine peaking capacity and several older oil-fired steam units.

In the past few years DP&L has made substantial progress toward reducing that dependence. The 400-megawatt Indian River 4 coal unit began service in 1980 and over 300 megawatts of nuclear capacity from ownership shares in the Salem and Peach Bottom nuclear units have been added. In 1982, 167 megawatts of Edge Moor 4 were converted from oil to coal, and the Edge Moor 3 unit is scheduled for conversion in 1983. In 1985 the Company will receive back 50 megawatts of Indian River 4 that has been under a long-term lease to Atlantic City Electric Company since 1980.

The Company's largest planned project, however, is the Vienna Unit No. 9, a 500-megawatt coal-fired plant to be constructed at the existing Vienna Station in Dorchester County, Maryland. The Maryland Public Service Commission granted the Company a license to construct the plant in 1981. Scheduled for the late 1980s, DP&L planned to retain ownership over 325 of the 500 megawatts, with Atlantic City Electric owning 125 megawatts and Old Dominion Electric Cooperative (the parent generation and transmission cooperative for the Eastern Shore cooperatives) owning 50 megawatts.

The combination of a weak service area economy, narrowed coal-oil price differentials and a new interest in load management have led DP&L to defer the Vienna 9 in-service date until 1995. This change was filed with the Maryland Public Service Commission in December 1982. During the original licensing hearings (Case No. 7222) both the Company and PPSP concluded that it may be cost-effective to construct the plant in advance of load growth in order to obtain the fuel savings associated with "oil-backout." Recent Company studies, however, indicate that with falling oil prices this no longer appears to be true.

In addition to the construction of Vienna 9, DP&L will be making several other changes. The Edge Moor 1 and 2 units (140 megawatts) will be retired in 1983. Over the next ten years the Company will be retiring some of its older combustion turbines (and small oil steam units) and replacing them with new ones. As a result of these changes DP&L's oil units will represent 26 percent of total capacity in 1992 compared to 56 percent in 1979. Finally, DP&L projects that it will cross over in 1995 from a summer peaking to a winter peaking system. Because its capacity ratings are somewhat greater in the winter, DP&L "gains" 58 megawatts of capacity that year, assuming its forecast of a seasonal peak shift is accurate.

Potomac Electric Power Company

PEPCO is a predominantly coal-fired system with coal accounting for nearly 94 percent of system generation in 1982. However, it differs from BG&E and DP&L in that it has not been moving away from oil capacity. In late 1981 Chalk Point 4, a 600-megawatt oil-fired unit, was added increasing oil- and gas-fired capacity from 40 percent in 1979 to 44 percent in

1982. Retirements of older oil-fired capacity kept that percentage from being even greater. Chalk Point 4 is currently being operated as a cycling unit.

Due to its projected slow load growth, PEPCO has perhaps the least active construction program of the four major utilities. Current plans call for a 300-megawatt coal plant to begin service in 1993 and the retirement of the Potomac River Units 1 and 2 (174 megawatts) in 1991. PEPCO, however, is currently conducting studies to determine the feasibility and cost-effectiveness of upgrading and extending the service life of these units. It may be particularly desirable to do so since these are coal-fired units.

F. Future Adequacy of Service

The previous two sections presented the ten-year load forecasts prepared by PPSP and the utilities and each company's generation expansion plan. This section combines both the supply-side and demand-side to evaluate the adequacy of these plans in providing future reliable service. Tables I-30 and I-31 present this information for the four major utilities through 1992 using PPSP and Company load forecasts. 1982 figures are actuals.

Utility planning horizons are typically longer than the ten-year period discussed in this section. However, there is a high degree of uncertainty concerning the exact year when plants contemplated for the 1990s will enter service. Undoubtedly these dates will be moved back or ahead depending upon how actual demand compares with that currently forecasted. Moreover, the Maryland Public Service Commission currently requires utilities to report only ten-year capacity plans.

Table I-30 is a set of supply and demand comparisons based upon the most recent load forecasts prepared by the utility companies. Maryland utilities plan their systems so as to achieve certain minimum required generating reserve margins. Typical margins for PJM utilities (BG&E, PEPCO and DP&L) are 15 to 20 percent of peak demand and roughly 20 to 25 percent for APS. According to this table all four utilities will meet or exceed these reliability standards over the next decade. In the case of BG&E, after the first Brandon Shores unit enters service in 1984, reserves will rise to 30 percent. After 1984 reserves will gradually decline and then rise to 32 percent in 1989 with the second Brandon Shores unit. The reserve margin again gradually declines, reaching 24 percent in 1992. The PPSP forecast shown on Table I-31 yields similar results, except that reserves are somewhat higher in the early years and lower in the later years. The 1992 reserve margin shown in that table is 19 percent. Beyond Brandon Shores, BG&E will need additional capacity in the early or mid-1990s if load growth beyond 1992 continues at the pre-1992 rates shown in the PPSP and Company forecasts.

Table I-30. Company Forecasted Peak Demand, Generating Capacity and Reserve Margins, 1982-1992[a]
(Megawatts)

	BG&E			DP&L			Pepco			APS[c]		
	Demand	Capacity	R.M.	Demand	Capacity	R.M.	Demand	Capacity	R.M.	Demand	Capacity	R.M.
1982[b]	3,924	5,025	28.1%	1,523	2,303	51.2%	4,146	5,343	28.9%	5,022	7,514	49.6%
1983	4,200	5,025	19.6	1,512	2,172	43.7	4,100	5,343	33.6	5,550	7,178	29.3
1984	4,290	5,594	30.4	1,546	2,160	39.7	4,058	5,343	31.7	5,731	7,157	24.9
1985	4,410	5,691	29.0	1,581	2,211	39.8	4,105	5,343	30.2	5,938	7,577	27.6
1986	4,500	5,766	30.9	1,634	2,211	35.3	4,153	5,343	28.7	6,150	7,997	30.0
1987	4,590	5,708	24.4	1,632	2,171	33.0	4,208	5,343	27.0	6,357	7,997	25.8
1988	4,680	5,708	22.0	1,676	2,171	29.5	4,259	5,343	25.5	6,551	8,151	24.4
1989	4,780	6,328	32.4	1,712	2,171	26.8	4,302	5,343	24.2	6,731	8,358	24.2
1990	4,870	6,328	29.9	1,745	2,171	24.4	4,355	5,169	22.7	6,907	8,358	21.0
1991	4,960	6,328	27.6	1,770	2,171	22.7	4,397	5,169	17.6	7,089	8,988	26.8
1992	5,040	6,260	24.2	1,795	2,171	20.9	4,439	5,169	16.4	7,258	8,988	23.8

(a) Data from Ref. 5.

(b) 1982 numbers are actual.

(c) Figures refer to peak demand for the winter beginning in the designated year. For example, the 1983 APS peak demand refers to the winter of 1983/1984.

Table I-31. Forecasted Peak Demand, Generating Capacity and Reserve Margins, 1982-1992[a]
(Megawatts)

	BG&E			DP&L[b]			Pepco			APS[c]		
	Demand	Capacity	R.M.	Demand	Capacity	R.M.	Demand	Capacity	R.M.	Demand	Capacity	R.M.
1982	3,924	5,025	28.1%	1,523	2,303	51.2%	4,146	5,343	28.9%	5,022	7,514	49.6%
1983	4,001	5,025	25.6	1,594	2,172	36.3	4,197	5,343	27.3	5,910	7,178	21.5
1984	4,132	5,594	35.4	1,641	2,160	31.6	4,239	5,343	26.0	6,093	7,157	17.5
1985	4,267	5,691	33.4	1,694	2,211	30.5	4,283	5,343	24.7	6,294	7,557	20.1
1986	4,406	5,766	30.9	1,749	2,211	26.4	4,339	5,343	23.1	6,443	7,997	24.1
1987	4,546	5,708	25.6	1,808	2,171	20.1	4,339	5,343	23.1	6,626	7,997	20.7
1988	4,688	5,708	21.8	1,869	2,171	16.2	4,442	5,343	20.3	6,810	8,151	19.7
1989	4,834	6,328	30.9	1,934	2,171	12.3	4,505	5,343	18.6	7,000	8,358	19.4
1990	4,983	6,328	27.0	2,001	2,171	8.5	4,567	5,343	17.0	7,236	8,358	15.5
1991	5,122	6,328	23.5	2,068	2,171	5.0	4,628	5,169	11.7	7,390	8,988	21.6
1992	5,262	6,260	19.0	2,138	2,171	1.5	4,684	5,169	10.4	7,580	8,988	18.6

(a) Capacity figures are from the Company's latest generation plan. Peak demand figures are PPSP forecasts. Pepco load projections are preliminary. Data from Ref. 5 and 15.

(b) Peak excludes Getty refinery.

(c) Figures refer to peaks and installed capacity for winter beginning in designated year.

DP&L is forecasting extremely slow growth over the next decade -- 272 megawatts over ten years. This slow load growth is assumed to be attributable to a sluggish Delaware economy and an ambitious load management program. The Company experienced an extraordinary 51 percent reserve margin in 1982. Since DP&L is not planning on adding any new capacity over this period (net of retirements), the reserve margin gradually falls, reaching 21 percent in 1992. The PPSP forecast shows somewhat more rapid load growth. Because it was prepared in 1980, it does not incorporate either the depressed Delaware economy since 1980 or the Company's load management plans. However, if the PPSP load growth shown on Table I-31 does occur, DP&L will need to accelerate Vienna Unit No. 9 to 1990 or 1991 to maintain the required reserve margin.

PEPCO also has, and for the rest of the decade is projected to have, excess reserves. With no new capacity additions PEPCO's reserve margin will fall from 29 percent in 1982 to 16.4 percent in 1992. Thus new capacity will be needed under this scenario by the early 1990s to maintain the required reserve margin. The PPSP forecast of load growth is slightly more rapid, and indicates a need for new capacity by 1991.

APS peak loads have been extremely volatile in recent years. The peak occurring in the winter of 1981-1982 was 5,720 megawatts. The combination of depressed economic conditions and a mild winter resulted in a peak for the winter of 1982-1983 of 5,022 megawatts. With 7,514 megawatts of capacity, this is a reserve margin of 49.6 percent. The combination of projected load growth and nearly 46 megawatts of capacity retirements will result in lower reserve margins. In addition, 361 megawatts will be placed in cold reserve storage. Under the PPSP load projections reserves are slightly under those projected by APS. The capacity column assumes that 630 megawatts will be forthcoming in 1991. If the units are not constructed, and if no replacement is found, reserves could fall to levels below the APS reliability standard after 1990.

A fairly consistent pattern emerges across all four utilities. During the early 1980s the Maryland utilities have and are currently experiencing excess capacity. This excess gradually diminishes (except for BG&E) as load growth occurs and little new capacity is added. Substantial additional capacity is needed by the early to mid 1990s depending upon which load forecast is used. In general the plans of the Maryland utilities appear adequate. Questions remain regarding the appropriate schedule for Vienna 9 and APS' ability to serve load after 1990.

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